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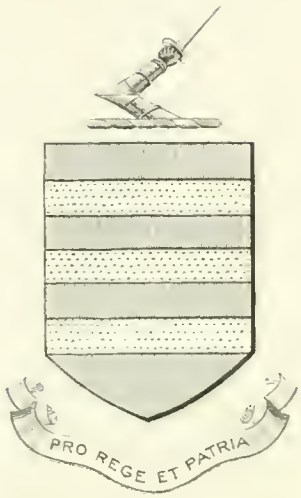

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MEDICAL RECORD

A Weekly Journal of Medicine and Surgery

EDITED BY

THOMAS L. STEDMAN, A.M., M.D.

Volume 69.

JANUARY 6, 1906—JUNE 30, 1906

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NEW YORK
WILLIAM WOOD AND COMPANY
1906

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Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 1.
Whole No. 1835.

New York, January 6, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

RUPTURE OF THE ESOPHAGUS RESULTING FROM EXTERNAL TRAUMATISM.*

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A perusal of the literature appertaining to injuries of the esophagus shows that there is some confusion as to the exact meaning of the term rupture of the esophagus. In this paper by the term rupture of the esophagus is meant a complete, defined solution of continuity, extending through the walls of this tube and occurring during life. This excellent definition is the one adopted by Fitz[1] in his admirable work, "Rupture of the Healthy Esophagus."

The object of this treatise is to deal more especially with ruptures of the esophagus as a result of external traumatism.

Solutions of continuity as the result of swallowing foreign bodies, together with their destruction of tissue by pressure or subsequent inflammation, will not be considered; nor will stab wounds resulting in perforation of the esophagus find any place, and lacerations of the esophagus by bullet wounds will be dismissed with the following rather remarkable fact: throughout our entire civil war there was but one case of bullet wound of the esophagus reported.[2]

Rupture of the esophagus resulting from external traumatism is extremely rare. This is due partly to its elasticity, mobility, and secluded position. Its situation in the posterior mediastinum, surrounded by blood-vessels, nerves, the thoracic duct, and lymphatic glands, bounded in front by the cushion-like construction of the lungs, and further defended by the sternum and spinal column acting as shields, imparts to this organ a most protected position from any external violence. The relaxed condition of the tube, its loose attachment to the pleuræ and surrounding parts, and its elasticity, act as additional guards, as these factors make it possible for the organ to be pushed away from any external influence that would result in its harm. A further factor in its protection is its posterior relations, the anterior convex surfaces of the vertebræ, and the thoracic aorta upon which it rests making a most excellent rounded base upon which to slide from side to side out of harm's way.

Rupture of the esophagus from external violence is thus so rare as to deserve careful consideration, and, from the fact that the literature of the subject is very barren, every case is worthy of record. This is especially true when the rupture has been positively recognized by post-portem examination and the record is accompanied by a full autopsy report.

The history of the case which serves as the nucleus of this paper is as follows:

Miss H. W., age 44, a mill-hand, was injured about 9 A.M., November 21, 1904, by having her body caught between the trap-door of a safety elevator and a brick wall. The space in which she was caught measured about nine inches, and the pressure was sufficient to break the door in pieces.

I arrived about ten minutes after the accident and found the patient sitting on a stool in a bent-up position and complaining of a dull pain in the lower left portion of the left mammary region. She was perfectly conscious, had not fainted nor vomited since the accident, and insisted that she was not hurt. A physical examination, however, showed a decided cyanosis, this cyanosis being especially well marked in the regions of the mouth, nose, ears, and fingernails. Respirations were 32 and labored; pulse 120, weak and somewhat intermittent, and temperature 98.6° under the tongue. Auscultation showed all heart sounds weak, but in normal locations; no abnormal dullness anywhere in the chest; respiratory sounds quickened, but otherwise normal. There was no fracture of the ribs.

There was an irregular bruised area over the left breast, in which the skin showed a blue discoloration. A linear laceration 7 cm. long was found, extending from the umbilicus upward and outward, and surrounding it was a quadrilateral area over which the skin was discolored, and in which were several vertical scratches running parallel. This laceration extended down to the transversalis muscle in such a manner as to loosen the internal oblique from the transversalis for a considerable distance. A hypodermic of nitroglycerin (gr. 1/50) and inhalations of ammonia seemed to clear up the cyanosis.

The possibility of an internal injury was fully explained to the patient, and I recommended that she be taken to a hospital. In spite of my advice, she flatly refused to be moved to a hospital, and it was a difficult matter to convince her that it was necessary for her to be taken to her home.

A more thorough examination, made at her home an hour later (10 A.M.), showed a pulse of 92, fair quality; respirations, 24, not labored, and temperature 98.6°; no cyanosis. She still complained of pain in the left side, but a careful examination failed to reveal anything abnormal save the skin discoloration. There were no fractures of the extremities, but while the patient insisted that she had no pain in the pelvic region, well marked crepitus could be detected on manipulating the pelvis. This crepitus was most marked at the symphysis pubis. Normal urine was voided at 9.45 A.M. On percussion, there was a well-defined dullness throughout the left inguinal and left half of the hypogastric region. Palpation elicited no tenderness in these regions. The body and extremities showed many bruises and abrasions.

The abdominal wound was rendered aseptic and closed with five interrupted catgut sutures. A firm bandage (such as is used after a symphyseotomy) was applied around the pelvis.

Realizing that no patient who has met with an accident likely to cause an internal injury should be considered safe until after the lapse of at least twen-

*Read before the Medical Society of the County of Albany. November 8, 1905.

ty-four hours, I ordered that this patient should be kept absolutely quiet in bed, and that she take no nourishment until I made my next visit. These directions were not followed. Soon after I left the house she sat up in a chair and in the afternoon partook freely of clam broth and milk. When I saw her at 5 P.M. she presented a most alarming condition. The face bore a most anxious expression; she complained of severe pain in the left of the thorax; respirations, 60, jerky, and accompanied by retraction of the suprasternal and supraclavicular spaces; pulse, 160, weak, thready; temperature, 99° (tongue).

Inspection of the chest showed exaggerated respiratory movements on the right side, with diminished expansion on the left. There was no displacement of the heart apex. Percussion showed marked flatness in the lower left region, the upper boundary of flatness changing according to the position of the patient. Respiratory sounds were greatly diminished, deep seated, or entirely absent over the flat area. Auscultation also showed exaggerated breathing over the right lung.

In view of the sudden onset of the above symptoms, I made a diagnosis of hemorrhage in the left pleural cavity; rupture of the esophagus, together with milk and clam broth in the left pleural cavity being entirely unsuspected. No positive diagnosis was made of the condition in the left iliac region.

The patient sank rapidly and died at 8 P.M., about eleven hours after the accident. During this interval of eleven hours she never vomited, nor did she complain of any pain except over the left mammary region. This pain was intensified in the recumbent position, the patient receiving the most comfort by sitting up with the body bent forward. There was no tumefaction in the supraclavicular region, nor was there any trace of an emphysematous condition anywhere. There was a slight cough following the accident. After taking the nourishment this cough was somewhat increased.

The patient had always been a hard-working woman, of good habits, an habitual small eater, and not an alcoholic. Her sister stated she had never complained of any stomach trouble and was not subject to vomiting. The accident occurred about two hours after her breakfast, which consisted of some crackers and coffee.

I am greatly indebted to Dr. E. MacD. Stanton of the Bender Hygienic Laboratory, who performed a very careful post-mortem examination. The following notes are from the autopsy protocol:

"H. W., white, age 44; service of Dr. Lomax. Body is that of a small-framed, well-nourished woman. Length of body, 152 cm. Rigor mortis present. Pupils equal. No edema present. Over the left breast is an irregular area, 9 x 3½ cm., in which the skin shows a brownish-red discoloration. On the abdomen, to the left of the median line and above the umbilicus, is a quadrilateral area measuring 8 x 10 cm., over which the skin is brownish-red in color and shows numerous parallel vertical scratches. Extending from the umbilicus through this area for a distance of 7 cm. is a linear laceration, closed by five interrupted catgut sutures.

"Abdominal cavity contains about 400 c.c. of apparently serious blood-stained fluid. At the middle of the transverse colon is an area 6 cm. in length, in which the subserous tissues show a reddish discoloration, together with several linear tears.

"Right pleural cavity contains approximately 500 c.c. of slightly blood-stained fluid."

"Left pleural cavity contains approximately 1,100 c.c. of dark, cloudy, straw-colored fluid, having a sour acid odor and containing numerous masses of soft, curd-like material. In the posterior mediastinal tissues, just anterior to the descending aorta, 2 cm. above diaphragm, is an irregular laceration 2 cm. in diameter, which opens in the left pleural cavity, and from which exudes a material similar to that found in the pleural cavity. A probe passed downward through the laceration passes through the cardiac orifice into the stomach and upward into the esophagus.

"Lungs and pericardial cavity negative.

"Heart negative, except some soldier's patches over right and left ventricles. Myocardium soft, grayish-brown in color.

"Pelvis: retroperitoneal pelvic tissues are filled with bloody exudate. At the symphysis pubis is a fracture extending along the line of symphysis, allowing a separation of ½ cm. A second line of fracture extends from the ramus of ischium. The third line of fracture extends along the sacro iliac junction.

"Anatomical diagnosis: Traumatic rupture of esophagus, with escape of stomach contents into left pleural cavity. Multiple fractures of the pelvis. Serohemorrhagic fluid in abdominal cavity and right pleural cavity. Multiple bruises of skin surfaces."

The specimen of the ruptured esophagus has been placed in the museum of the Bender Hygienic Laboratory, Class O, No. 807.

My interest in the case stimulated me to look up in the literature all reported cases, to refresh my knowledge of the anatomy of the esophagus and surrounding parts, and thus, after a due consideration of the anatomy and an impartial study of the reported cases, venture to explain why and in what manner this peculiar accident happened to the esophagus.

To this end several dissections were made and a series of experiments performed in the dissecting room of the Albany Medical College.

In searching for similar cases, the literature on wounds, ruptures, and perforations of the esophagus was found to be very voluminous; but, unfortunately, it was impossible, in most instances, to ascertain from the titles of the works whether the ruptures had been the result of external or internal causes. Hence, in order to review all cases of rupture as the result of external traumatism, it was necessary to go over the entire field. This necessitated a review beginning with the first case of rupture of the esophagus reported,[3] that of the celebrated Dutch Admiral, Baron Wassenaer, so minutely described in Latin by the renowned and much-beloved Boerhaave, and ending with the works of Whipham[4] and Dupas.[5]

Dupas' paper was published in a veterinary journal in 1903, and in the same year H. G. Simpson[6] published a paper on "Rupture of the Esophagus in the Horse." Simpson, Whipham, and Dupas are the latest contributors to the literature, their papers appearing in 1903.

A thorough review of a very extensive series of cases from all known sources shows there has been, up to this time, but one case on record which can be properly included under rupture from external traumatism. With the exception of a border-line case, all other cases are instances of ruptures from muscular action, perforations associated with various pathological conditions outside the esophagus, foreign bodies within this tube, or else they are cases of ante-mortem or post-mortem softening.

The case reported by Raiimondi[7] is particularly interesting, in that it is the only other case on record in which the esophagus ruptured as a direct result of compression of the thorax. The case also has so

many points similar to mine that a brief review follows:

M. G., male, age 39, lamplighter in a railroad station in the city of Siena, on the evening of November 14 (time not given) was caught between the bumpers of a locomotive and coach, one bumper over the epigastrium and the other over the back. When he arrived at the hospital, shortly after the accident, his breathing was rapid and superficial, and he complained of pain over the costal region. Face cyanotic. There was a contusion over epigastric region. Palpation revealed no fracture. Abdominal muscles much contracted and palpation produced much pain. Treatment consisted of ice to epigastrium and hypodermic of morphine. At 9 P.M. the condition was as follows: General condition worse. Emphysema in suprasternal and supraclavicular spaces. Respirations on right side abolished. Percussion on right side gave well-marked tympanitic sound, and on the left, normal sound. Respiratory murmurs abolished on right side; on the left side the respirations were rough and accompanied by a vesicular murmur. Raiimondi made a diagnosis of pneumothorax, bilateral, but more marked on right side. Later in the evening the cyanosis was more marked and the body was cold. Death occurred at 5.30 A.M., November 15. During the death struggle the breathing was very labored, and the emphysema had extended down to the inguinal regions.

Post-mortem examination revealed the following conditions: Rupture of esophagus, laceration of right pleura, passage of stomach contents into right pleural cavity, small lacerations of right lung and right-sided pneumothorax. Right pleural space contained about 1,500 c.c. of stomach contents; the left 250 c.c. of sanguineous material. Anterior mediastinum contained gas. The rupture of the esophagus communicated with the posterior mediastinum.

This rupture was situated on the right side of the esophagus, about 8 cm. above cardia, ran in an oblique direction, and measured about 3 cm. The autopsy also revealed several small, ecchymotic spots in parietal and visceral peritoneum. There was a well-marked emphysema extending from the neck to the lower part of abdomen.

From the autopsy findings, Raiimondi considers the rupture of the esophagus the primary lesion and the lesion of the right lung as consecutive. He considers as causes of death, collapse of lung, blood in left pleural cavity, and liquid and semi-liquid contents in right pleural cavity. As to the cause of the rupture, he expresses the following view: "The rupture was the result of pressure of the thorax, while the esophagus was full of gas and liquids, the pressure being sufficient to rupture the esophagus at its weakest point."

T. R. C. Whipham[4] reports a case of rupture of the esophagus from an accident, and as this might be considered a border-line case, the following brief history is given: This case occurred in a man, age twenty-seven years, who had been thrown from a horse. There was a fracture of the skull. The left pleural cavity contained about a pint of fluid and semi-fluid masses. The fluid had the sour odor of beer and the contents of the left pleural cavity was evidently food. A rupture, evidently of recent origin, was found on the posterior wall of the esophagus, communicating directly with the left pleural cavity. The rupture was situated just above diaphragm, measured about one and one-half inches, and was directed longitudinally. There was no sign of a previous lesion.

Whipham expresses two views as to the cause of this rupture. First, a sudden muscular contraction of the pharynx, causing an obstruction to the forcible ejection of food from the stomach, and hence a rupture. Second, that the esophagus was over-distended by the man turning a half somersault while his forehead remained in contact with the ground, in which case the esophagus would have been stretched over the cervical vertebræ, with a rupture as a result. The experiments of von Zenker and von Ziemssen,[8] which will receive full notice later, prove that this second theory is based on impossibilities, and that the first theory is nearer the truth.

While this case of Whipham's was due to an accident, it must be considered as a border-line case of rupture of the esophagus as a result of external traumatism, because the rupture was not the initial lesion. Here the initial lesion was the fracture of the skull. This fracture, with a full stomach, caused vomiting, and the vomiting in turn caused the rupture. The fracture was the primary lesion and the rupture a consecutive one, brought on during the vomiting.

Some writers on rupture of the esophagus are extremely critical and seem to demand much exact evidence before they are convinced that a true rupture has occurred. A few authorities have rejected certain cases as genuine ruptures, while other authorities have accepted the same as true cases of rupture.

In order that all critics may be satisfied as to the genuineness of my case, it will be necessary to produce some positive evidence.

King has called special attention to the frequency of cadaveric softening of the esophagus; but the rupture in my case could not have been the result of cadaveric softening, as the cold weather and short time between death and autopsy would prevent any very marked post-mortem change. Furthermore, there was no evidence of cadaveric softening in any of the internal organs.

Some authorities have rejected cases on the ground that they were instances of post-mortem digestion. The sharp, well-defined tear and the clinical evidence of fluid in the pleural cavity before death would exclude this, and, on the same grounds, we may exclude softening of the coats from peptic solution in the last hours of life.

The autopsy failed to reveal any evidence of adherent caseous glands, aneurysms, with their accompanying erosions, or malignant ulcerations; nor was there any evidence of an antecedent varicose condition of the esophageal veins, and a careful examination could not detect any trace of an agonal esophagomalacia within the tube. The sharply defined edges of the rupture would also go to prove that a gastromalacia was in no way responsible for the rupture. The clinical history and the above evidence conclusively prove that the rupture occurred in a healthy esophagus, that it took place intra vitam, and that it was the direct result of an external traumatism.

The etiology of all ruptures of the esophagus is indeed a moot point and gives rise to much speculation. That we may form a better conception of the exact manner in which rupture as the result of external traumatism takes place, it is necessary for us to view the whole subject of rupture in its different aspects and relations, and to consider attentively all the data, verified by facts and experiments, gathered from the literature concerning injuries to the esophagus.

To begin with, causes of rupture may be divided into three classes: (1) Those that arise from vomiting. (2) Those that are the results of traumatisms

arising within the tube. (3) Those that arise from external traumatism.

Most authorities admit that the esophagus can rupture spontaneously; in which case the rupture is due to vomiting or to a severe shaking up of the body, as from jumping out of a wagon. Of the spontaneous ruptures McWeeney[9] has reported seventeen undoubted cases in which there was an apparently healthy organ. On the other hand, von Zenker and von Ziemssen[8] have demonstrated that the so-called spontaneous ruptures occur in organs weakened by an autodigestion, so that any force acting within or without the tube may cause a tear of the same. The rupture would then take place as a result of any severe mechanical force, as a sudden compression of the thorax. Any force, even the mere contraction of the organ itself, might cause a tear in its walls.

As an additional cause, we may add muscular action: for Fitz[1] has produced evidence which proves that a previously healthy esophagus may be ruptured by muscular action. This seems to be doubted by many. On this point Dr. Douglas Powell[10] says, "It is difficult for an esophagus to rupture unless the nutrition of its coats was previously interfered with."

The case I have reported is unique in many ways. First, it was not the result of vomiting; second, it was not a spontaneous rupture; third, it was not due entirely to muscular contraction; fourth, it occurred in a healthy tube, and fifth, it was a direct result of a compression of the chest walls.

No very great external force would be required to rupture the esophagus if the walls of this tube were weakened by any constitutional disease, providing the stomach or esophagus was full of gas or food when the accident happened.

In 1882 Mr. Stanley Boyd[11] exhibited two specimens of rupture of the esophagus in both of which there had been a severe constitutional disease which weakened the walls of the tube. One case occurred in a woman aged eighteen years, in which the esophagus and gastric mucous membrane showed the recognized signs of self-digestion, superinduced, probably, by a preceding Addison's disease of seven months 'standing. The other case occurred in an infant of four months, who had had an erysipelas and peritonitis following an operation for strangulated undescended testicle.

If in these two cases a rupture followed as the result of mere vomiting, one can easily see how a rupture would result if the thorax had been suddenly squeezed while the stomach or esophagus was full of gas or food.

In speaking of spontaneous rupture McWeeney[9] says: "The rupture is due to, first, softening of the coats, and, second, sudden increase of pressure from within." In the external traumatic cases there is a double pressure—one from within and one from without.

Any disease within the esophagus that will act as a cause of spontaneous rupture will predispose the esophagus to rupture from external violence. It is a well-known fact that the esophagus is less protected against the action of the gastric juices than the stomach, undoubtedly, on account of its much less abundant blood supply. The action of the gastric juice and the circulatory changes to which the lower part of the esophagus is subject, namely varicose veins and accompanying thrombosis, give rise to a true intravitam esophagomalacia.

Von Zenker and von Ziemssen[8] have shown that this esophagomalacia is due to the following prerequisites: (1) Presence of stomach contents rich in pepsin and acid; (2) regurgitation; (3) protracted retention of regurgitated food in the esophagus; (4) sufficient warmth; (5) cessation or great weakness of the circulation.

Any disease of an organ adjacent to the esophagus, whereby its walls would become weakened, would also predispose it to rupture from external traumatism. In this connection may be mentioned aneurysm, cancer, abscess, and tuberculous glands, with the erosions and ulcerations with which they are so frequently associated.

And again, any external traumatism that will give rise to severe and protracted vomiting may cause a rupture. Vomiting as a cause of rupture is an interesting one, and calls for some careful study. That vomiting is a notorious cause of rupture has been proven by many cases, notable of which is the one reported by John Griffin,[12] who summarizes as follows: "There can be no doubt that the violent effort of vomiting had forced a large quantity of the contents of the stomach suddenly into the esophagus, thus causing rupture." Mackenzie[13] and Voiss[14] have given vomiting much careful consideration, and have advanced explanations of much import.

Mackenzie considers that the immediate cause of spontaneous rupture is vomiting, and that vomiting never causes rupture unless the stomach contents cannot be expelled through the esophagus at the same rate that the contents leave the stomach. He states that this is due to a temporary obstruction near the upper end of the gullet, which prevents the outward flow from the stomach. This obstruction may be due to something inherent in the esophagus, such as food, or to a strong contraction of the circular fibers situated at its upper part. In other words, there is a lack of coordination of the muscular action of the esophagus.

Herbert J. Voiss, in his inaugural dissertation[14] (p. 28) has pointed out that when vomiting is the cause of rupture the process is as follows: The circular muscular fibers are relaxed while the longitudinal fibers are contracted; thus there is a shortening of the tube and it is drawn upward. When the abdominal pressure is exerted the stomach contents are driven forcibly upward against the cordia, and there is a flattening of the diaphragm. The contracted condition of the longitudinal fibers (shortening of the tube) and the marked flattening of the diaphragm give rise to a tear of the esophagus. As a result of this tear, the circular muscular fibers contract above the diaphragm, narrow or obstruct the passage upward of the stomach contents, and the contents go sideways through the esophageal wall. He further states that if the vomiting increases and becomes severe, viz., to the point of tetanic regurgitation, the process becomes an extremely painful one.

As regards the location of the rent in the tube, it is a curious fact that in all the reported cases the rupture, with the single exception of one instance, has occurred in the lower third of the tube. In this one exception the rupture occurred at the level of the bifurcation of the trachea. Of the seventeen cases reported by McWeeney[9] one rupture extended to the stomach.

Another singular fact is that, with the single exception of the case reported by Boerhaave, the rupture has invariably been in a longitudinal direction. In Boerhaave's case the rupture was a transverse one; the esophagus was torn completely across, so that the two parts were drawn respectively upward and downward.

The similarity in the location and direction of the rent in so many cases has stimulated investigators to experiment in order to arrive at a possible explanation. Mackenzie,[13] by experiments, has shown that direct pressure within the esophagus gives rise

to a longitudinal tear; that the tear never takes place in the upper part of the tube, is generally confined to its lower third, and that the muscular wall offers less resistance than the mucous.

Brosch[15] and Bowles and Turner[16] have also proven by experiments that the lower third is the weakest part of the tube, and that its posterior wall is the weakest of all. Their experiments consisted of increasing the pressure from within by means of either gases or fluids. The involuntary muscular fibers, which alone constitute the muscular structure of its lower portion, may account in a measure for the weakness at its lower part.

The experiments of von Zenker and von Ziemssen[8] (p. 96) show that the muscular wall offers less resistance than the mucous. Their experiments also show that the esophagus can stand a considerable amount of stretching, and that this stretching can be kept up for quite a length of time. In one experiment the esophagus bore a weight up to five kilograms without tearing. Before stretching, the tube, between the bands, measured seventeen centimeters. It stretched to twenty-four centimeters before it showed any evidence of a tear; and then, after a weight of five kilograms had been used for almost one minute, the thin cellular coat and the muscular layer tore in a circular direction and retracted from the underlying mucous layer. All this time the mucous membrane remained uninjured. A further experiment showed that the mucous membrane withstood a weight up to ten kilograms for several seconds before it gave way. It stretched considerable and then tore in a ragged circular direction.

No one has apparently explained the accompanying laceration of the pleura, which is so loosely attached to the esophagus. The laceration of the pleura is probably due to direct pressure.

Some experiments were conducted in the dissecting room of the Albany Medical College, in order that we might the better explain the manner in which an external traumatic rupture takes place. These experiments were, however, entirely untrustworthy because of the various conditions brought about as the result of death. We were experimenting on bodies in which life had been extinct for some time; the various tissues were more or less hardened from the action of formalin, and the collapsed lungs, stomach, and intestines did not lend the same support to the esophagus as in life. The circumstances, therefore, were so unlike those found in life that no definite conclusions could be scientifically proven, and it would be useless to mention these experiments. The dissections did show, however, that the lower part of the esophagus is more movable than is generally supposed; that the tube as a whole can be stretched longitudinally, and that in the posterior mediastinum it can be pushed from side to side without injury to itself or neighbors.

The bulk of evidence obtained by many dissections, together with an extensive study of the mass of facts gathered from the literature, appears to support the view that when the esophagus ruptures as the result of external traumatism, the rupture is due to a double pressure; one from without and one from within the tube. Both of these pressures are brought about by a squeezing process. This squeezing process forces gas or food out of the stomach in the direction of least resistance. The action of the pyloric valve prevents, to a very great extent, any exit from the stomach in that direction; the cork-like effect of the food producing a further barrier as the food is suddenly wedged up against the pylorus. Thus the contents of the stomach are forced upward. At the same time there is a lack of coordination of the muscular structure of the esophagus, brought on by fright, pressure of the esophagus or injury to the pneumogastric nerve, and the circular muscular fibers of the upper part of the tube are suddenly contracted, and there is a temporary obstruction near the upper end of the gullet which prevents the contents of the stomach from being expelled from the esophagus at the same rate as they enter the tube. This obstruction is probably fortified by a sudden contraction of the pharyngeal constrictors, and the food itself blocks up the upper exit. The esophagus is thus violently distended in a balloon-like manner, and there is thus much pressure from within. This squeezing process also gives rise to an external pressure. The thorax is caught between two forces tending to meet. One force is applied to the spinal column or vicinity, and the other to the anterior thoracic region or epigastrium. The force coming from behind is restricted to some extent by the spinal column, but the force coming from in front does not meet with the same resistance. Owing to the elasticity of the ribs and costal cartilages, the sternum and thoracic wall are pushed backward, and the lungs being full of air, the heart is made to approach the spinal column. By this external pressure the already overdistended esophagus is compressed between the heart in front and the spinal column behind, and, as both outlets are closed, the food or gas is forced in the direction of least resistance, viz., through the esophageal wall at its lower third. Some of the esophageal contents would be pressed upward; but it is reasonable to suppose that most of the contents would be driven downward with such force that they would enter the posterior mediastinum or either pleural cavity.

If the force from in front meets the epigastrium in place of the anterior thoracic wall the stomach contents are driven with great force into the esophagus, the diaphragm is pressed upward, the capacity of the thorax is very much diminished, and the overdistended esophagus ruptures as the result of pressure from all sides.

Three forces, therefore, enter into the etiology of external traumatic rupture: First, pressure from without; second, pressure from within; third, muscular contraction. Pressure from within cannot take place unless the stomach contains gas or food. It is altogether likely that the rent takes place first in the muscular and cellular walls, and that the mucous membrane is the last to rupture.

In the case I have reported the clinical history would suggest that the stomach contained gas, with little food, and that the gas alone was responsible for the internal pressure. The physical examination and autopsy demonstrated that the material found in the left pleural cavity was food taken subsequent to the accident: the food passing through the rent directly into the pleural cavity.

In view of the fact that the rupture is seldom recognized during life, a detailed narration of the symptoms is particularly called for. In my case there were hardly any symptoms which might be considered as directing exclusive attention to the esophagus, and it was, therefore, exceedingly puzzling to make an exact diagnosis. The sudden tearing pain and the sensation of injected fluid noted in ruptures from internal causes are not of much import when the rupture is the result of an external traumatism, as the severity of the external blow is sufficient to mask the above symptoms. The two symptoms, dyspnea and cyanosis, seem to go hand in hand. The cyanosis is most marked in the region of the face. The breathing is rapid, superficial, and may be performed exclusively by the diaphragm. The characteristic position, the patient sitting up

with the trunk stooped forward, is probably due to genuine orthopnea. The simultaneous disturbance of respiration and circulation is so suggestive of a lesion in the vicinity of the pneumogastric as to demand some review of the anatomy and physiology of this nerve.

My dissections lead me to confirm the belief that much of the severity of these urgent symptoms depends upon the degree and extent of the injury to the pneumogastric nerve. It is to be recalled that the pneumogastric, with its plexiform arrangement (plexus gulæ), is intimately associated with the esophagus, the right and left nerves uniting along its anterior surface to form the plexus; this nerve, together with its communications with the cervical sympathetic, forming a plexus which is situated between the two muscular layers, and a second one situated in the submucous layer. Groups of ganlionic cells are found in each plexus. The esophageal branches of the pneumogastric are quite numerous, some being distributed above, but the largest and greatest number being distributed below. Its many branches, their intricate communication with other nerves, and their extensive distribution, make this one of the most important of the cranial nerves. It is both a sensory and a motor nerve, its sensory and motor fibers being distributed to the organs of voice and respiration, while the pharynx, esophagus, stomach, and heart are supplied by its motor fibers. Its functions are as varied as its distributions. It has an influence on deglutition, stomach and pancreatic secretion, respiration, heart action, and a marked trophic influence over the lungs. When we come to realize the importance of this nerve, especially when coupled to the sympathetic, and consider its intimate association with the esophagus, it is not unreasonable to suppose that the dyspnea and cyanosis are accountable to some lesion of, or shock to, this nerve.

In this connection one may not be far out of the way in supposing that the loss of coordination in the esophageal muscular fibers is due to the same cause, and that a sudden contraction of its upper circular fibers is brought about by a temporary loss of function of the pneumogastric.

Collapse is a very characteristic symptom, and while in this stage the face bears the hippocratic countenance and the features denote anxiety. The extremities are cold, and copious perspiration, especially from the neck and face, is common. The pulse is small, weak, and may be intermittent. The expression of the face shows the patient to be in a painful state of mind, and the fear of impending death, with its accompanying depressed condition of mind, may act as a psychological cause of this collapse. Certain it is that hemorrhage is not an etiological factor. Acute sepsis can be assigned as a cause, providing the patient lives long enough for sepsis to develop; and here it is well to remember that an acute sepsis can occur without necessitating any rise of temperature. Collapse may be charged to some severe injury of the lung or pleura. For instance, if the esophagus and pleura are both injured to such an extent that there is a marked hydropneumothorax, collapse may develop as the result of a suddenly compressed lung.

Voiss[14] says: "Collapse is probably due to injury to the vagus nerve, whose stimulation or paralysis may very readily occur because of its exposed location." This undisputed statement of Voiss must be considered as having much weight.

In spite of the fact that vomiting is generally looked upon as an early manifestation of rupture, it was not present in my case, and no mention of vomiting is made in the case reported by Raiimondi. While a study of all the reported cases of rupture shows that vomiting is the rule, in quite a few cases vomiting has been entirely absent. When vomiting has taken place it has probably had considerable to do with the cause of the rupture. If there is vomiting it generally ceases at the onset of collapse, and collapse without any further vomiting is a very important sign, although Allen's case (quoted by Voiss) shows that vomiting can continue indefinitely. Vomiting of blood is of little or no value as a symptom of rupture, as the blood is more than likely to come from the lungs.

Emphysema is a very important symptom. Owing to the close relation of the trachea, esophagus, and posterior mediastinum, emphysema is more likely to occur if the trachea has been involved in the rupture. However, there can be well-marked emphysema in the absence of any very great lesion of the lung. While emphysema is very often attributed to rupture of the lung, M. Louis (quoted by C. Colegrove[17]) declares that it may happen independently of any rupture of the lungs.

Colegrove also appends the following interesting paragraph from Dorsey's Cooper: "We may infer that from a mere rupture of a few of the bronchial cells, occasioned by irregular action of the lungs, or some other internal cause, a spontaneous diffusion of air may take place in the cellular texture of the body. Such examples are dependent on the same cause as emphysema from injury of the lungs, only the rupture of the bronchial cells in the former cases is less obvious."

Emphysema requires air and then sufficient pressure to drive the air forward into the surrounding tissues. The air may come from the lungs, in which case it is partly aspirated by the negative pressure of the lungs. It may be swallowed by the patient and enter the tissues directly through the esophageal rent, or it may enter the stomach and be forced through the rent as the result of vomiting, in which case gas from the stomach would make up part of the emphysema.

At any rate, the air or gas takes an exit through a false passage and enters the posterior mediastinum. When once in this space it is driven upward for want of opposition; the expiratory pressure, which is increased by coughing or vomiting, being sufficient to drive the air along from the posterior mediastinum into the tissues of the neck. Tumors, abscesses, and the like, when situated in the vicinity of the posterior mediastinum, would have a tendency to oppose the passage upward of air, and would tend to limit the emphysema. Severe pain also has a tendency to lessen emphysema because pain restricts respiratory pressure.

The first indication of an emphysema is a tumefaction, which appears in either supraclavicular region. This swelling soon becomes markedly emphysematous, constantly increases, and may spread over the entire body. This symptom is not always present. In my case it was absent, although a diligent search was made for it. In the case reported by Voiss its absence was possibly due to the very superficial respiration, slight cough, and no vomiting. In quite a few cases (notably Allen's) the emphysema has extended over the whole body. It would seem from the reported cases that the behavior of emphysema depends to some extent upon the severity of vomiting.

Cough is not a constant symptom, but when present is very painful.

Deglutition is not particularly disturbed; fluids may be easily swallowed and without apparent discomfort. As a rule, there is a diminished quantity of urine. Increased dyspnea and collapse close the

scene, death claiming the victim within twenty-four hours.

Notwithstanding the fact that the history, symptoms and physical signs have closely resembled each other in all reported cases, a diagnosis of rupture of the esophagus is seldom made. The condition is so rare that the medical attendant is entirely off his guard and does not suspect an injury to the esophagus; and the text-books give him no assistance, as the most of them are absolutely silent on the subject. A noteworthy exception, however, to this book silence is the short but well-written article by von Hacker,[18] to which I would refer interested readers.

Hamburger[19] says: "The diagnosis of rupture of the esophagus is first made upon the corpse, and often contrary to all expectations," to which may be added the words of Fitz, "even then the diagnosis may be attended with very great difficulties."

One of the objects of this paper is to present the case in such a light that a diagnosis can be more readily made in future cases. A résumé of the symptoms shows that vomiting, collapse, cyanosis, dyspnea to the extent of orthopnea, and emphysema are symptoms of the first rank.

The above symptoms, then, would lead one to suspect a rupture in all cases in which there had been an accident likely to cause a sudden violent compression of the thorax. Extreme precordial oppression, acceleration of pulse, severe pain, either fixed or situated in the course of the esophagus and increased by movements of the spine, would give additional ground for suspicion. Finally, a diagnosis of this rare condition can be made with some degree of certainty if to the above symptoms a physical examination of the chest shows evidence of a pneumo-hydrothorax or a more or less collapsed lung.

A sufficient amount of stomach contents in either pleural cavity would give practically the same physical signs as if the cavity contained a serofibrinous effusion, a serous transudation, pus or blood. Hence, it is of paramount importance that the physical examination include a careful use of the stethoscope, and that we bring to our aid the valuable means of inspection, palpation, percussion, and succussion. The use of Hamburger's auscultatory phenomena,[19] consisting of the extinction of the sound produced by swallowing, at the point of rupture, accompanied by a whistling noise, ought not to be adopted, because the material swallowed would pass through the esophageal rent and further damage the surrounding organs.

Secondary complications are rare. Were the patients to live long enough, we would expect such complications as acute emphysema, with a possible secondary gangrene of the lung; or lobular pneumonia from the entrance of food, blood, or pus. If the opening extended into the pericardium, a pyopneumopericardium might result.

The prognosis should be well guarded in all injuries to the chest; and no patient who has met with an accident likely to cause an intrathoracic lesion should be considered safe unless, after the lapse of at least forty-eight hours, he presents a normal pulse, circulation, respiration, and temperature, has had no protracted vomiting, and a rigid physical examination fails to discover any abnormal condition. If there be the least evidence of a ruptured esophagus, the prognosis is to be particularly guarded, as the accident has hitherto been invariably fatal. Its fatality is based partly on the fundamental rupture and partly on the accompanying injury to neighboring organs; and here one must not forget the secondary lesions in surrounding organs that will eventually follow in the wake of the rupture.

The most serious and dangerous elements are shock, collapse of the lung, laceration of pleura, with the presence of blood, and liquid or semi-liquid stomach contents in pleural cavity.

The symptomatic treatment of ruptures, the treatment hitherto followed, consists in lessening pain and introducing food and water into the system by high rectal injections. The introduction of food and drink per mouth is to be entirely suspended for three reasons: First, to prevent their entrance into the rent; second, to ward off further complications to the neighboring organs, and third, to facilitate the closure of the wound.

Voiss advises lessening the pain until death occurs. This advice was given in 1881, before Nasiloff drew attention, in 1888, to the feasibility of opening the thorax posteriorily for the purpose of reaching the esophagus and bronchi in cases of persistent obstruction by foreign bodies, and before the labors of Potarca, Quenu, Hartman, Bryant, and Curtis showed that non-malignant involvement of the posterior mediastinum is possibly amenable to surgical treatment. The modern surgery of the mediastinum, which tends to show that the thorax can be opened in front or behind, not only for the removal of foreign bodies in the esophagus or bronchi, but for the relief of disease processes in the mediastina, warrants a hope that surgery may yet successfully intervene in cases of rupture of the esophagus.

Posterior thoracotomy, as planned by J. D. Bryant, the technique of which was presented to the American Surgical Association in 1895, while not intended for rupture of the esophagus, is perhaps the most practicable operation for rupture of this organ. An operation for the repair of the rent would, however, require a much larger flap than is recommended by Bryant. A full account of Bryant's operation is found in his "Operative Surgery,"[20] where he also gives full details of Curtis' operations.[21]

In spite of the advance made in the surgery of the chest, any operation done for the relief of a ruptured esophagus will necessarily present many complicated problems for solution. The first obstacles met are the alarming condition of the patient as the result of the initial injury and the difficulty in determining the exact location of the rent. The condition demands much precision and rapid work, both of which are almost impossible. Delays in the operation, caused by collapse of the patient; the risks of hemorrhage, which are enormous; and collapse of the lung, brought about by opening the chest, are all elements which tend to further overcome the patient. Collapse of the lung and pneumothorax when the chest is opened, which are, unfortunately, serious and dangerous elements, may possibly be prevented by operating in a room with high-air pressure.

From the difficulty in promptly closing the opening an accompanying laceration of the pleura greatly increases the danger, and the operation becomes exceedingly embarrassing, owing to the inability to scrutinize the parts, and the respiratory movements of the lungs makes stitching of the lacerated pleura a procedure of much discomfort on the part of the surgeon.

Then again, the location of the rent is a very great barrier to a successful operation. The esophagus generally terminates somewhere in the vicinity of the tenth dorsal vertebra, and the rent is almost always situated at the lower third of the tube, the very situation which would present the most difficulty in reaching the organ. Bryant calls attention to the fact that operations below the ninth dorsal vertebra are not justifiable, owing to the great dif-

ficulty and increased danger of exposing the esophagus at this situation.

I am greatly indebted to Drs. A. Vander Veer, MacDonald, and Elting for valuable literature loaned me in the preparation of this article; to Dr. E. Mac D. Stanton for a most painstaking post-mortem examination and report, and to Drs. Craig and W. F. Hale for the use of dissecting-room material—to all of whom I wish to express my sincere thanks.

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NOTE. The above is not a complete bibliography of ruptures of the esophagus, but is simply a list of works that have been particularly appealed to in the preparation of this article.

ACUTE YELLOW ATROPHY OF THE LIVER FOLLOWING ECLAMPSIA.

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AND

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THE rarity of this disease makes it extremely interesting and necessarily causes accurate knowledge to be very limited. Judging by the amount of literature on the subject, the occurrence of acute yellow atrophy is of great infrequency, for up to a very recent date not more than a dozen cases had been reported in this country, and Osler states that he has seen but two cases. It is to be presumed, however, that the disease is commoner than is thought, and it is more than probable that as more is known of it we will find a large number of cases repored.

The etiology is obsucre. and what has been written on the subject is largely speculative. The record of any case, however, adds something to our knowledge and contradicts or corroborates existing theories. I regret very much that the case here reported is not more fully recorded, but it is difficult to keep an accurate account of phenomena when working on a case of this kind outside of a well-equipped hospital and in the absence of well-trained assistants. I have endeavored to give as careful and concise account of the case as was possible under the circumstances, hoping that by adding this report to the literature already at hand something may be learned concerning this very obscure subject.

Among the predisposing causes of both eclampsia and yellow atrophy, illegitimacy and mental strain are given as being important. If this is true, the subject of this report was doomed to this end, since she was pregnant by the husband of her own sister with whom she lived and from whom she was striving to keep the knowledge of her condition.

L. J., 22 years old, unmarried, pregnant for the first time. Family history negative. Previous history without event. I had calculated her delivery to be due about June 5, 1903. On May 4 there was some edema of the ankles and lower part of the leg, but no nervous symptoms. I put her to bed, ordered milk diet and cream of tartar, and had a specimen of urine sent to my office. This was absolutely negative. On May 7 all traces of edema had disappeared and she was allowed to go about again. She remained free from trouble until May 18, at which time the nurse reported the legs again edematous; this time the swelling extended nearly to the groin and had come on during the night. I instituted the same treatment and ordered another specimen of urine.

May 19.—Urine of day before showed about 2 per cent. albumin by Esbach's test but no casts from a centrifuged specimen. No nervous symptoms except marked pain in the small of the back. Vaginal examination revealed a very soft and nearly obliterated cervix.

May 20.—Urine showed 7 per cent. albumin. At 9 A. M. there were pronounced labor pains. External os admitted two fingers. No further nervous symptoms. There was vomiting at 5 o'clock and at 8 P.M. the external os was fully dilated and membranes bulging. I ruptured the membranes, and in a few minutes the head was on the perineum. I took the pulse at this moment and found it to be 80. She was having good pains and the head was plainly visible, when she informed me that she was entirely blind, and before I could administer chloroform she was having a hard convulsion. I telephoned to Dr. Hargrave, and while we were making some necessary preparations the patient had several hard and effective pains and also another convulsion. I applied forceps and delivered. The pulse at this moment was 140.

We used hypodermics of fluid extract of veratrum viride, but the specimen in our possession was evidently a poor one, since it failed to reduce the pulse. In the meantime the patient had three convulsions in rapid succession, although we thought she was well narcotized. We then bled until the pulse was 70. Having secured in the meantime a better specimen of veratrum viride, we brought the pulse to 60 and kept it there by the administration of the drug at intervals of about four hours. Ten grains of jalap was then administered, and in due time profuse purging resulted.

May 21.—Urine contained 2 per cent. albumin. The total quantity of urine had increased markedly, although it could not be measured because much of it was passed involuntarily. In the afternoon the temperature rose to 103°, but fell to normal within an hour. From this time on the patient's condition

improved steadily, the blindness clearing gradually, and the mental condition clearing up until the following night, when she had a convulsion at 8 P.M. Dr. Hargrave and I then called in Dr. Grandy, and it was decided to stop the veratrum, which we were administering in 5 minim doses at intervals of four hours, for we thought this convulsion might possibly have been due to its toxic effect on the kidney. I ordered bromide of sodium in doses of 40 grains given every four hours through the night. She spent a comfortable and uneventful night. In the morning (May 23) the urine contained 1½ per cent. albumin and gave a strong reaction to the bile test. No leucin or tyrosin could be discovered. She was markedly jaundiced at this time. I suspected yellow atrophy and stopped all medication. During the day her condition grew steadily worse, vomiting and purging alternately. Ecchymotic spots appeared on the skin and by night she was delirious, tossing about the bed. Pulse, 120; temperature, 100°. This delirium continued until morning, when she quieted down, and about the middle of the day coma set in. Respiration was labored; pulse weak and rapid; complexion a dark oak. A large number of ecchymotic spots appeared on the skin, and for two hours prior to death there were violent passages of bloody stools. She died at 11 P. M.

Pathological Report by Dr. Grandy.—An incomplete post-mortem examination was allowed, and Dr. Royster found:

The *skin* and *sclera* deeply jaundiced, with ecchymoses in various parts of the body. The spleen was enlarged and soft. The kidneys were somewhat enlarged and pale. The *liver* was much smaller than normal, indeed not half its actual size; its capsule loose and puckered; its consistence soft, feeling much like lung tissue; its color rather a deep yellow, with occasional spots of red, while the gall-bladder was empty. A piece of liver tissue was placed in formalin and turned over to me for microscopic examination.

In places the liver cells had entirely disappeared and were replaced by a grandular detritus, containing a good amount of pigment. In other places the outlines of the cells were maintained, but their protoplasm was almost entirely replaced by what appeared to be fat droplets. In other places the liver cells appeared practically normal. The connective tissue was not increased, and the gall-passages were empty and had not proliferated. Though there was no general infiltration of round cells, there were often heaps of these in the neighborhood of the vessels. The larger part of the sections was composed of the granular detritus and the degenerated cells, described above, the latter being apparently in excess, while the well preserved liver cells did not form more than 10 per cent. of the specimen.

These findings, though very incomplete, are those of acute yellow atrophy of the liver. The clinical history at the end of the case also pointed to this disease, while the earlier symptoms were those of an ordinary case of puerperal eclampsia, which was apparently improving, before the symptoms of acute atrophy developed.

The question naturally arises as to whether we have to do in such cases with two distinct diseases, the acute atrophy following the eclampsia, just as diphtheria may follow measles, or merely with two stages of the same trouble. Recent writers seem to be coming to the latter conclusion. Thus Rolleston says, "It is not improbable that the discrete focal necrosis of the liver, seen in eclampsia, represents in a lesser degree or in an earlier stage the changes of acute yellow atrophy"; and Edgar, that eclampsia and acute atrophy may appear as two of the severer expressions of the toxemia of pregnancy. While we have every reason to agree with these two authorities, it may, nevertheless, prove interesting to compare the findings in eclampsia and acute atrophy, more especially as cases, in which both conditions are well marked, are extremely rare.

The pathological findings in cases of puerperal eclampsia, which have come to autopsy, have been far from constant. The liver shows the most constant changes, which are said by Schmorl to be characteristic. These consist of irregularly shaped reddish or whitish areas, scattered throughout the organ. Under the microscope they are recognized as areas of necrosis or degeneration, in which blood cells may or may not be present. These areas vary in size and sometimes can be discovered only with the aid of the microscope (Whitridge Williams). In acute atrophy we find similar areas, in which the liver cells have disappeared, but they are much larger than in eclampsia, and may or may not contain blood as in the latter. Then there are cells which have not been completely destroyed, and some areas of normal tissue. In these cases the normal tissue is much less than the degenerated areas, while in ordinary eclampsia it is much greater. Indeed, the difference between the lesions seems to be one of degree rather than one of kind, in spite of the marked decrease in the size of the liver in acute atrophy and its slight increase in ordinary cases of eclampsia.

The kidneys in eclampsia are almost always, though not invariably, diseased, but the changes vary greatly in degree and are mostly degenerative, as in an acute infection. Some cases seem to be due to a true nephritis, which was probably present before conception, and should therefore hardly be classed as true puerperal eclampsia. The kidneys in acute atrophy show similar degenerative changes. In both the amount of urea excreted is diminished and in both albumin and casts are usually found in the urine. In our case the kidneys were apparently on the road to recovery when the liver succumbed.

Similar changes (hemorrhages, edema, thrombosis, etc.) have been found in the brain in both eclampsia and acute atrophy, but these lesions are by no means typical of either. Jaundice and hemorrhages into various organs are typical of acute atrophy, but are said to occur only in the most serious cases of eclampsia, cases in which the two troubles are hard to distinguish.

The morbid anatomy of the two troubles is thus very similar; indeed, we can find no clear division between them, though the lesions in acute atrophy are more severe, especially in regard to the liver.

The etiology of both puerperal eclampsia and acute atrophy of the liver is obscure, but both are now generally attributed to a toxemia of uncertain origin; while pregnancy, always a predisposing cause of one, is given as one of the most common predisposing causes of the other. Thus Thierfelder found among 83 cases of acute atrophy 30 in pregnant women, while Quinke says that one-third to one-half of the women with acute atrophy are pregnant.

As just stated, eclampsia is now generally conceded to be caused by a toxemia, produced by faulty metabolism and elimination of waste products from the mother and fetus. This toxemia produces the liver and kidney changes, which, though at first sight variable, seem to be but different stages of the same trouble. During pregnancy the mother is called upon to get rid of toxic matters produced in her own body and in that of the child. The liver, which has the task of converting these bodies into less harmful substances, and the kidneys, which must excrete them, have double work thrown upon them, but as a rule they are perfectly capable of doing this

extra work. At times, however, they give way under the strain, either on account of inherent weakness, or from an increase of toxins beyond their capacity. Thus when the toxins are increased by obstinate constipation, the liver may be unequal to this unusual amount of work, and we begin to get the nervous symptoms (headache, nausea, etc.), due directly to the poisons which have leaked through the liver. In most cases, when the excess of decomposing matter has been removed by free evacuation of the bowels, the liver is again able to take care of the rest of the toxins. In a severer grade of intoxication the liver tissue is injured and its function of reducing waste nitrogenous matter to urea is interfered with, and we get a decreased formation of urea with a further increase in the blood of toxic matters, which the kidneys are called upon to eliminate. The kidneys may succeed in this, or they in turn may be injured, with a resultant further retention of toxins.

Another set of organs, the nervous system, must now be considered, for upon its irritation by the toxins depend most of the symptoms of eclampsia. If the nervous system is strong and not easily irritated, a relatively large amount of toxins may circulate in the blood without producing symptoms. Indeed, cases have been reported as dying without convulsions, in which the organs at autopsy showed lesions regarded as typical of eclampsia (Schmorl). Besides it is stated that women who do not desire children, and especially high-strung women with illegitimate children, are most prone to eclampsia, our case being one of the latter. Whether a depressed nervous condition in turn favors a toxemia with its resulting changes is hard to determine, though it is more than possible.

Acute atrophy of the liver is also generally attributed to a similar toxemia, but is not of necessity associated with pregnancy, in which it may occur either with or without eclampsia, the latter being probably dependent on the irritability of the nervous system. On the other hand, convulsions may occur in cases of acute atrophy in men.

From the foregoing comparison we see that both eclampsia and acute atrophy of the liver are due to a toxemia, which probably produces the variable symptoms and morbid changes on account of the relatively different resisting powers of the organs. Thus the eclamptic symptoms predominate, when on account of inherent weakness the nervous system is relatively most injured, while acute atrophy occurs when the liver is not strong enough to dispose of the toxins, which gardually destroy it, if the patient does not in the meantime succumb to the eclampsia. We may, therefore, divide such cases into three stages: (1) toxemia, (2) eclampsia, (3) acute atrophy of the liver, though the patient usually recovers or dies before this last stage is reached.

(1) A toxemia is always the primary condition, but it may be severe enough only to produce the early symptoms—headache, lassitude, disturbances of vision, and a diminished excretion of urine and urea, with possible edema and albuminuria. In a few cases this stage has been followed by coma and death, without convulsions, the pathological findings being the same as in eclampsia.

(2) In eclampsia (the second stage) the toxemia has become severe enough to interfere greatly with the functions of the liver and kidneys, and to produce the nervous irritation, made evident by the convulsions and coma. The severer poisoning here produces grave lesions in various organs, and often causes death.

(3) In acute atrophy of the liver the changes have progressed still further and have practically destroyed this organ. We have added to the convulsions (which, however, do not necessarily occur) a deepening coma, an increasing jaundice, vomiting, and often purgings of blood followed practically always by death. Here, as in our case, the urinary secretion may increase, but on account of the practical destruction of the liver the patient will nevertheless succumb.

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SELECTIVE ABSORPTION BY THE CELL.*

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The blood-vessels and collateral channels of the circulation carry to every part of the human body, to every cell of the countless number that make up our frame, one common nutritive fluid. From this each cell takes up that which it needs, letting the rest pass by. But what does it need? If the cell is exactly equilibrated, if it stands in need of nothing, it takes up nothing. But if any element for which the cell has use is present in it in less than normal quantity, the cell takes up enough of that element to restore physiological equilibrium.

There is a selective power displayed here, for the cells each take up substances differing according as their respective functions and constitutions differ. Accordingly we find the nerve-cell taking up phosphorus, the bone-cell lime, the muscle-cell iron, etc. One cell takes a substance for which it has need, passing by other substances which other cells need and take. Is each cell a distinct, conscious entity, and is the selection a voluntary one? Or is the whole process governed by a wonderful system of complex, interdependent automatisms? There is here an enticing field for conjecture and card-house building, unrestrained by the trammels of real knowledge—the fancy may have full sway.

The substances thus absorbed from the circulating fluids by the cells are usually denominated foods. Foods may be defined as those substances required by the cells to support their structure and sustain their function. The need may be for a molecule of fat, sugar, albumin, salt, acid, water, lime, soda, iodine, phosphorus, etc.

But the need is not necessarily for material always. It may be that there is a defect in the tonicity of the cell, and the need is supplied by a molecule of strychnine; and in that case the cell takes up the latter exactly as it did the other substances for which a need was experienced. Or, the need may be such as is met by a molecule of aconitine, or veratrine, or digitalin—the cell absorbs what will satisfy its needs as felt at the moment.

But these are medicines! I would like to have a definition of foods and one of medicines that would distinguish these. There is evidently no hard-and-fast line between them—is there any line at all? Is iron a food or a medicine? Lime? Manganese? Acetic acid? Phosphorus? Iodine? Potash?

It has been suggested that a food is a substance the need for which is constant, while a medicine is needed only occasionally to fulfil a temporary want. The writer, like some others, has a decided craving for a meal of sauerkraut about once in a winter; but would not care for it three days in succession (it is always best on the second day, you know). The man who attempts to eat a quail a day for forty days soon finds that his need for quail is only occasional, not constant. Sauerkraut and quail, therefore, are not foods, but medicines! There is no definition that establishes an essential, or other than a scholastic, difference between foods and medicines.

We have seen that each cell takes what it needs,

*Read before the Chicago Academy of Medicine, November 17, 1905.

and leaves what other cells need and take. What is there impossible, then, in supposing that when we place several medicines, apparently antagonistic in their action, together in the circulation, each cell may take the drug it requires to restore physiological equilibrium, leaving the antagonistic agent unabsorbed, for the cell that needs the latter? To deny the possibility of this would be to erect a dividing wall between foods and medicines, which we have been unable to separate.

We speak of antagonistic drugs, but in truth it is a question if there is a really and absolutely antagonistic couple in the materia medica. One drug may excite and another restrain a secretion, like the sweat; but it will be found that one stimulates the sudoriparous glands, while the other restrains the flow of blood to the skin, or acts on some other structure to check the flow.

The importance of this discussion lies in the fact that when we come to study the phenomena of disease, we find antagonistic conditions present in different parts of the body. Take, as the most apt example, the oft-quoted case of hyperemia: The presence of an oversupply of blood in the capillaries of any part signifies a loss of the normal tone of its vessels, which admits the surplus blood by distending. This constitutes a vasomotor paresis. But as there is no reason to suppose that the entire quantity of blood in the body has been increased, this oversupply here must be compensated by an undersupply elsewhere; in other words, there are other vessels not normally full, their lumen is diminished, their walls are therefore abnormally strong as compared with their contents, the balance between the centrifugal and centripetal pressures is lost; they are spastic—vasomotor spasm is present.

Strongly favoring this view is the fact that it fully and for the first time explains the good results following the application of diametrically opposite principles in the treatment of hyperemic maladies. How else can we explain the excellent results obtained in pneumonia by those who use the vasomotor constrictors, strychnine, digitalis, and ergot, in maximal dosage; and the equally favorable results reported by equally credible witnesses from veratrum, venesection, antimony, and aconite? Especially as either of these therapeutists succeeds far better than the middle course people, who do neither, but rely on rest and non-interference? According to this view the one who relaxes the spastic vessels and allows the blood to flow out of the hyperemic tract, and the one who contracts the paretic capillaries and forces the superfluous blood out, equally meet the indication and afford relief.

Burggræve went a step further, and recommended that both principles be applied at once, taking the view above suggested, that the paretic cells could take up a tonic like digitalin or strychnine, and the spastic cells a relaxant like aconitine or veratrine, at one and the same time. If this be correct, it is evident that we have here a more effective method of treating hyperemias than either principle affords as applied singly.

The *a priori* reasoning leading up to this conclusion is faultless—it remains to apply the supreme test of clinical trial. There is a mass of evidence on the affirmative side, and little if any on the negative. But it is fortunately a case in which every physician may himself be judge and jury; where no one of us need take any other man's dictum, for we may one and all put the theory to the test of practical clinical application.

Give together aconitine to relax spasm, and digitalin to contract atony; adding strychnine when the vital depression predominates, or veratrine when the excitement of the circulation and respiration passes the desirable limits and the elimination is notably defective; changing from one to the other of these adjuvants as the symptoms indicate, but clinging to the two first named. Give each to produce the desired effect, not by the rigid dosage of the books. Treat the patient, and meet the conditions presenting, instead of giving a set formula for the name of the malady.

For the convenience of those unfamiliar with the agents and methods here advised, the following suggestions are added: Of amorphous aconitine, give half a milligram every ten to sixty minutes to an adult, until the fall of the fever or of the pulse-rate or the evidences of breaking up of the fever indicate a sufficiency of the remedy; then give less frequently so as to sustain the desired effect. Of Germanic digitalin so-called—really digitalein—give a milligram every half hour till the heart is regulated, its rhythm is uniform and the hyperemic vessels are restored to normal tone, as well as may be ascertained with our present means of observation; then regulate the dosage to the needs as with aconitine.

When the evidences of vital depression are manifest, as in asthenic pneumonias, add strychnine arsenate, half a milligram, every ten to sixty minutes until the desired evidences of restored tone and reaction are manifest; then as before, regulate the succeeding doses according to the needs. When the heart is tumultuous and the eliminants are clogged, as in sthenic pneumonias especially, add to the basal aconitine and digitalin the powerful and safe veratrine, half a milligram every half to one hour—much oftener in eclampsia—until the softer pulse, or slight nausea, or laxation evidences the full desirable action; then as before, give it less frequently. It is quite possible that we one day find veratrine indicated, and the next day find depression so predominating that we change to strychnine, and next day, perhaps, go back to veratrine.

The application of such a system demands of the physician a close and discriminating study of the phenomena developing in every case. There is no prescribing *en masse*, no stretching every patient on a procrustean therapeutical bed. Is such a necessity really to be regarded as an objection?

Take the phenomena presented during a chill: The blood is forced out of the cutaneous capillaries by an intense vasomotor spasm, and collects in the internal vessels where there is a dilatation exactly compensating the peripheral contraction. We may attack this condition therapeutically at either end, by relaxants directed against the cutaneous vasomotor spasm, or by contracting agents applied to the relaxing internal vessels. But, whichever we select, why is it that the relaxants do not go to increase the internal relaxation instead of to the cutaneous spasm? Or if we use tensors, why do they not increase cutaneous vasomotor tension instead of acting on the areas of vascular relaxation? Were there no cellular selective discrimination in such cases all active therapeutic intervention in any case of disturbed circulatory equilibrium would be impossible.

What bearing would the admission of this selective action have upon the question of the status of the cell? Is the cell an independent, conscious entity, governed by its own volition, or is its function wholly directed by chemotaxis?

Let us begin with the ameba, as it is found floating free in water. Transfer it to the slide of the microscope, and we see it move, extrude its pseudopoda, etc.—an independent, complete being, its life processes and reproduction exerted by itself as a separate being and not as a part of or dependent on any other animal. There is no place at which a line can be drawn, separating these unicellular creatures governed by conscious volition from those which are

presumed to be not so governed, which dividing line is natural and evident, not arbitrary. Place beside the ameba on a microscope slide a white blood cell, and see if the two can be distinguished. What can be said of the one that cannot apply equally to the other? They are indistinguishable in every respect.

If we cannot draw our line between the ameba and the leucocyte, still less can we draw it between the latter when floating free in the water on the microscope slide and when floating in the blood serum. Change of environment does not constitute a reason for transfer from one primary class to another. For the same reason we find it difficult to make the dividing line between the leucocyte and the same cell when it has assumed a stationary position as part of an endothelial wall; nor between that and the epithelial cell; nor that and the other cells of the body.

The hypothesis of chemotaxis seems to be generally accepted as the preferable working formula for describing phenomena of cell action, but rather from an unwillingness to admit the alternative hypothesis of independent cell volition than from any special testimony in its favor. Of the two the latter seems to be at least the most convenient, since we find writers constantly employing its language in describing the conditions presenting. And this is the more significant in that the impersonation is usually done unconsciously.

In this connection permit me to quote an account given by Major Ross of a three-hour observation of a free flagellum in a blood preparation under the microscope: "At first it wriggled about so for twenty minutes that I could hardly follow it. Then it brought up against a phagocyte and remained there so long that I thought the phagocyte had seized it. Not so; it was neither killed nor sucked in, but was actively engaged in attacking the phagocyte. The flagellum kept at this for a quarter of an hour, and then wriggled away in the direction of another phagocyte. Into this second phagocyte it pushed in several places with one of its ends, and the phagocyte seemed to rear up and try in vain to get around and envelop the flagellum. At last the phagocyte seemed to give up the struggle and flattened itself against an air bubble, the flagellum still attacking it. After fifty minutes and when the flagellum seemed to be getting exhausted, a very curious thing happened. A third phagocyte approached, coming rapidly across the field, but it had no sooner got near than the flagellum left its fallen foe and attacked the new one, holding on to it like a snake on a dog. In one minute the third phagocyte turned sharply around and made off; it went across a whole field, the flagellum holding on to it. This continued for five minutes, after which the flagellum left the phagocyte. By this time the flagellum had become more visible, its movements became gradually slower until, at the end of three hours, it finally curled up and ceased to move."

A Special Form of Adenitis in Appendicitis.—N. Berardinone describes a mono-glandular adenitis in the inguinal regio, above Poupart's ligament and near the external abdominal ring as characteristic of appendicitis. This is not to be confounded with the internal adenitis in the meso-appendix, ileocecal angle, and along the mesentery. Out of six cases observed by him this form of adenitis was present in five, all moles. It is to be felt on the second day of the disease and increases rapidly in size, being about the size of a small cherry. The gland gives a sensation of painful tension that is quite bearable. It is more enlarged when the glandular swelling returns. The subserous lymphatics of the cecum anastomose with the rete of the parietal peritoneum, and by this path the lymphatics of the cecum and appendix communicate with different glands. The swollen gland represents an inflammatory process of a certain amount of virulence, and is an important diagnostic sign in appendicitis.—*La Riforma Medica*

EYES AND EARS THAT MIGHT BE SAVED.

AN APPEAL TO THE GENERAL PRACTITIONER.

By SAMUEL S. WALLIAN, A.M., M.D.,

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No human calamity can exceed in gravity the loss of the two most useful and necessary of the special senses, sight and hearing. Atrophy of the optic nerve, from whatever cause, is conceded to belong to the *opprobria medicinæ*. As usually observed, it is progressive and results sooner or later in total blindness. Loss of the sense of hearing is sometimes associated with it or follows in its wake. The causes of optic atrophy are varied and dissimilar. A majority of specialists and general practitioners have so often traced it to specific causes that they incline to look with suspicion on every case that presents. This opinion is unquestionably too sweeping and pessimistic. Cases arise from septicemia, from hemorrhages in the vicinity of the optic tract, from benign or malignant neoplasms, from circumscribed paralysis, and from sudden shock to the nervous system. Following some serious accident, mental explosion, or psychic shock, subjects have been known to retire with apparently unimpaired vision to awake next morning totally blind. Cerebrospinal meningitis and albuminuric retinitis are accredited as frequent causes. In many cases the cause cannot be positively or satisfactorily traced. When paralysis is the alleged cause other of the special senses are apt to be involved, as the hearing, taste, or smell, one or all of them.

Arising from such a variety of causes it is not surprising that no two cases are found to exactly correspond in their characteristics. Sometimes but one eye is at first affected, although its fellow is almost certain to share in the degenerate process without much delay. In a majority of cases the two eyes are not equally or simultaneously involved. One observer asserts that the left eye is more frequently the more seriously affected and first to fail.

The prime object of this paper is to make an earnest appeal to the general practitioner to make a renewed and much more thorough study of these unfortunate and distressing cases, which are apparently becoming more and more frequent in every community, with a view to saving thousands of pairs of eyes—often pathetic and unquestionably innocent eyes—and other thousands of ears, that are now permitted to drift slowly into the realms of hopeless night and perpetual silence.

These cases have been universally looked upon as belonging to the oculist, aurist, or neurologist. If considered in the light of the pathological conditions existing they rationally come within the purview of the general practitioner. Lest this claim may seem presumptuous, what are the pathological disturbances involved?

Whatever the primary cause of atrophy of the optic or any other nerve, the essential resultant of that cause is starvation of the nerve. This may arise from any accident or process that causes pressure upon the nerve or upon the circulatory vessels supplying it with nutrition. Nerve-degeneration may result from a general depravation or "run-down" condition of the system, but this is rarely the cause of either blindness or deafness. The more usual causes are exudations of plastic material, hemorrhages, or morbid growths, following inflammatory action in the vicinity of the nerve. When the circulation of any organ or part is either impeded or cut off the part fails of its normal supply of nourishment, and atrophy is the inevitable result.

Of all the nerves of the body the optic nerve is

perhaps one of the most peculiar and unique. Its immediate origin is the optic commissure, in which body the nerves of each side partially decussate, their remote origin being in the optic tract, the fibers of which latter are chiefly derived from the optic thalamus.

The optic nerve is second in the order of its exit from the cranium, and second also in the list of nerves of special sense. It receives some fibers from both the tuber cinerium and the lamina cineria. Its blood supply is derived from the internal carotid, through the ophthalmic artery, which latter is quite tortuous, giving off numerous small branches which are even more devious and indirect in their course. This tortuosity, coupled with the small caliber of these vessels, may be a principal reason why a very small tumor or slight exudation in this locality presses disastrously upon the nerve and interrupts its nutrition. This condition, if not quickly relieved, eventuates in progressive atrophy of the nerve, as already stated. The condition is often described as paralysis of the nerve, but as the paralysis is the result of the pressure it is obvious that the latter is the underlying cause of both paralysis and atrophy.

As a matter of course the oculists and specialists take cognizance of the causative factors and make strenuous efforts to bring about resorption of effused products or abnormal growths, for the most part by heroic doses or persistent use of mercury and the iodides; but if any considerable number of cures have ever been accomplished by this method they certainly are not recorded. Nevertheless most practitioners feel in duty bound to follow precedent and prescribe this treatment as a forlorn hope, and as the only resource thoroughly endorsed by theory and tradition. When at last this treatment has proved utterly futile and the stomach resolutely rebels against any more of the remedy, it has latterly become the fashion to prescribe even more heroic and gradually increasing doses of strychnine, in the vague and hesitant hope that the special nerve or nerves involved may at least partially and temporarily respond to this powerful and more or less dangerous nerve prod. Although some patients have persuaded themselves that the use of this drug, pushed to the extreme limit of tolerance, has for a time enabled them to "hold their own," if there is an undoubted case on record of actual cure of either blindness or deafness from the use of strychnine, pushed even to the dosage of one grain per diem, I have failed to find it.

To make good the argument that patients suffering from atrophy of the optic nerve or loss of the special senses should be referred to the general practitioner, competent testimony is found in the fact that these subjects are, with few exceptions, the victims of some form of dyscrasia. This may be from accident, from constitutional or specific infection, or from one or more bad hygienic habits. A majority of them are badly nourished. This does not imply that they are underfed,—more of them are overfed, and as a rule all of them are injudiciously fed. As a result they are in a state of morbid metabolism. For this reason the general practitioner is the man who is most thoroughly prepared to take these cases under his immediate observation. It is he who can temporarily ignore the local trouble and investigate the general and special condition of his patient's entire organism. He will begin by peremptorily interdicting all further use of mydriatics, since patients suffering from progressive atrophy of the optic nerve invariably insist that each successive induction of mydriasis aggravates the trouble and causes further and more rapid loss of vision. Having accepted the diagnosis of atrophy, further use of the ophthalmoscope can do no more than to satisfy a very natural curiosity to watch the progress of the case by means of periodic inspections. The oculist may impatiently flout the idea of doing any harm in this way, but the general practitioner will insist upon his injunction as a matter of possible prophylaxis. The next step will be to inquire into the hygienic habits of omission and commission on the part of his subject. A majority will be found to be bad feeders, consuming too much starch and too little refuse, too much nitrogenous food and too little oxygen. A rigidly correct dietary will restore a condition of normal instead of the morbid metabolism that has become a habit. Instead of permitting foods that clog the system without thoroughly nourishing it, that overtax the various emunctories and eliminative organs, thereby inducing the deposition of unused material, and fostering the formation of adventitious tissue in various parts of the organism, this latter tendency must be strenuously and persistently combated. This makes the question of diet fundamental to all other measures, and any merely perfunctory or compromising adjustment of it will seriously interfere with all other curative efforts. In many cases it will be found that the food ingested can be decidedly diminished in quantity at the same time that its quality and therefore its sustaining energy is actually increased. To this end the proteid element must be definitely adjusted. In other words it must be supplied in sufficient proportion adequately to meet the actual needs of the organism without contributing a single calorie in excess of such current needs. In plethoric subjects, on the contrary, it will be quite necessary to reduce it temporarily below the normal quota, in order to favor absorption of the adventitious products of former excessive indulgence. The diet must be further restricted in the matter of starches, sweets, and concentrated foods. The modern tendency is toward an excessive consumption of carbohydrates. In fact this tendency has become so universally established as a national habit that the "prepared" and "predigested" food venders are no longer content to cater to invalids who have lost the power to prepare and digest their own food, but are loudly advocating their multinomial products, of which nonproteid starch is the invariable basis for general consumption. In the face of the only spasmodic and passive protests of the medical profession the almost universal adoption of these ready-to-eat and temptingly elegant dishes has become a menace to the future of the race. Mastication is becoming a lost art, and the race is early toothless, chiefly from disuse of the teeth. The prevailing and increasing habit of indigestion comes from the passive inertia of digestive organs that lack their normal and necessary stimulus. In fact, mastication is now accomplished by the machinery of the mills, and the balance of the digestive act is largely performed in the laboratories of the food venders. To counteract the resulting conditions the demand for salines, laxatives, and cathartics is incredibly large and steadily increasing. Aperient and cathartic spring waters and their numberless imitations and sophistications are constantly consumed, at the rate of millions of gallons daily, and the price of aloes, cascara, and the other stimulators of peristalsis is as standard as that of sugar or flour.

The dietary prescribed for these patients must be rich in phosphates and nerve-nourishing elements. But it is useless to depend upon the preparations of the hypophosphites, since the assimilation of inorganic mineral matters is inadequately if at all realized. The true and only reliable source of assimilable phosphates is to be sought in the phosphorus-bearing foods, of which two illustrative examples are entire

wheat and yolk of eggs. Other grains and many of the vegetables used as food yield appreciable quantities of iron, the phosphates, and other needed mineral elements.

Finally, the question of refuse in the food is one which is too generally overlooked by physiologists and dietists, and from mere whim and fashionable prejudice, wilfully rejected by invalids to whom it is of the utmost importance. The husk of the grains, especially that of wheat, not only contains some of the rarer and most essential nutritive properties of the grain, but also constitutes nature's normal, unobjectionable, and effective stimulus to digestion, assimilation, and peristalsis. Hence these fibrous and cellular structures contribute both directly and indirectly toward perfect nutrition of all the tissues of the body. They do this in the first place by compelling more perfect mastication of all the food ingested, secondly, by contributing the rare elements stored in them, and thirdly, by their stimulating action upon the muscular coating of the alimentary tract. The importance of these several offices can hardly be overestimated.

After having corrected as far as possible these dietetic habits of omission and commission, no measure more directly or more rationally promotes resorption of effused products in any part of the body than habitual and persistent free water-drinking,—not merely a few extra glasses, but several quarts per diem. For this purpose distilled water is greatly to be preferred, the contained mineral salts of "hard" water being decidedly objectionable. The water is to be imbibed between meals and not at table.

All these measures and precautions will be effectively seconded by a weekly or semi-weekly resort to the Turkish bath, substituting when feasible the electric cabinet for the ordinary hot room. Many modern bath establishments have installed this electric appliance, and it has marked advantages over the old hot room, where the ventilation is usually so poorly accomplished that the patient is compelled to rebreathe his own and his neighbor's emanations while taking his "sweat." In the electrical cabinet the head remains outside, and the time required to induce profuse diaphoresis is less than one-half that required in the dry air of the hot room. Much is also claimed as to the penetrating and stimulating effects of the light rays.

The foregoing outlines a hygienic background on which to erect a promising therepeutic effort. Indifference or inefficiency in regard to any one of the mentioned items will much retard or entirely negative all the other means invoked.

It is hardly necessary to state that the use of alcoholics and narcotics of every kind must be strictly prohibited.

As to drug aids in the promotion of absorption, the pharmacopeia offers little that is reliable. In persons of full habit, brisk purgation, at the outset, may sometimes seem desirable. The iodides hold out most promise, yet their internal exhibition is generally disappointing. External applications and cataphoresis may be employed with more assurance. The latter must be used with the utmost circumspection, and by means of reliable and accurately controllable apparatus. A hygroscopic cataplasm composed of a suitable earth-base, made plastic with glycerin, and containing five or ten per cent. of iodide of ammonium, applied to the temples and repeated every night, is probably one of the best external auxiliaries.

Thus far the onus of effort has been toward influencing resolution of recent or old adhesions or semiorganized exudations of plastic material. If this effort is attended with some degree of success it then remains to rouse the dormant, debilitated, and shrunken nerve to its proper function. With the improved means now at the command of the general practioner, this is not a hopeless undertaking. The two active measures available are the high-frequency current, properly modified and adapted, as illustrated in the violet ray and the D'Arsonval modality, and mechanical vibration. Great progress has been made in the matter of improved appliances for exhibiting these rational and physiological agencies for the restoration of disordered, debilitated, or obstructed functions. One of the latest applicators is called an autocondenser. It consists of a hinged and interarmored chair attachment, by means of which the spinal region, and through it the entire system, is quietly suffused with the D'Arsonval high-frequency current. It is an efficient stimulator of the sympathetic system and corrector of the general metabolism of the body, and is being used with marked success in various degenerative conditions, especially in the more serious forms of anemia, and even in diabetes. Its forte seems to be to arouse the hematopoietic function to a high degree of efficiency. To do this it must necessarily agument secretion, assimilation, absorption, and elimination, since all these processes are inter-related and interdependent. It thus promotes both constructive and destructive metamorphosis, which is the paramount object in all our battles with chronic disease of whatever nature. All morbid growths, adhesions, infiltrations, and semiorganized exudates consist of dengenerate tissue, and the electric modality known as the violet ray has certainly demonstrated its efficiency in breaking down morbid, adventitious, and degenerate tissue, whether classed as benign or malignant. It accomplishes this result partly by relieving the vital forces of obstructing material, through the emunctories, and partly by imparting fresh impetus and nutrition to overworked or starved nerves.

Vibratory motion as a therapeutic resource is not specially new, since it was employed a generation back, by Vigoroux, in Paris; but its earlier history has been practically forgotten, probably because the means employed in its application were so crude and inconvenient, and its original field was so very limited. It was tried merely in a few cases of functional nerve disturbances, and it was not dreamed that it could be made an effective agent in a wide variety of chronic conditions not associated with disordered nerves. It is not yet appreciated at its intrinsic value, even by many of those who are casually, carelessly, or tentatively using it. It is however, slowly establishing its claims as a strictly physiological and rational means of accomplishing results that have hitherto been out of reach or attained with great difficulty by other measures.

But the physician who invokes its aid and then uses it in a routine and perfunctory way, without knowing what physiological changes it is competent to produce, why it produces these changes, or how to apply it so as to bring about these changes, will fail in as many cases as he will succeed, and will understand neither his failures nor his successes.

In all these cases of defection of the special senses much, in fact invaluable, aid can be realized by a judicious use of mechanical vibration. In the effort to restore a more or less normal degree of function to the involved nerves no known means promises so much as this. Of all the means available this merits the name of dominant. Most of the others are either preparatory or contributory and auxiliary. Yet nothing of the slightest value is to be neglected, since it is the combination that will give success, if success is to be attained.

Based on a number of quite uniformly favorable reports from abroad and from a few observers in this country, I have recently employed radioactivity

in a limited number of cases of atrophy of the optic nerve with apparently good results. As this remedy was used with the other means mentioned it is impossible to determine what proportion of the results should be ascribed to it. It certainly merits a thorough trial in all cases of tissue degeneracy.

509 Fifth Avenue.

NAILING THE HEAD OF THE HUMERUS FOR FRACTURE OF THE SURGICAL NECK, WITH REPORT OF A CASE.

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Fracture of the surgical neck of the humerus has always been a difficult condition to treat with a favorable outcome. To those engaged in hospital practice it is a not infrequent occurrence to meet with cases of faliure of union or union with faulty position and consequent loss of function. It is true that this kind of fracture occurs without displacement, or with such as can be readily overcome by manipulation and apparatus; but, unfortunately, this is the exception, and the rule presents us with cases

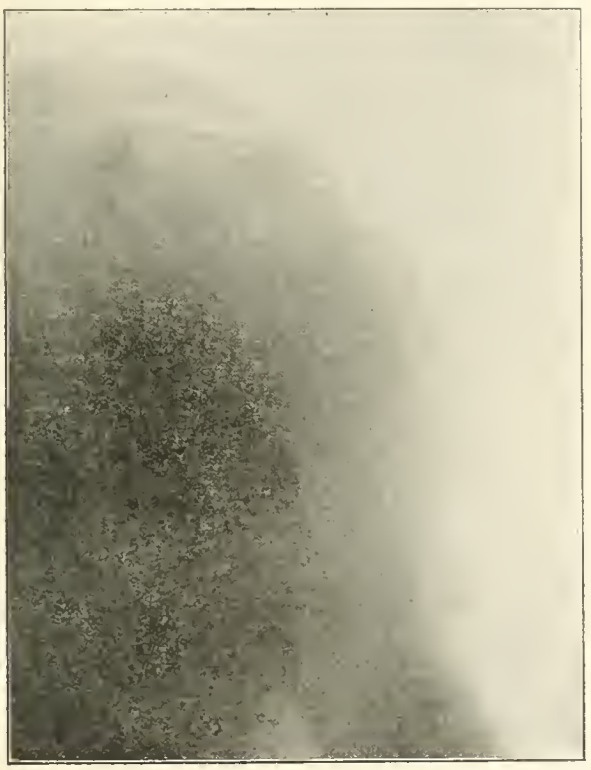

Fig. 1.

Fig. 2.

with marked displacement and one which cannot be overcome by the means mentioned.

The lesion occurs at the junction of the cancellous and spongy bone, that is, between the tuberosity and the insertion of the pectoralis major; usually as the result of violence directed toward the median line, such as a fall on the shoulder.

The lower fragment is drawn inward by the pectoralis major and latissimus dorsi, and pulled upward by the deltoid; these are powerful muscles and hold the bone quite firmly in its malposition, at times forcing it against the coracoid process. The proximity of the large vessels and nerves renders them liable to injury by the jagged edge of the shaft, so that interference with motion and sensation of the hand and forearm may occur.

The upper fragment is abducted and in the cases of marked displacement the fractured surface points directly outward at right angles to the glenoid cavity; this is due in part to contraction of the supraspinatus, infraspinatus, and teres minor muscles, and partly by pressure from below of the upper end of the lower fragment.

It is to this class of cases that the one herewith reported belongs:

J. T., age 46 years, a bookkeeper, on March 4, 1905, fell with much violence, being a large, heavy man, striking on the left shoulder. Soon after the injury the shoulder became much swollen and exceedingly tender, consequently difficult to examine. The patient came under my care two days later, through the courtesy of Dr. J. H. Guntzer. Examination showed a much swollen shoulder, with extensive ecchymosis reaching from the clavicle along the sternum to the free borders of the ribs and down to the fingers; there was tingling in the fingers in the area supplied by the median nerve. Dugas' test was negative. The elbow was abducted and could not be brought in contact with the side of the thorax. Manipulation showed that the head of the bone was in the glenoid cavity, but that it did not rotate with the shaft of the bone. The radiograph speaks for itself (Fig. 1). Crepitus was present only when pressure was made on the elbow, forcing the lower fragment against the side of the upper one.

The methods of procedure employed for the relief of this condition are many, but may be divided into those which confine the patient to bed with suitable traction apparatus, the ambulant methods, and the operative endeavor. The ambulant methods may be dismissed with the statement that they are applicable only to those cases in which correction of the displacement can be accomplished by manipulation. The recumbent position with extension is a most serviceable mode of treatment and is strongly recommended by many surgeons, but does not always overcome the deformity, and vicious union is a not infrequent outcome.

The operative treatment, at least in this case, gave an exceedingly favorable result, warranting the belief that in cases of marked displacement, not readily overcome, further trial is justified. Of course each case must be attacked on its own merits, and the degree and character of displacement should be carefully studied, to which end the radiograph is an invaluable aid.

In the case under consideration, it was quite impossible to overcome the displacement, a fact readily understood from a study of the accompanying radiograph. Operative interference was decided on, and the following procedure executed: Under chloroform narcosis, Langenbeck's anterior incision was made, the deltoid separated from the pectoralis major (avoiding the cephalac vein), and the fracture exposed. There had been much subcutaneous hemorrhage and the upper end of the lower fragment was somewhat comminuted; the loose fragments were removed. The periosteum was severely lacerated. The fragments were brought into apposition with considerable difficulty, and only by forcibly prying the lower fragment outward with the aid of a periosteal elevator. With the fragments held in place, a small skin incision was made at the outer edge of the acromion process and a four-inch steel nickel-plated nail driven through the head of the bone and onward into the shaft, thus firmly fixing the fragments in place. When the control of the periosteal elevator was removed, the displacement did not recur. About three-fourths of an inch of the nail, with its head, was permitted to protrude from the skin. Drainage at the posterior aspect of the wound was established, the rubber tube coming out behind, opposite the lower angle of the anterior incision. The anterior wound was closed in the usual manner. The usual protective dressing was supplemented by an axillary pad and a Velpeau bandage. The condition of affairs immediately after operation is well shown in Fig. 2. On the third day the drainage tube was removed and the dressing renewed. At the end of a week a plaster-of-Paris dressing was employed, into which one window was cut at the site of the incision, and a small one at the location of the entrance of the nail, through which it was readily removed four weeks later, without disturbing the plaster cast. At the end of the fifth week the cast was removed and a lighter one applied; at this time union was quite strong and ultimately was complete. The subsequent treatment consisted of passive motion and massage. The injury to the median nerve healed with no paralysis remaining. There is now (eight months later) slight limitation to the motility of the shoulder, although this is not apparent as far as the usefulness of the limb is concerned, being fully compensated for by the movements of scapula.

616 Madison Avenue.

SUTURES AND THEIR PREPARATION.*

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A PAPER on a subject such as the present one, "Sutures and Their Preparation," written by one whose time is exclusively devoted to pathology, cannot be expected to cover anything more than the results of laboratory experiments. And as such experiments are often under far different conditions from those obtaining at operation, the results must be accepted only as theoretical. In all theories the experimental results must agree with the clinical tests in order to insure validity. And so here theoretical and practical results must be equally positive and united to demonstrate the value of any method. As my experiments have been largely confined to one kind of suture material, that which I have to say will pertain particularly to that one, although probably applicable to others.

Catgut, a material made from the intestine of the sheep, is capable, when buried in living animal tissues, of soon being absorbed. As such, it has long been valued in the surgical world. A material taken from a place so notoriously rich in bacterial life as the intestine must be most carefully prepared by the most effectual methods of sterilization, prior to its insertion into the human body. Such sterilization, while most simple when dealing with instruments, rubber, silk, etc., becomes more complex when catgut is used. In the former case, the application of boiling water for a time is efficient. With catgut, however, such a method is useless, for while it certainly does kill all microorganisms, it at the same time destroys the usefulness of the material.

Many ways have been devised to obviate this difficulty. A mere rehearsal of such would be of no avail at the present time. Many have certainly been effectual, but are so expensive as to be a severe drain on the resources of even the best hospitals.

My purpose at this time is to give a few notes on the results of a very simple and inexpensive method devised by one of our colleagues. The writer lays no claim to originality in his work or its details, but has merely followed as closely as possible the directions as given by the author of the original article.

This original article, "A Method for Sterilizing Catgut," by W. F. Wesselhoeft, M.D., appeared in the medical literature of 1900. In giving a brief résumé of this, I will quote freely: "The gut is cut into the desired lengths (from 24 to 30 inches commonly). Each strand is wound about two fingers and put into a small paper envelope which is not sealed. Two of these small envelopes, each containing a strand of gut, are put into one slightly larger, two inches square, and this envelope is sealed.

"These envelopes are of strong bond paper, and in their manufacture their angles and seams are accurately closed and gummed. The outer envelope is a little more than two inches long, and is folded on itself to two inches square, thus making what is known as a safety lap closure. The envelopes, filled and sealed, are now put over a radiator or register to be thoroughly dried out. After being dried they are ready to sterilize. The sterilizer is a square brass box, tinned inside and out, with an inside measurement of 2¼ inches on a side. The cover, which is separate, is fitted with a rubber gasket, and is fastened on tight by four steel bolts and thumb-screws. The sterilizer is cast square to fit the envelopes in order to economize the alcohol.

"The envelopes containing the gut are placed in a wire basket made to fit, and so carried into the sterilizer. Absolute alcohol (99 8-10 per cent.) is now poured in up to the point which is marked by the upper end of the basket. The cover is screwed on and the sterilizer is hermetically sealed. The basket is a little less than nine-tenths the length of the sterilizer inside, and the end of the basket marks the point to which the alcohol is poured. Alcohol boils at 172° F., and when heated to 212° it expands a little less than one-tenth of its volume. The sterilizer, filled with the envelopes and with alcohol, is immersed under boiling water and left there for one hour. This raises its contents to 212° and develops a pressure of twenty-five pounds to the square inch, which must squeeze hot alcohol through every fiber of the gut.

*A paper read before the Massachusetts Surgical and Gynecological Society, June, 1905.

"The sterilizer is taken out at the end of the hour and placed in cold water for a few minutes to reduce the temperature and relieve the pressure before opening. It is then opened and the basket containing the envelopes is pulled out. The envelopes are dropped into a towel and again put to dry, which takes fifteen or twenty minutes. The gut is now ready for use. Each strand is sterile; it is in a sterile envelope which is in another envelope, and it can be kept sterile indefinitely and carried about conveniently. When desired for use, an attendant opens the outer envelope and bends back the tongue. With sterilized forceps the operator or his assistant takes out the inner envelopes, which, with the gut they contain, are absolutely sterile."

Such a process is relatively simple, and less than one-fifth the cost of the catgut as ordinarily prepared. Now comes the crucial question—is it effectual and sure? Does it certainly kill those terrible structures of which we hear so much—spores? Even granting for the moment that no experiments have been performed to determine this point, how many cases have occurred in our hospital during the last five years that have been caused by sporiferous bacteria? So far as the writer is aware, after having watched the use of catgut thus prepared in thousands of cases, not one such has occurred. The principal criticism that has been brought against this method is that it does not provide for fractional or intermittent sterilization.

Let us digress for a minute to look carefully at this question of fractional sterilization. What is it? When is it useful? When is it of no use? Certain bacteria, when subjected to unfavorable environment, possess the power of forming within their own bodies structures capable of resisting those conditions that are fatal to themselves. These structures are called spores. They have a thick, dense outer covering that enables them successfully to withstand drying, great heat, and lack of nourishment. They can even live for a few minutes in boiling water. When their surroundings become more favorable, this outer wall ruptures and a new bacillus emerges, similar in all respects to the one that formerly produced the spore. These spores are supposed to exist almost everywhere, and in laboratory media are killed in the following way: A given culture medium is subjected to moist heat at 100° C. for twenty minutes. This kills all the bacteria present, but will not positively kill all the spores. The flask is then set aside for a day in a warm place, thus giving the spores a chance to develop under favorable surroundings into mature bacteria. It is then sterilized a second time to kill those bacilli which have developed in this manner. This is again repeated the third day, so that any remaining spores may also develop and then be killed. Remember that the bacilli produce spores only when the environment is unfavorable, and these spores in turn produce bacilli only when the surroundings are favorable for their growth.

Now let us see what takes place in the fractional sterilization of catgut. It is subjected to a temperature of 100° C. for fifteen or twenty minutes, and then allowed to stand till the next day. It is claimed that the spores that may be present will produce bacilli just as they did in the culture media. But such is not the case. The sutures are either dry or they are immersed in some liquid that possesses no nutriment. Therefore conditions favorable for further development are not present and the spores retain their same condition with the same resistance. And so sterilization on the second day will be no more effectual than it was on the first, and the process may be continued indefinitely without result. Fractional sterilization, then, under these conditions is not effectual.

In comparison with this let us see what results are attained by a single long sterilization in a mild antiseptic and under pressure, according to the method above described. Many experiments have been made during the past five years with catgut prepared in this manner. The writer has repeatedly taken from the operating table many specimens of the different sizes used, and placing the entire strand in liquid culture media watched for days for indication of bacterial life. All such efforts have been in vain—never has he been able to demonstrate that any strand was not sterile. Last winter the head nurse found some envelopes that had been sterilized eighteen months before and stored away in an obscure corner. Examination of twelve strands from these envelopes gave uniformly negative results. Eleven similar envelopes were found lying in a drawer of the pathological laboratory with some rubbish, having been placed there more than a year previous, and often pushed about. Even in this case, seven of the eleven strands were sterile.

The latest series of experiments has been made with the intention of demonstrating that the process does certainly kill different microorganisms and spores. With this aim in view, a number of strands of catgut that had been lying loose in the laboratory for months were allowed to remain for twenty-four hours in a bouillon culture of *Staphylococcus pyogenes aureus*. Others were placed in a similar culture of *Bacillus typhosus*, and still others in cultures containing different varieties of spore-forming bacilli. They were then removed from the medium and allowed to dry partially. After being placed in the double envelopes as already described, they were sterilized according to directions, removed, dried, and placed in sterile culture media. The medium is still as clear as it was prior to the entrance of the strands, and no bacterial life can be found. In other words, we have a demonstration that this method does kill spores. And as spores are the most resistant forms of microorganisms, we may safely conclude that it will also kill all forms of bacteria with which we are acquainted.

RADIUM, ITS KNOWN MEDICAL VALUE.

By MYRON METZENBAUM, B.S., M.D.,

CLEVELAND, O.

From a careful and complete résumé of the medical literature regarding the use and value of radium, and from a fairly large personal clinical experience covering a period of nearly two years, the following inferences can be drawn:

1. That lupus responds promptly to the action of radium and that this result is obtained as readily as with the Finsen light or the *x*-rays, and that these results seem permanent.

2. That small epitheliomata, without glandular involvement, heal rapidly under the action of the radium rays.

The epitheliomata may be situated on the face, within the nasal cavity, mouth, pharynx, larynx, vagina, rectum, or bladder, provided the tubes of radium can be brought into intimate contact or close proximity to the diseased area.

Large epitheliomatous areas of the mucous membranes may not be influenced to any marked degree, probably because in large areas the disease is not only superficial but the deeper tissues are involved as well. Epitheliomata on the skin respond far more readily than those of the mucous membranes; this is probably because the skin is kept dry and is not irri-

tated by moisture or friction of the parts. The healing of epithelioma under the action of the radium rays seems to be permanent.

3. The rodent ulcers about the face and head respond better to the action of radium than to any known agent excepting the *x*-rays, and the results are better than those usually obtained by surgical interference.

4. Deep-seated, malignant growths seem beyond the influence of the radium rays, and even when an incision is made into the growth and the tube of radium is inserted into its interior there is then only a histological change in that part of the growth surrounding the tube of radium, as is demonstrated by a microscopical study of the tissue. Even if the radium rays exerted any beneficial influence on truly malignant, deep-seated growths, the fact could not be used to any great advantage in these cases, for the local action would be so pronounced as to cause an ulceration of the skin before it could influence the growth beneath.

5. In certain cases of total blindness, possibly where some of the fibers of the optic nerve still remain intact, a sensation of light may be noted when a tube of radium of high activity is placed in front of the eye or against the temporal region. But thus far radium has given no beneficial results in the treatment of blindness.

6. When tubes of radium are applied to old scars resulting from healed lupoid ulcers, it causes them to lose their rough and fibrous appearance and renders the area quite smooth and pliable, so it resembles more nearly the healthy tissue.

7. Radium cannot be used like the *x*-ray to obtain skiagraphs, for it requires at least twelve hours' exposure before the rays penetrate the hand, and then there is not as sharp a differentiation between the tissue as is shown by the *x*-rays. Again, from such a long time exposure the skin would be so irritated as to cause it to ulcerate.

8. The beneficial results obtained from radium have been equally good when using tubes of low activity, costing but a few dollars, as when using tubes of very high activity, costing several hundred dollars.

9. Up to the present time, radium is to be classed with the Finsen light, *x*-rays, and surgery, in the treatment of lupus, and with surgery and the *x*-rays in the treatment of rodent ulcer and small epitheliomata.

1220 Wilson Avenue.

The Rôle of Forests and of the Constitution of the Soil in the Development of Disease in France.—René de Gaulejac has made very interesting studies in relation to the effect of forests and the constitution of the soil on the development of bacteria. His attention was called to the subject by the fact that deaths by tuberculosis in the various parts of France were only incompletely explained by the rôle of altitude and climate, as well as by the influence of alcoholism or by crowded populations in the cities. He concludes that the existence of forests is an active element in keeping down bacteria. The qualities of the air of the forests, the functional properties of the trees, and the natural lives led by those sojourning in the woods explain the greater resistance of their organisms to bacillary infection. Our knowledge of the beneficent effect of forests offers an indication for the location of sanatoria in woods of pine trees and fir trees especially. The Swiss have already taken advantage of this knowledge. The rôle played by the soil has less to do with the curative treatment than with the relative resistance which it confers on the organisms living on it. Its beneficent effects depend upon its constitution, upon vegetation which it produces, and upon the water coming from it which is more or less charged with salts useful for the nutrition of human beings.—*La Presse Médicale.*

Nystagmus in Children.—Sydney Stephenson discusses three causes of nystagmus which he declares are collectively commoner in children than all the other causes put together. These are, gyrospasm, partial albinism, and post-meningitic or hydrocephalic influences. The recent onset of the affection which is often unilateral, the peculiarities of the nystagmus—a quivering, rolling, twitching, or "twittering" movement of the eyes—and the age of the child, generally from six to eighteen months, should suggest that this is an instance of "gyrospasm," "head nodding," "spasmus nutans." These children show signs of rickets. These cases are commoner in winter than in other seasons of the year. This fact is considered to be in some way connected with the absence of sunshine. It is doubtful what relation exists between this disease and dentition. These children are often intelligent beyond the average and very good tempered. Sudden noise is apt to startle them. Temporary lapses into unconsciousness may be present. The affection may be present in the other children of the family. The disease always gets well after a few months, with or without treatment. Antipyrin in one-grain doses, two to four times a day, is the best drug to give. Bromides have also been recommended. The writer next calls attention to the light hair and eyelashes, the glowing pupils, the pink iris, the nystagmus, the photophobia, the defective sight of the typical albino. He has recently observed an interesting group of cases in which imperfect sight and nystagmus coincide with much slighter signs of albinism. This condition is apt to run in families and is apt to affect the males. The tendency is transmitted by the females. The essential nature of this condition is often overlooked or misinterpreted. The last type, that of post-meningitic and hydrocephalic nystagmus, offers no special peculiarities. Its nature can usually be recognized from the history of the case.—*The British Journal of Children's Diseases.*

Subacute Cerebral Rheumatism.—Gandy and Bornait-Legueule report an interesting case of this kind. The patient, a young man 21 years old, showed on the ninth day of a third attack of rheumatism of the ordinary acute course, cerebral complications of a delirious nature. Death occurred at the end of eleven hours. At the autopsy many lesions of the serous membranes were found; mitral endocarditis, aortic and tricuspid, adhesive pericarditis, double pleuritis, common congestive lesions of the liver and kidneys, and congestion and bloody suffusion of the cerebral meninges. It is well known that cerebral lesions appear in the serious forms of this disease with multiple visceral localizations. This proved true in the present case, but the reasons generally given for the appearance of cerebral rheumatism—renal and hepatic insufficiency—could not be ascribed as the cause of the cerebral troubles in this case. There was no lesion of these organs sufficient to account for the cerebral disturbances. It seems probable that the renal congestion and cerebral disorders were to be traced to a common cause.—*Journal des Praticiens.*

Pyelonephritis in Pregnancy.—According to Gaussel-Ziegelmann, the prophylaxis of pyelonephritis in pregnancy consists in careful attention to the digestive system, the prevention of constipation, and the avoidance of causes which exaggerate renal susceptibility, such as cold, overfeeding, and so on. If the trouble once declares itself, however, the absolute milk régime should not be prescribed. This is necessary in the acute period, but after that the lacto-vegetarian régime should be instituted, at least when the condition of the kidney is not actually compromised. Rest in bed is indispensable. The use of drugs in this trouble relates to the digestive system and to the urinary system. Purgatives are indicated at first. Antiseptics are used also. Surgical intervention may be indicated in cases in which the life of the patient is in danger.—*Revue Française de Médecine et de Chirurgie.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN. A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, January 6, 1906.

A DEFENSE OF THE PARASITIC THEORY OF CANCER.

"CARCINOMA is a parasitic disease," was the bold and somewhat dogmatic statement adopted by Mr. H. T. Butlin as the title of his Bradshaw Lecture at the Royal College of Surgeons in London on December 13. He began with a confession of grave disappointment that the Director of the Imperial Cancer Research Fund should have been justified in saying, in his report, that "the parasitic hypothesis has been subjected to severe criticism in practically every textbook of pathology," and especially that the director himself should have joined in this ruthless and almost universal condemnation. Undaunted by this weight of authority, Mr. Butlin maintained stoutly that the carcinoma cell is really an independent organism, like many a protozoan; lives a life wholly independent and proper to itself; lives, too, as a parasite in the body of the animal affected, deriving its nourishment from its host, and doing nothing to repay him for the sustenance of which it robs him. Of the influence of soil and climate he said that one cannot at present say much; the age-incidence is now in the ascendant.

The requirements to be satisfied to show the cell to be an independent organism were given by Mr. Butlin as follows: (1) It should present the same or similar characters in every part of the host in which it is present; (2) it should be transmissible from one part to another part of the same host; (3) it should be transmissible from one host to another under certain conditions; and (4) it should be capable of living outside the body of the host. The first and second of these conditions are fulfilled regularly and frequently. The third condition—transmissibility from one host to another—involves the question of the infective nature of the disease. Mr. Butlin preferred the term communicable to infectious or contagious; for, while contact with a sufferer or breathing the same air might not result in transmission of the disease, the speaker held that there remained no possible doubt that cancer is communicable.

Three points, namely (*a*) the character of the cell, (*b*) the structure of the tumor, and (*c*) the age-incidence, make it difficult to conceive of a parasite introduced from without. It has, in fact, been suggested that the parasite is actually formed within the body of the host, being developed in some way from his elements. But that, Mr. Butlin justly said, seemed to him an astounding proposition, for in plain terms it meant the origin of a new species of the lowest form of animal life—a mode of origin altogether different from anything we have been accustomed to accept. Assuming the existence of a special cancer protozoan cell, we have not yet discovered its life history outside the body. To this end numerous experiments are needed to induce the parasite to thrive under artificial conditions which would permit the study of every phase of its history. We have learned, Mr. Butlin hazarded, that it can live. To find out if it can also thrive and propagate outside the body, experiments under all sorts of conditions must be made on various animals—not only on mice.

The Imperial Research Fund, as well as the Research Laboratory in Buffalo, is occupied with the cancer problem, but as yet its labors have borne little or no fruit. We need further most careful study of cases of reputed contact cancer in the same individual, and also of alleged transmission from one person to another. In many of the latter reported cases the disease has not been the same in both persons. Not only so, it has not been even the same variety of carcinoma, for in certain cases, in one person it was sarcoma and in the other carcinoma. Of course, such instances cannot be accepted, but all reputed cases of contagion should be investigated. If this were done, Mr. Butlin said, he had a very strong impression that some, if only very few, cases would prove to be instances of real transmission of the disease. No circumstance, however small, should be disregarded in such investigations, and no obstacle is so great that it should not be boldly faced without prejudice.

THE CANTEEN BILL IN CONGRESS.

A BILL has been introduced into the Lower House of Congress, by Representative Morrell, to permit the restoration of the canteen feature in the post exchanges of the army. This bill is supported by all the true friends of the soldier in and out of the army, but Mr. Hull, Chairman of the House Committee on Military Affairs, is quoted as opposing any legislation of this nature during the present session. That is to say, if Mr. Hull has his way, the pimps, the rumsellers, the gamblers, and the prostitutes are to be given another year in which to prey upon the bodies and souls of the enlisted men, while the friends of the soldier, who, recognizing the futility of blue laws, would remove the temptation to degrading vice by giving opportunity for innocent recreation, are to be restrained by the firm hand of the law.

The reason alleged by Mr. Hull for inaction this year is the same as that expressed a year ago. He would wait, he says, until the present order of things has had a full trial! We wonder how long it will be before the divekeepers and their dupes and allies of the W. C. T. U. will admit that the present system has had a fair trial! If the roll of infraction of discipline, desertion, insanity, and death, directly traceable to the abolition of the canteen, is not sufficiently large in five years, will it be any more convincing to the illogical ladies who have so long terrorized Congress, in ten years—or fifteen?

A recent dispatch to the *New York Times* from Chicago gives some details of a grand jury investigation of saloon dives, gambling resorts, and other

disorderly places in the town of Highwood, near Fort Sheridan. The evidence introduced by Capt. M. E. Saville and other officers of the fort alleged the following state of affairs existing as a direct result of the abolition of the canteen: "Twenty-five violent deaths in eighteen months as a result of soldiers frequenting the dives. Carloads of uniforms and other equipment stolen from the fort by soldiers and sold to divekeepers for liquor. Connivance at the desertion of soldiers by divekeepers. Every saloon, with one exception, is a gambling house, and all the games are 'crooked.'" It was also alleged before the jury that certain politicians and several wealthy individuals are in a ring to prevent the Government from interfering with the "prosperity" of the village. These ringsters have also the powerful support of the Woman's Christian Temperance Union. Against this array of facts the opponents of the canteen have never, so far as we have been able to learn, offered anything tangible in proof of the alleged evils of selling beer in the post exchanges. Their arguments are based on pure assumption. It is a sin to drink beer, *ergo,* the sale of beer and light wines, even under strict limitation as to quantity, is an offense against morality. Let the men drink all the whiskey they will, while on leave, but to remove the temptation to drunkenness by sanctioning moderate indulgence on the Government reservation—never! Occasionally, it is true, a rara avis is found, even in the army, who sings a weak denial, in the face of the adverse testimony of an overwhelming majority of the officers and men, that drunkenness is any more common among the enlisted men to-day than it was in the canteen times. But such piping sounds faint through the virile roar of those who know the truth and speak it.

The real difficulty in the way of restoring the canteen at this session of Congress, according to the Washington correspondents of the *Globe* and other newspapers, is the fact that members of the House who want to succeed themselves must secure renomination and reelection within less than a year. Few of the Representatives have the courage to inject deliberately the temperance question into their campaigns. In many parts of the country a vote for the canteen by a member of the House would be the signal for a war upon him by the whiskey men and the W. C. T. U., and many a seat would be lost in consequence. Hence the reluctance shown in taking up the canteen question again.

The Association of Military Surgeons of the Unied States has memoralized Congress in favor of Mr. Morrell's bill, and the same also has the support of all the officers of the army, including the generals commanding the various departments and the chaplains, and all others, in and out of the service, who are in position to see the fearful evils entailed by the present system. The members of the House freely admit in private conversation the validity of the arguments in favor of the canteen, and we cannot but think that there will be found a sufficient number of them, guided by conscience and with the courage of their convictions, to repeal the iniquitous anti-canteen law and restore to the enlisted man the protection against vice and the miseries which indulgence in it entails, of the beneficent post exchange with the harmless canteen feature restored. Surely common sense and morality must finally prevail against blind fanaticism and the crafty play upon it of the rumsellers and divekeepers.

THE ORIGIN OF SLEEP.

That state of more or less complete physiological unconsciousness which we call sleep has formed the subject of a multitude of investigations, and numerous hypotheses have been advanced to account for the phenomenon. Among the more important theories advanced within recent years we find that in one the production of sleep is believed to depend on the accumulation of acid waste products in the blood which results in a depression of the activity of the brain cells. Another theory is based on the so-called neuron doctrine, according to which the contact between the terminal arborizations of the afferent nerve fibers and the dendrites of the cortical cells is broken by contractions of the latter, as the result of which the brain cells are cut off from external stimuli. In a third we find that sleep is attributed to a temporary anemia of the brain which depends on certain vasomotor changes, by which the greater volume of blood is shifted from this organ to the cutaneous or the visceral circulation.

The theories mentioned do not by any means include all those which have been proposed to explain the occurrence of sleep, and we may expect a number of others before the problem is solved. In a communication to the recent Italian Medical Congress, held at Genoa in October, Dr. Alberto Salmon advances the suggestion that sleep is due to the effects of an internal physiological secretion which is derived from the pituitary body. He believes that some of the hypnotic properties exerted by this structure may be due to the presence in its substance of bromine, as demonstrated by Paderi, and he considers that his hypothesis is strengthened by the fact that the administration of the glandular extract from the pituitary body is useful in insomnia. Attention is called to the fact that somnolence is associated with certain lesions of the pituitary body, among which have been noted tumors, the functional hyperactivity during the early stages of acromegaly, the hypertrophy which accompanies myxedema and sleeping sickness, and the inflammatory congestion of a slowly evolving meningoencephalitis. A similar condition of somnolence has also been noted in certain cases of acute poisoning where the secretions are all increased, as by pilocarpine, in the chronic autointoxication of hepatic or gastrointestinal origin (in which pituitary hypersecretion has been experimentally demonstrated), and in any diseased condition capable of inducing hyperemia of the pituitary body. On the other hand, according to Salmon, insomnia is met with in patients with tumors of the pituitary body which are characterized by destructive or degenerative changes, in metastatic malignant growths, in abscesses of the gland in question, in Graves's disease, in inanition or old age, in cases of poisoning marked by inhibition of the secretion, such as by atropine, etc.

Whether this small and comparatively little known structure really presides over such an important physiological function, cannot, we believe, be fully decided by the data on hand. This gland, if gland it be, probably constitutes only a link in the chain of the so-called internal secretory organs, which include among others the thyroid, parathyroids, and adrenals, and whose immediate function relates more closely to metabolic processes in the organism than to any other phenomena. If disturbances of their function

are characterized by disorders of sleep, we need not look upon the latter as anything more than a result of the abnormalities in metabolism. Then again, the writer's contention does not permit of any differentiation between states of normal and states of pathological sleep, and from our present knowledge of the subject we cannot assume that the one is merely an exaggerated or abnormal expression of the other. Those theories which ascribe the phenomenon of sleep to regular vasomotor changes seem much more reasonable in their explanation and application.

THE ETIOLOGY OF SYPHILIS.

On March 3, 1905, Schaudinn, a worker in the Imperial Institute of Hygiene at Berlin, discovered a spiral organism in the tissue-juice of a secondary papule, and gave it the name of *Spirochæta pallida.* An associate of Schaudinn's, a military surgeon named Hoffmann, had excised the papule, and the investigation of the organism was conducted jointly by Schaudinn and Hoffmann. The discovery of the spirochete came at a period when the search for the cause of syphilis had been given a new and hopeful aspect through the successful inoculation of the disease in monkeys by Roux and Metchnikoff, and since the publication in May, 1905, of the papers of Schaudinn and Hoffmann a large number of investigators have studied the new organism, so that to-day the literature on the subject is already quite extensive.

The etiology of syphilis has been a puzzle ever since the disease was known to humanity. That it is infectious was recognized early, and when the ideas of "animal contagion" began to come in vogue in the sixteenth century, syphilis was classed by some authors (Kircherius, Abercromby) among the ills of the flesh that are caused by this vague biological influence. After the discovery of "living animalcules," which are now recognized as bacteria, by Anthony van Leeuwenhoek in 1675, and after the publication of the doctrine of the pathogenic bacteria by Plenciz of Vienna, in 1762, the animalcule theory of syphilis became current. Thus the matter rested until 1881, when a special variety of cocci was discovered in syphilitic condelomas by Aufrecht. In 1885 came the announcement of Lustgarten's discovery of the bacillus of syphilis which now is generally regarded as identical with the smegma bacillus, and, therefore, of no etiological significance in the causation of venereal diseases. Since Lustgarten's announcement, a great number of germs and other microorganisms have been described as occurring in syphilitic lesions, and as more or less connected with the cause of the disease.

Among the organisms described spirochætæ were mentioned as early as 1857 by Donne, while Bordet and Gengow state that they had seen the spirochete three years before Schaudinn's paper appeared, but as the organism was not present in all cases, no further study was made at the time. A Russian observer, Omeltchenko, also claims to have seen the spirochetes twelve years ago in numerous specimens from syphilitic lesions, but mistook them for minute fibrils of fibroelastic tissue.

Schaudinn and Hoffmann found two varieties of spiral organism, the first of which, *Spirochæta pallida,* occurs only in syphilitic lesions and is a delicate, long, thin spiral, pointed at both ends, and markedly motile. It has numerous and regular spiral turns, and stains very faintly. The second variety, *Spirochæta refringens,* is found in decomposing secretions about the genitals, and also occurs along with the other in syphilitic lesions. It is probably saprophytic, like the smegma bacillus, and is a larger spiral with fewer turns, rather more wavy than corkscrew shape, and stains more deeply. The pallida was found in chancres, in condylomata, in inguinal glands, and in the blood from the spleen. It was absent in non-syphilitic control-material.

Since the publication of the researches of Schaudinn and Hoffmann, a number of observers have offered confirmatory evidence. Metchnikoff and Roux found the spirochete in a chancre in a monkey inoculated with syphilis. The organism has been found in congenital syphilis, and in the blood of secondary syphilis. It seems to be constantly present in primary and secondary lesions, although sometimes in such small numbers as to evade any but the most careful search. It seems, however, to be absent in tertiary lesions.

In this country, the first investigation published on this subject was, we believe, that of Dr. Fanoni. This author confirmed the results of Schaudinn and Hoffmann, and published a study of fifteen cases of syphilis. In two of these he failed to find the spirochete, but both had been under treatment for some time. In two control cases, non-syphilitic in character, this organism was absent. It was present, however, in all the primary lesions examined, and also was found in the inguinal glands, in condylomata, in mucous patches, and in the tonsils. The finding of the organism in the tonsils was especially interesting, as it was the first attempt to demonstrate the new organism in tonsillar tissue. Preliminary reports on the same subject have appeared within the past few weeks in various American medical journals, indicating that a number of other observers are now working in the same direction. In the Wesley M. Carpenter lecture recently delivered at the Academy of Medicine (Medical Record, November 11, 1905), in which a résumé of the entire subject was given, Dr. Simon Flexner stated that the Rockefeller Institute is now conducting an extensive investigation on the same theme. Dr. Flexner concludes, from a study of a number of cases in which the spirochete was found, that while we are as yet not justified in declaring that the organism is pathogenic for syphilis, the investigations thus far published certainly encourage the hope that we are at last upon the right track. However, so many other organisms have been described as causes for syphilis in the past that it behooves us to be conservative. The medical world will watch with interest the investigations now in progress, but for the present the verdict cannot be rendered.

Fighting the Noise Evil.

Urban life has its discomforts as well as its pleasures, and those who would have the latter must put up, as patiently as may be, with such of the former as are unavoidable. But this does not mean that what can be cured must be endured—quite the contrary, for the nuisance makers are so callous to the misery they cause that unceasing vigilance is needed to curb their persistence. Among the greatest of the inflictions of city life are the noises, some of

which are unavoidable; many, however, can be reduced or silenced altogether. The reason why they are allowed to continue is that the maker of illegal noises never voluntarily abates his own nuisance and yields only to compulsion of the most emphatic sort. This compulsion comes as a rule only when the public conscience is aroused. But the awakening of the public conscience is no easy matter, and one who would attempt it must be endowed with energy and perseverance of no mean order. The truth of this is shown in the crusade, initiated by Mrs. Isaac L. Rice, against the unnecessary whistling of tugboats navigating the rivers which encircle Manhattan Island. For years this whistling has been kept up with supreme disregard of the rights of citizens, and until this lady took the matter up and organized a public protest against the practice there seemed to be no possible chance for relief. The nuisance has not been stopped and we are not sure that it ever will be, but if untiring energy can win a battle this one will some day be won. Mrs. Rice has collected a mass of most convincing evidence regarding the needlessness of much of this noise, the extent of the evil, and the injury which it works to the health and comfort of a large number of our citizens who live along the water front. Some of the greatest sufferers are the inmates of the public hospitals and other city institutions located near one or the other river or on the islands. The superintendents and other officials of hospitals and asylums, having an aggregate of about 12,500 inmates, have certified to the fact of this nuisance and the injurious effect of the noise upon the health of the patients. The magnitude of the evil is shown by a count which was made during the night of December 22-23. On that night, with perfectly clear sky, a watcher, stationed near 89th street on the Riverside Drive, counted 3,119 blasts by tugboats and other steamers between the hours of 10 P.M. and 7 A.M. The unnecessary nature of the nuisance is shown by statements of scow captains, dock watchmen, and others who testify that the whistles are not blown for the most part as signals to passing steamers for right of way, but to wake up watchmen on the piers, to signal to scow captains in the tow, to call deckhands from saloons in the neighborhood, and so on. One great obstacle in the way of the suppression of this evil is that the municipal authorities have no jurisdiction over the tug captains, the navigable waters encircling the city being under the control of the Federal Government. Washington is out of earshot of the whistles, the Health Commissioner of New York is without authority to cause the arrest of the culprits, and consequently the tugboat captains are indifferent to the complaints of the sufferers from their insolent noises. No argument is needed to prove that sleep-disturbing noises are prejudicial to the health of the well and productive of serious injury to the weakened nervous constitution of the sick and convalescent. Mrs. Rice is doing a good work, and if she meets with the success which her public-spirited crusades deserves, she will receive the thanks not only of those whose slumbers are disturbed by the screeches of the steam whistles, but also of the twelve thousand sick in the public institutions whose restoration to health is imperiled by these unnecessary noises. It is possible also that the efforts of this energetic lady may have even more far-reaching and beneficent consequences. If the tooting tugboat captains are compelled to moderation, sufferers from other city noises may be encouraged to protest and to act, and perhaps some day even the "flat" wheels of the trolley-cars may cease to pound.

The Evil Eye.

Crimes committed by the Italians in our country are often so cruel in the manner of their commission and so unaccountable in purpose that many people have assumed that there lurks in the Italian breast a thirst for blood and a mania for the taking of life. On the contrary, the Italians, as a race, are happy, kind-hearted, and intensely religious, although they do not hold life as sacred as do other nationalities. In some instances the taking of a life is regarded by the superstitious among the lower classes as a philanthropic duty. This fact was elicited recently in the investigation of a murder by the coroner of San Francisco, more especially from the testimony of an Italian physician of prominence in the city. A man was suspected of having taken the life of his sister-in-law, but apparently there had been no motive for the crime. The physician explained, however, that there is, among the poorer class of his people, almost universally a superstition known as the evil eye. The possessor of this peculiar organ is believed to have the power to inflict an endless succession of misfortunes upon his associates in a manner far more subtle than can be attributed to mere hypnotism. Hence, when misfortunes begin their multiple march through the Italian household, each recurrence becomes an added evidence of the ocular witchcraft. Resort is had to penance and prayer, and the testimony in the present case showed that hundreds pray daily in the churches of the Italian quarter of San Francisco for deliverance from the evil eye. The murderer had become practically a religious monomaniac, and after three years of devout and persistent, but unanswered prayer, he had finally decided, as a matter of duty, to put an end to the misfortunes of his family by murdering the possessor of the malicious eye; for it had been decided long before by himself and his wife that the source of their distress rested in the orbit of the sister-in-law. The plea of insanity will, no doubt, be entered for the accused, but more important than the decision of this case will be the effect of the revelation upon those who have long been in a position to enlighten the minds of these simple people but have neglected to do so.

News of the Week.

Popular Lecture at the Academy of Medicine.—Health Commissioner Darlington's popular lecture on cerebrospinal meningitis and pneumonia, delivered at the Academy of Medicine on December 29, was well attended. In speaking of the former disease he stated that the mortality in the epidemic of last winter was 91 per cent., and there were 344 deaths out of the 365 cases reported. He said that a fair conclusion was that the recent apparent increase of pneumonia had been mainly due to the transfer of part of the bronchitis mortality record to the pneumonia record, either as a matter of classification by registrars or of diagnosis by physicians, or both. While the figures did not bear out the belief that pneumonia was on the increase—showing, in fact, just the contrary to be true—it was important to remember that the general death rate for all diseases had decreased by about one-fourth. The decrease, therefore, in pneumonia had not kept pace with the general improvement in the health of the inhabitants of the countries and cities for which the inspector had given figures. He rehearsed the conclusions reached by the meningitis commission and expressed an optimistic opinion regarding the prophylaxis

of the disease. Subjects proposed for other popular lectures at the Academy of Medicine are patent medicines and the New York city water supply.

Philadelphia's Paupers.—Much unfavorable newspaper comment has lately been circulated concerning the manner in which the paupers are cared for at the Philadelphia Almshouse and Insane Pavillion, known locally as Blockley. The sanitary conditions throughout the buildings are said to be bad, and there is apparently great inadequacy of supplies in all departments. For example it is alleged that there are but 300 pairs of stockings for 302 women patients, and only 269 pairs of shoes for 919 inmates who are able to go about. Other articles of apparel are provided on the same scale, so that when washing day arrives, according to the accounts in the newspapers, some of the patients have to stay in bed until their garments have been returned to them. Conditions are stated to be especially bad in the consumptive wards where the measures usually considered essential in the care of tuberculous patients cannot be carried out.

Campaign for Pure Milk.—The Chicago Woman's Club has taken the initiative in a campaign for pure milk. It is contended that the milk is not pure when it leaves the farms, owing to the unsanitary conditions of many of the country dairies. The women's clubs of Cook County have been called upon to subscribe $1500 annually to pay the salary of a competent inspector of milk.

Pennsylvania State Medical Examinations.—According to the report of the Pennsylvania State Board of Medical Examiners there were 56 failures among 460 candidates for the license to practise within the State. The candidates represented 38 colleges, including the Universities of Naples, Florence, and Turin, and the Western University of London, Ont. Four candidates were expelled for cheating.

Vermont Tuberculosis Sanatorium.—A site has been selected for the sanatorium for incipient tuberculosis to be presented to the State of Vermont by Senator Redfield Proctor. The location chosen is in the town of Pittsford about a mile and a half from the Rutland railway station. The building will be started in the spring and it is expected that it will be ready for occupancy next winter.

Boston Medical Library.—At the annual meeting of the Boston Medical Library, held on November 14, Dr. John W. Farlow was elected Librarian, to succeed the late Dr. James R. Chadwick.

Mayor McClellan's Appointments.—The following appointments, of special interest to physicians, have been made by the Mayor upon entering on his second term of office: Commissioner of Health, Dr. Thomas Darlington; Street Cleaning, Dr. John McG. Woodbury; Tenement House, Edward J. Butler; Charities, Robert W. Hebberd. Of these, all but the last are reappointments.

American Dermatological Association.—At the twenty-ninth annual meeting of this association, held in New York City, December 28, 29, and 30, 1905, the following officers were elected for the ensuing year: *President*, Dr. M. B. Hartzell of Philadelphia, Pa.; *Vice-President*, Dr. Thomas C. Gilcrist of Baltimore, Md.; *Secretary and Treasurer*, Dr. Grover W. Wende of Buffalo, N. Y. The next meeting of the association will be held in Cleveland, Ohio, in May, 1906.

A Medical Peace Society.—Under the title of the "International Medical Association to Contribute to the Suppression of War" an international congress of medical men is being organized in Paris. It is the object of the society to protest against armed conflicts, and to assist the work of settling international disputes by arbitration. It is proposed to have the date of the congress coincide with that of the Sports Exhibition to be held in Paris in 1907. The president of the association is Dr. J. Riviere, 25 Rue des Mathurins, Paris, to whom applications for membership should be sent.

Death Rate for 1905.—The New York City death rate for 1905 is next to the lowest on record, and the number of deaths from contagious diseases is the lowest yet recorded. In 1905 there were 103,852 births, against 99,555 in 1904, an increase of 4,297. There were 42,667 marriages, against 39,436 in 1904, an increase of 3,231. The deaths in 1905 were 73,450, against 78,060 in 1904, a decrease of 4,610. The death rate per 1,000 of population in 1904 was 20.01, but this year it was reduced to 18.25. The real saving of life, considering births and deaths, was 7,042.

Hospital Fires.—A fire which did $500 worth of damage recently started in the engine room of the Cumberland Street Hospital, Brooklyn, but was extinguished without alarming the patients. A more serious conflagration in a building across the street from Bellevue Hospital caused some alarm among the patients in that institution on December 29.

Post-Graduate Hospital Report.—The annual report of the New York Post-Graduate Hospital shows a deficit of $21,678.82 for last year. The hospital proper in 1905 treated 3,579 patients, of whom at least 70 per cent. were absolutely free patients. Of the others the majority contributed $10 a week for their support and treatment, which is about $8 a week less than the cost. There were 95,142 free visits by patients to the dispensary, and 21,519 patients were treated free in that place. The total number of free days of hospital care for all patients was 43,276. The hospital hopes soon to be able to cancel its entire debt.

A Case of Alleged Superfetation.—A remarkable story comes from Albany to the effect that a woman of twenty years has recently given birth to a child 116 days after having been delivered of another infant. Both children are said to be normal by the physician who conducted the second labor. The first was attended only by a midwife

Nasal Intoxication.—According to the Norwegian papers an economical method of producing alcoholic intoxication is being practised by the lowest classes of Christiania. The toper fills the palm of his hand with a very strong form of corn brandy and snuffs it up into the nose. This is repeated several times, though once is sufficient to produce complete intoxication.

Legacy to Harvard Medical School.—Harvard University will benefit to the extent of $50,000, to be applied to the needs of the Medical School, by the will of Dr. George S. Hyde. The legacy will be turned over to the college on the death of Elkin P. Hyde and Mrs. Annie M. Sargent, brother and sister, respectively.

Eastern Medical Society.—At the last regular meeting of the Eastern Medical Society, held on December 8, 1905, at the Society's rooms, Clinton Hall, 151–153 Clinton street, the following officers were elected for the year 1906: *President*, Dr. Charles Goodman; *First Vice-President*, Dr. N. M. Mandl; *Second Vice-President*, Dr. A. J. Ron-

ginsky; *Recording Secretary*, Dr. Martin Cohen; *Corresponding Secretary*, Dr. I. S. Tunick; *Treasurer*, Dr. W. M. Stark. The next regular meeting will be held on January 12, 1906.

A New Hospital in The Bronx.—The will of the late Charles T. Yerkes gives a sum, not to exceed $800,000, for the purchase of ground and the erection thereon of a hospital in the Borough of The Bronx. The will also provides for an endowment fund of about five million dollars, the income arising from which is to be used for the support and maintenance of the hospital. It is stipulated that the institution shall "be open to the public without regard to creed, race, or color, and under such directions as the Trustees or Directors of said hospital may prescribe by rules; and any patient received or admitted to said hospital whose financial means at command are not such as to enable said patient to pay for the necessary treatment and care shall be treated and cared for therein without any expense or charge whatsoever."

Blue Earth County (Minn.) Medical Society.—The annual meeting of this society was held at Mankato on December 19, and the following officers were elected: *President*, Dr. J. S. Holbrook, Mankato; *Vice-President*, Dr. John Williams, Lake Crystal; *Secretary*, Dr. A. G. Liedloff, Mankato; *Treasurer*, Dr. Lida Osborn, Mankato.

Sonoma County (Cal.) Medical Society.—At the recent meeting of this society, held in Santa Rosa, the election of officers resulted as follows: *President*, Dr. A. McG. Stuart; *Vice-President*, Dr. J. H. McLeod; *Secretary*, Dr. Elizabeth M. Yates; *Treasurer*, Dr. Lizzie Lain.

Grafton County (N. H.) Medical Society.—At the annual meeting of this society held at Woodsville, December 12, the officers elected for the coming year were: *President*, Dr. W. J. Beattie of Littleton; *Vice-President*, Dr. F. von Tobel of Lebanon; *Secretary and Treasurer*, Dr. George A. Weaver of Warren.

Maine Academy of Medicine.—The following officers were elected at the annual meeting of the Maine Academy of Medicine and Science, held in Portland on December 13: *President*, Dr. C. A. Peaslee, Bath; *Corresponding Secretary*, Dr. A. H. Little; *Statistical Secretary*, F. Y. Gilbert; *Assistant Secretary*, Dr. Gilman Davis; *Treasurer*, Dr. Bertrand G. March.

Southern California Medical Society.—At the semi-annual session of this society, held in Los Angeles on December 7, the following were elected as officers: *President*, Dr. Howell Tyler of Redlands; *Vice-Presidents*, Dr. Frank Garcelon and Dr. Roberts of Pasadena; *Secretary*, Dr. Key of Los Angeles.

Jefferson County (Ky.) Medical Society.—The following officers were elected at the recent meeting of this society in Louisville: *President*, Dr. J. J. Moren; *Vice-President*, Dr. S. J. Myers; *Treasurer*, Dr. Edward Speidel; *Secretary*, Dr. J. Hunter Peak.

Jackson County (Mich.) Medical Society.—These officers were elected at the meeting of this society, held in Jackson on December 7: *President*, Dr. A. J. Roberts; *Vice-President*, Dr. J. C. Kugler; *Treasurer* Dr. F. W. Rogers; *Secretary*, Dr. R. G. Hendrick.

Hancock County (Ohio) Medical Association.—At the meeting of this society, held in Findlay, on December 14, the following officers were elected for the ensuing year: *President*, Dr. E. G. Hersh of McComb; *Vice-President*, Dr. Treece; *Secretary*, Dr. Nelia B. Kennedy; *Treasurer*, Dr. J. P. Baker.

Huntington County (Ind.) Medical Society.—These officers were elected for the ensuing year by the society at its recent meeting in Huntington: *President*, Dr. S. V. Wilking of Roanoke; *Vice-President*, Dr. W. C. Chafee of Huntington; *Secretary* and *Treasurer*, Dr. Ervin Wright of Huntington.

Obituary Notes.—Dr. A. C. Hardin of Elkton, Ky., died on December 20 from the infirmities of old age. He was aged seventy-five years. He moved to Elkton in 1873 and practised until about fifteen years ago, when his eyesight became affected.

Dr. R. H. Tullis of Lawton, Oklahoma, died on December 14 of typhoid fever at the age of forty years. He was, at the time of his death, president of the State Medical Association of Oklahoma, vice-president of the Central Medical Association, vice-president of the Comanche County Medical Association, and a member of the City Hospital Association.

Dr. John R. Crapo of Terre Haute, Ind., died on December 18 of diabetes. Dr. Crapo had practised medicine in Terre Haute for thirty-eight years. He was born near Sullivan, October 3, 1850.

Dr. J. M. Waddick, one of the oldest citizens of Toledo, Ohio, died of heart disease on December 12. Dr. Waddick was sixty-eight years old and had spent many years in the city of Toledo, where he had held many positions of trust.

Dr. John H. Sanborn of Franklin Falls, N. H., died on December 19 in consequence of a paralytic stroke. Dr. Sanborn was born in Meredith, in 1830, the son of Dr. John Sanborn. He began the study of medicine with his father in Meredith and studied also with his brother, Dr. J. A. Sanborn of Plymouth, and with Prof. B. R. Palmer of Vermont Medical College of Woodstock, Vt. He was graduated from the Berkshire Medical Institute at Pittsfield, Mass., in 1852. He practised his profession in Alstead until December, 1855, and in Meredith until he enlisted as surgeon in the Twelfth New Hampshire Volunteers. After the war he resumed his practice in his native town for several years and then removed to Franklin, where he soon established an enviable reputation and became well known as one of the best read physicians of the old school and a prominent citizen.

Dr. Charles A. Williams, a pioneer physician of Chicago, died on December 18 at the age of sixty-six years. He was born in Caledonia, N. Y., in 1840, and came to Chicago fifteen years later and graduated from Hahnemann Medical College in 1861.

Dr. William Maxwell White of Amsterdam, N. Y., died December 29, of pneumonia. He was forty years old. He was a graduate of Union College, 1881, and the Albany Medical College, 1885. He was a son of the late Dr. Joseph M. White.

Dr. B. W. Taylor of Columbia, S. C., died on December 27, of pneumonia at the age of seventy-two years. His grandfather was a Colonel in the Revolution. Dr. Taylor was a Colonel in the Confederate Army on General Hampton's staff, and was the chief surgeon in Charleston Harbor at the fall of Fort Sumpter. At the close of the war he was Surgeon-General of Cavalry of the Army of Northern Virginia.

Dr. J. Hodges Drake of Asheville, N. C., died on December 15 at the age of thirty-six years. Dr. Drake went to Asheville from Opelika, Ala., five years ago.

Dr. Thomas Gibson of Twiggs County, Ga., died on December 11. He was born in 1819 and had been in practice since 1838, continuing in active work until the onset of his last illness. Dr. O. C. Gibson of Macon, Ga., is his son.

Dr. Benjamin Blockford, for fourteen years superintendent of the Western State Hospital at Taunton, Va., died on December 13, at the age of seventy-one years. He was a native of Lynchburg, Va.

Dr. C. C. Clements of Springfield, Mo., died on December 20, after an illness of two weeks. Dr. Clements was born April 4, 1838, at Clementsville, Tenn., and before the war attended Louisville, Ky., Medical College. Afterwards he also attended Jefferson Medical College at Philadelphia, Pa. During the war, from 1861 to 1865, he served in the Union Army, first as captain of a cavalry company, then as brigade surgeon with the rank of major. At the close of the war he resided for two years at Paris and Sherman, Texas, whence he came to Springfield in 1868, from which time he successfully practised up to his last illness.

Dr. William W. Gardner of Springfield, Mass., died on December 11, at the age of seventy-nine years. After serving in the Mexican war he received his medical degree from the Worcester Medical College in 1849, and settled in Pittsfield. He went to Springfield in 1860 and after some time spent in further study in New York, he made a specialty of ophthalmology, which he practised exclusively after 1875.

Dr. John Campbell, Brigadier-General and Surgeon U. S. Army, retired, died at his home at Cold Spring, N. Y., on December 25, 1905. He was born in Albany, N. Y., on September 16, 1821. He was graduated from the Albany Medical College and in 1847 he entered the U. S. Army as Assistant Surgeon. He served through the Mexican War on General Scott's staff, participated in Indian campaigns, and served through the Civil War, during which he was twice brevetted for faithful and meritorious services. In 1885 he was retired for age, with the rank of Colonel and Surgeon. Last year his rank was raised to Brigadier-General. He is survived by a wife, six sons, and two daughters.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HOSPITAL FUNDS AND MANAGEMENT—A DANGER OF SOFT WATER—FOG AND SMOKE.

London, Dec. 15, 1905.

At a meeting of the General Council of King Edward's Hospital Fund the reports of the executive and distributor's committees were adopted and cheques for the grants awarded were posted last evening. The total amount this year is £100,000, as against £79,000 in 1904. A strong conviction is expressed of the undesirability of new hospitals being opened without the fullest consideration of their necessity and the means of maintaining them. This expression will, perhaps, operate as a warning to those who propose such action, that they will not be assisted by this fund.

Following the example of the Sunday fund the committee will in all such cases require the institution to have been maintained for three complete years before any application can be entertained. This determination will commend itself to the profession, for no well-informed person can doubt that we have far too many small hospitals and dispensaries. Some have done long and good service, but the value of others is nil. Of the latter some have grants, so that the list might very well be revised; but of course it is no easy task to estimate the relative importance of 106 institutions, and though some persons are dissatisfied, the difficulties of the committee should be fairly considered.

The propriety of amalgamation is again urged in the report, and the committee evidently intends to use further pressure in this direction. It may, however, seem to many unjustifiable to devote money subscribed for hospital maintenance to promote this union or to give sums towards buildings or the extinction of debts. The policy of the Council is, however, to exercise control over managers in all directions that tend towards efficiency, and the committee expresses its views on a variety of points. Thus the transfer of teaching preliminary and intermediate subjects is applauded and the cost of removing King's College Hospital to South London is aided to the extent of £11,000. A special grant is voted to the Great Northern Central to purchase freehold ground adjoining. West Ham Hospital has lately acquired an adjoining building and £2,500 is voted for furnishing it—a sum which certainly seems, at first sight, excessive and which illustrates the extravagant ideas of hospital managers as to the requirements of patients in the way of costly equipments. The fact is mentioned that in some cases grants have been made towards building schemes which have not been carried out. This looks like clear proof that such extensions were not really required. An equally significant fact is that in some cases grants allocated to the reopening of beds have not added to the permanent accommodation, inasmuch as other wards have been subsequently closed. Could anything so reprehensible have been anticipated from hospital managers? In other cases the hospitals to which grants for reopening have been made no longer need help in this way. The committee think it therefore time for making a change and no longer dividing grants into subscriptions and donations. The fund has now attained a permanent income of £50,000 a year, and therefore can meet all its engagements for annual amounts. An interesting letter was read by the Duke of Fife from the Prince of Wales, who for the first time had (in consequence of his absence in India) been unable to preside at the meeting.

It is not often that complaint is made of water being too pure. From Birmingham, however, I hear that the water brought at vast expense from the Welsh hills is so soft that it has a serious effect on galvanized cooking vessels, in consequence of which the health committee has decided to ask manufacturers to recall any such utensils which they have sent out for sale in the city. The solvent effect of soft water has long been recognized, but it was not expected that the Birmingham supply would prove so active.

In London some genuine old-fashioned fogs have interfered with business and pleasure and set people talking again about smoke prevention. Everyone is for prevention just now, but I suppose the excitement will give way once more to other topics.

OUR BERLIN LETTER.

(From our Special Correspondent.)

HONOR TO KOCH—BERLIN HOSPITALS OPENED FOR MEDICAL STUDY—DIAGNOSTIC VALUE OF THE ROENTGEN RAYS—RELATION OF PANCREATIC DISEASE TO DIABETES—EXPERIENCES OF GERMAN SURGEONS IN THE RUSSO-JAPANESE WAR—THE BLOOD IN LEAD POISONING.

Berlin November 25, 1905.

The Medical Society opened its session this winter without a vice-president, for Wiesenthal the old, well-known physician died during vacation. At about the same time Koch returned from his successful trip to Africa, and there was a general desire to honor him by electing him to this office. It has been the custom to appoint a general practitioner to this position, and many did not like any innovation. However, since Koch was a general practitioner before he began his bacteriological studies, and since his life has been a generally useful one, he was nominated on October 22, and accepted a few days later.

Berlin has opened her hospitals for medical instruction, and the courses of study in her institutions are much improved. In the future the hospitals are to be opened for lectures and courses which will be given by the physicians connected with them. Up to the present time there were certain courses for Berlin physicians but only a few for students. This régime is very valuable for those hospital physicians who are also professors in the University, as well as for the medical world in general.

A further advance in medical affairs arranged by local authorities is the opening of a central bureau in the City Hall which gives information to all desiring to know about vacancies for patients in the hospitals. Special telephones will connect the bureau with the hospitals. This bureau will also control the transportation of patients.

Apropos of the value of the Roentgen rays in diagnosis, there were presented very interesting results of investigations by this method at the meeting of the "Vereinigung der Charité Aerzte" on November 15. De la Kamp spoke on tuberculosis of the mediastinal and bronchial glands. Twelve hundred children were examined by the Roentgen rays. In these cases the discovery of tuberculous glands by the ordinary methods of physical investigation was very rare. The results of the examinations by the Roentgen rays are not always absolutely certain, but the Roentgenograms are a great improvement on the old methods. Various difficulties may be avoided with practice, one of which is the confusion of the alterations in bones and carti-

lages due to rachitis with diseased glands which they resemble. The writer declares that the tuberculous glands of the bronchial system and of the mediastinum which are made visible by the Roentgen rays do not correspond with the palpable glands of the neck.

Steyer spoke at the same meeting concerning the position and the shape of the stomach. By using bismuth he has studied the position and the form of the stomach by means of the Roentgen rays after stopping peristaltic movements by the use of opium. He agrees with Doyen that the stomach may be generally considered as assuming a vertical position and that its shape often resembles that of an hour-glass. This theory will not support the former idea of the existence of an enteroptosis when the stomach reaches to the navel since the normal stomach often falls below this landmark.

Great interest attaches to Hirschfeld's paper on the diseases of the pancreas in diabetes which was read November 8, before the "Medicinische Gesellschaft." The diagnosis of pancreatic disease during the course of diabetes has always been considered very difficult. Indeed, this affection was formerly diagnosed in those cases of diabetes only, which were in the last stages. Now the effort is made to diagnose this complication in cases which are not severe. The speaker presented the following points which he thought valuable in clearing up the diagnosis: The disturbance in the albumin and fat; the pain which resembles that in the crisis of gallstones or angina pectoris; the question of the presence of gallstones need not be considered if the liver is not painful, if the pain is more confined to the left side of the body, and if jaundice is absent the function of the circulatory organs is disturbed, for even if the patients drink generously, the amount of urine is not increased, neither is there any alteration in the function of the stomach, the heart, or the kidneys. There is often present persistent edema and the patients experience great discomfort after drinking much liquid. The secretion of saccharum and acetone is often increased. The prognosis of such cases is grave on account of the frequent attacks of pain which are followed by an increase in the secretion of saccharum for the danger of coma in this condition must be considered.

The German physicians who were sent out to the front in Eastern Asia have nearly all returned. Brentano the chief of the German Red Cross Hospitals on the Russian side spoke concerning joint injuries at the "Vereinigung des Chirurgens Berlins," on November 11. The soldiers who were wounded in the battle of Mukden in general were not in good condition because they were brought in as a rule after six days of difficult marching, the transportation being very bad. They were partly or not at all bandaged. However, with all of these drawbacks, out of twenty-eight injured joints sixteen were not infected, only twelve patients showing an increased temperature. The wounded soldiers could give no information as to the direction or the distance from which the shot came. The sixteen cases which were not infected presented a smooth round wound as if the shot had come from a distance. Diagnosis was made on account of the pain in the joints, exudation, the discharge of synovial fluid from the wound and by its direction. In cases in which the ball was fixed in the joint it was always extracted, and although it was surrounded by a dark serous exudation the wound healed by first intention. All other cases without complications were treated by fixation bandages and afterwards by massage and gymnastic exercises. None of these soldiers, however, could return to the front because of the persistent disturbance of the joint's activity. The twelve infected cases had been, as a rule, wounded by shots from the artillery and infantry at a short distance. Long incisions in the capsule, and as rare disturbance of the bandages as possible, met with the best results. The fenestrated plaster-of-Paris bandage with iron bridle, or palm leaves softened in hot water, interposed, were found to be the best. Four cases out of five infected with tetanus died.

The well-known blood investigations of Grawitz seem to be yielding practical results. This opinion is strengthened by his paper concerning personal prophylaxis in relation to lead poisoning which was read on October 25, before the "Medicinische Gesellschaft." Lead poisoning induced by the inhalation of lead (powder or fumes) or by the introduction of lead particles into the stomach can be absolutely avoided by hygienic means, according to the writer. This intoxication is very grave for two reasons: The lead worker does not become accustomed to this poison slowly, and lead poisoning does not confer immunity but even predisposes the patient to severer attacks. A sure sign of lead poisoning is the granular degeneration of the red blood cells. This sign differentiates an attack of lead colic from other affections. Seventy lead workers who had been poisoned by lead have been examined, and in most cases this symptom has been found. Consequently the speaker proposed to practise prophylaxis in this affection as is done in malaria. That is, he believes that regular blood examinations ought to be made and those patients who show such degeneration of the blood cells should be removed from their work and be treated with purgatives and baths.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

PERFORATION IN TYPHOID FEVER—PATHOLOGY OF PLAGUE—VACCINATION AGAINST PLAGUE—REORGANIZATION OF THE HEALTH DEPARTMENT OF THE ISLANDS—PERSONAL.

MANILA, P. I., November 22, 1905.

THE November meeting of the Manila Medical Society was held at St. Paul's Hospital at 8:30 P. M., the sixth instant.

A paper entitled "A Report of Two Cases of Typhoid Fever, with Perforation and Operation" by Dr. J. B. Thomas, formerly Attending Physician and Surgeon of theBaguio Sanatorium, was read by the Secretary. He reported that the operations had been done under most unfavorable circumstances, and considering the conditions by which he was surrounded, he believed that a mortality of fifty per cent. was rather favorable. Both of the cases occurred in Japanese laborers who worked in the vicinity of the sanatorium.

Dr. Maxmilian Herzog sketched, in a short talk, the pathology of plague, as he had found it at the Government morgue, where he had been holding autopsies during the past two years. In general, his description corresponded closely with that found in the standard text books. A point to which he invites attention, so far as the pathology of plague is concerned, was the finding of hyaline fibrin thrombosis of the glomeruli of the kidneys. He found this condition in seven out of twenty cases which he studied microscopically. He also believes that bubonic plague is, as a rule, not a true septicemia, but a local lymphatic infection, and that the universal dissemination of the infecting bacilli through the blood current generally only occurs during the agonal stage.

A paper entitled "Human Vaccination Against Plague" was read by Dr. Richard P. Strong of the Bureau of Government Laboratories (now known as the Bureau of Science). He stated that his paper should only be considered as a preliminary report, and that when his research was entirely completed, he would prepare a more detailed paper. He has been working with plague bacilli for the past two years, with the view of attenuating them, so that they could be injected into human beings with safety, and now feels that he has entirely succeeded. He stated that he had a true vaccine, in that he uses the living plague organisms in his protective inoculations. His experimental work has been conducted almost entirely upon rats, and he has been so successful in protecting them against plague by vaccinating with the living attenuated plague organism, that when the rats are inoculated later with a dose of plague culture that would be absolutely fatal to an unvaccinated rat, it apparently has no effect upon a protected animal. He conducted some experiments upon a gorrilla, but reported that he was unfortunate in injecting too large a dose of plague, with the result that the animal died. An interesting point observed at the autopsy, however, was that the spleen showed only a few scattered organisms in each microscopic field, while the spleen usually contains enormous numbers of bacilli in unvaccinated plague cases.

With a view to conducting the Government more economically, the Governor-General, about six months ago, appointed an organization committee which was to make a thorough examination of the workings of each Bureau and recommend a plan that had for its object the lessening of the running expenses without decreasing the efficiency of the work carried on. The committee made its report some months ago and the Commission has taken action upon the same. The majority of the recommendations which were adopted became effective November 1, 1905. Some of the new legislation which is of interest to the medical profession is the change made in the medical departments of the Government. The Board of Health, as a board, was abolished, and there was substituted instead, a Director of Health, who has all the duties and powers heretofore conferred upon the Board of Health for the Philippine Islands. It is thought that by consolidating the authority all under one head, and holding that official strictly responsible, for everything that occurs, the shifting of responsibility which necessarily takes place in board administration can be avoided; furthermore, action by a board is necessarily slow, whereas, the very nature of the conditions in the Philippine Islands requires prompt action. The management of the infectious and contagious diseases being cited as an example where quick work may result in avoiding an epidemic. So far as known, this plan of health organization has not been attempted often in the United

States, the State of Pennsylvania being probably the only exception, and there the bill putting the plan into effect was only passed by the last legislature. The experiment here will be watched with considerable interest.

In addition to the duties heretofore performed by the Board of Health, there is now concentrated under the Director of Health the sanitation of the insular and provincial prisons, the Civil Hospital, as well as the Baguio Sanatorium of Benguet. It will therefore be seen from the foregoing, that with the exception of a few minor medical matters, the entire medical work in which the Government is interested is now vested under one head. This change is a distinct advance, for the reason that it places a professional head in charge of medical matters that have heretofore been controlled by laymen.

Dr. Maxmilian Herzog has returned from his trip to Japan, where he had gone about two months ago, for the purpose of making a special study of beriberi.

THE FEE QUESTION.

To the Editor of the Medical Record:

Sir:—It seems to me that the correspondence here presented is worthy of publication, as representing rather typical attitudes on two sides of a common question. The recipient of the bill was surprised at the amount charged, and I was surprised at the points of view taken in the case by an educated woman of generous and kindly nature. As a matter of curiosity the letters were referred to three representative surgeons in three cities at a distance from New York, in order to determine their feeling in the matter.

There is a certain degree of demoralizing influence upon the family physician when he fears to call in consultation the men whom he would choose, on the ground—and a well taken one—that he is likely to be held to account for the layman's views about the charges. Several physicians who send me their poor patients say that they do not dare to send others, because appropriate charges are too apt to be misunderstood, and they ask me to make maximum bills smaller. I would like very much to please these physicians, but the weakness and the strength of our profession lies in our desire to please, and one must be careful not to jeopardize the best interests of his colleagues. It would increase my income by many thousands of dollars annually to accede to the request, but there is a matter of principle involved. When dignified fees are charged and the reasons for them appreciated, we shall have more endowments for our medical educational institutions, and more public spirit directed toward our profession. The man who believes that he is the subject of an overcharge simply "because he had the money" is not a fit subject for approach on the matter of endowments; while the same man properly informed might be our best ally.

There is no doubt that people in comfortable circumstances are daily targets for overcharge of many kinds, and no one knows this better than the doctor who has himself acquired a competence, and who is generally considered to be an "easy mark." Well-to-do members of society must constantly stand on the defensive for self-protection. It is the fault of the medical profession if we allow colleagues really to make overcharges, or, on the other hand, to allow laymen to believe that fair charges ever belong to that category. In an ordinary case of dyspepsia it sometimes costs more than one hundred dollars just to get a diagnosis of the reasons for the symptom; but the layman is apt to think that a dollar a bottle for something advertised in the daily press is about the right figure, and most dyspeptics will suffer for a lifetime, or even commit suicide, rather than undergo the expense of accurate methods for getting relief. The family physician who tries to direct them aright may soon find himself out of practice and his patients at the drug store.

What is an overcharge? Take this case of appendicitis in question for example. Fifteen years ago I would have made a long incision, flushing out the peritoneal cavity, and employing iodoform gauze packing. The work would have required half an hour of time at least. The patient would probably have had a ventral hernia at the site of the long scar, if he did not die from insidious iodoform poisoning mistaken for septicemia, or from ileus caused by the presence of the gauze, or from sepsis allowed by the lessened natural resistance due to such treatment. It is a very easy matter for the surgeon to produce death, in a case of gangrenous appendicitis. Five hundred dollars would have been an overcharge for that sort of treatment. As it was, the operation was done in a few minutes, and with so little disturbance in every way that the good mother observed that the case did not amount to much, and held it to be a much less serious matter than her own case of ankylosis of the elbow (non-operative) which had slowly yielded to treatment. Five thousand dollars would really have been a fair charge in the case, and the mother would not have hesitated much about paying that amount for an automobile or for a small pearl necklace. Please do not consider that I am making claim for skill beyond that of very many of us who have made sacrifices and have given ourselves opportunities that are to-day available in many fields of practice. During the year I turn over to other surgeons thousands of dollars worth of work in special cases that they will manage better, although I have taken trips to Europe and have gone to great expense in order to try and become proficient in these very cases. Things have changed since the days when the kindest hands did the wrong things for patients, and that was not so very long ago. One of our naturalists told me that he planned to write a book on insects injurious to orchard trees. At the end of a year he found that it would be necessary to devote himself to scale insects alone; and subsequently he devoted himself to one genus of scale insects, and filled a book with the available knowledge on about three hundred species of this one genus. Precisely the same thing applies to special work in medicine and in surgery to-day.

New York, July 5, 1905.

Dear Doctor Morris:

I have been considering the amount of your bill, which you sent me twice within the month, and after consultation with friends who have had similar service rendered by Dr. A., and by Dr. B., for much more *serious* matters, it seems to me that the basis established by Doctors A. and B. should be satisfactory to you, and therefore hand you my cheque for $600.

Sincerely yours,
Mrs. C.

New York, Sept. 23, 1905.

Dear Mrs. C.:

Your letter and cheque for six hundred dollars came while I was entirely out of reach of mail, and my secretary informs me that no answer was sent, because it seemed to be a matter requiring my personal answer. Now in regard to the points, *seriatim*. It is pretty well known that I do not undertake the responsibilities of any abdominal operation for less than one thousand dollars, excepting where there is need for doing otherwise, and in cases like your son's it has sometimes been several times that amount. The case was one of gangrenous appendicitis, with impending disaster; and the fact that the operation was done in twelve minutes, and our patient well in a few days, does not mean that I consider the responsibility as having been small. Some years ago I might have spent about an hour at the operation, and there might have been a hernia and other complications, following a tedious convalescence—if we had the fortune to get even that far.

In regard to Dr. A., people are very fortunate when they can really engage his personal interest and get his skilled services for his trifling fees. He is the last one of the noted surgeons here who adheres to the fees that were customary in the days when services were not worth quite so much as they are to-day, and we allow many cases to go to him every year rather than charge what we consider to be undignified fees. Dr. A. should ordinarily charge from five to ten times as much as he does; for standing at the head of the profession it would not only be his due, but would allow him more time for giving personal attention to cases that must often be turned over to assistants. Concerning Dr. B., his services consisted in successful treatment of an ankylosis of the elbow, if I remember correctly, and while this may seem to you to have been a "much more serious matter," it was really not in the same class at all. Even had I been so successful as Dr. B. was in that particular sort of case, my charge would probably have been less than the three hundred dollars. Dr. B.'s charge in a case like your son's might have been more than mine; and I consider that the charge of one thousand dollars for the operation, and eighty dollars for time, was a very moderate and friendly sort of charge. I shall not press the matter of collection of the balance of the bill, for it destroys the nice feeling of interest in the case itself; but I doubt if people generally know how surgeons feel about their patients who have been taken out of dangerous positions by accurate methods. If on further inquiry you happen to learn that my charge to you was less than my charge to others for similar work, I would be glad to know that, for it would relieve me from the feeling that you believe an overcharge to have been made. I do not know what charge Dr. D. (the family physician) made for his services, but in a case of this sort he would be entitled to special consideration on the ground of his prompt diagnosis and speedy action at a moment that was vital, and yet when many physicians would have hesitated, fearing to incur the displeasure of a family suddenly presented with the question of an unanticipated surgical operation of grave character.

New York, September 29, 1905.

Dear Doctor Morris:

I have just returned to find your note. I don't at all remember exactly what I wrote you last July, but at the risk of repeating myself I will mention what I think should be taken into consideration, in reflecting about the case. The fee for out-of-town work is, I know, a largely increased one, but I think on this occasion the work could hardly be put in that category. Because, if you remember, we telephoned you from my house in ——— —— at nine o'clock in the morning, asking you to come at once, and you replied that it would not be possible as you had three other operations for that day, and could only manage a late afternoon train. This you did, and returned to town before dinner. Thus it seems your trip of twenty miles out could not have interfered to the detriment either of your working day or with your dinner, or other working engagements. I believe the customary fee in New York with subsequent attendance is $500.00, so I sent you my cheque for $600.00, thinking $100.00 was not out of the way as compensation for that horrid little journey by ferry and train. I hope, dear Doctor Morris, that you will not think I am given to contesting my bills. I never have done such a thing, but I really felt that your secretary in the ordinary routine of work, had sent a memorandum that had not been looked over by you, who had full knowledge of the circumstances.

Sincerely yours,
Mrs. C.

A letter followed from me to Mrs. C., saying that I had added only eighty dollars for four hours' time, for the out-of-town part of the work, and that her letter was so frank and genuine, and represented such a common attitude of misunderstanding that I intended to refer the first part of the correspondence to three other surgeons for an expression of opinion, and for publication in a representative medical journal. Following are the letters of these three surgeons.

——— October 15, 1905.

Dear Doctor Morris:

I am very much interested in your letter of September 23, which I find on my return from my vacation. It is curious—Dr. F. and I, during our recent visit to Europe, spoke many times of the influence which Dr. A.'s fees are having in our community. I have the highest personal regard for Dr. A., and the greatest respect for his opinions and operative skill. I have told him that in my opinion he puts too low a value upon his services. Here in ———, when we charge people of large means what we think to be reasonable fees for the great responsibilities of surgery, we are told that men of great reputation in other large cities charge small fees. This makes it very difficult indeed to charge a fee at all proportionate to the responsibilities of the work. What other men do would not influence me in the least. I know that we are inadequately paid for the responsibilities of the work. With reference to your particular case, it seems to me that the fee was none too large. One who has been all through the dreadful experiences of appendicitis, and who has seen the magnificent results of operation in skilled hands, wonders how a patient can write such a letter as this patient wrote you. I had one of my own children operated upon, and if I had been a wealthy man I should not have considered any sum too great to pay—even five thousand or ten thousand dollars. I know what it means to open the abdomen. It may mean a brilliant recovery or it may mean an early and distressing death. I know what it means to have the intimate knowledge of acute abdominal conditions which enables a skillful surgeon to ward off impending disaster, and I know what it means when the blow is unskillfully parried. Your patient is mistaken about Dr. B.'s fees in abdominal work. However annoying to the patient operation on the elbow may be, it does not involve possibilities of early death. In all abdominal cases I charge a thousand dollars for operation, and in some cases I charge more. When I charge more than a thousand dollars I tell patients why I make the charge. It is always because the responsibilities are heavy. In cases of patients of moderate circumstances my fee is diminished accordingly—much of my work is done for nothing. Your letter to this patient excites my admiration. I should like to be able to write in such a manner to one who had written me such a—what shall I say?—well, unappreciative letter—to put it in the mildest form.

Yours very truly,
E.

——— October 17, 1905.

Dear Doctor Morris:—It seems to me your bill was a very small one indeed for the services rendered. I feel as you do. Where people are abundantly able to reward the surgeon in some slight measure in proportion to his services, it is better to let them go elsewhere, rather than make trifling charges. Why do you not send a copy of your letter to Dr. A.? Send some of your people to ——— and I will train them for you.

Faithfully yours,
F.

——— November 10, 1905.

Dear Doctor Morris:

I have just returned from a vacation and find your letter. In reply would say that your fee for the services under the conditions appears to me to have been a reasonable one. Indeed, I was about to say, very moderate. All lives are equally valuable to the individual. On that basis the medical profession has always given its best skill without reserve and without compensation to those who were in need. The modern methods of surgery involve an enormously increased range of knowledge, an increased risk of error on account of the prompt and forceful action, which in itself is an element of danger to the patient's life, if improperly used; and therefore an additional individual responsibility. The revenue of the medical profession has not increased at all in proportion to the revenue of the lawyer, the artist, or the artisan. Living conditions have entirely changed. The surgeon, when a barber, could live on a modest compensation. The surgeon, as an educated man of taste and refinement, of social standing—and such refinement and social standing are necessary for maintaining his position and influence in the community—has entailed upon him an enormous expense. Formerly an uncouth man might go in and do the bone setting Now such a man would not be accepted or tolerated in the surgical field; and if he were, he would be the source of greatest danger to the patient, and expensive at any price. Again in the case of a well-known individual in the community, needing a surgical operation which carries elements of danger, not only from the operation but from the original disease, if the operation terminates fatally, the surgeon is criticised, justly or unjustly, and must bear the financial loss consequent upon the public knowledge that he "lost" that patient. For such people a larger fee must be charged if they can afford it. The skillful worker who recognized conditions, thereby securing good results with diminished hazard to the patient, deserves a large compensation because of the insurance against fatality that goes with his skill. Superior skill and superior judgment, not only demand but command superior fees.

Yours truly,
G.

———, Tuesday.

Dear Doctor Morris:

I enclose you a cheque for the balance of your fee, which you assure me is the customary one. My discussion with you has been a friendly one, and so you will not, I am sure, suspect me of any acrimony when I say that my feeling about the present excessive charge of surgeons is a very general one, and the reflection of a sentiment that is everywhere one of surprise and dissatisfaction. We do not question your ability, but we feel you make us pay too dear for it.

Sincerely yours,
Mrs. C.

New York, Nov. 9, 1905.

Dear Mrs. C.:

Thank you for the cheque for the balance of the bill, and also for the frank expression of opinion, with its true ring. Indeed I am only too familiar with the "feeling about the present excessive charges of surgeons, and the expressions of surprise and dissatisfaction." People feel that they are overcharged, and surgeons feel that they are underpaid. This sort of thing will right itself along normal lines, and in a few years we are likely to hear of large bills paid willingly by patients who know exactly the reasons for the bills. Surgeons would pay to each other very much larger fees than they at present dare to ask from their patients. Services may be obtained to-day which are immensely more valuable than any which could have been obtained a few years ago, but the people are not as yet awake to the fact. Curiously enough, the Jews, notably shrewd and particular in money matters, are as a class the first to adapt themselves to the new order of things, and to secure and pay for the last degree of technical skill on the part of medical or surgical experts. In New England there remains the most persistent tendency to feel that "almost anything will do," provided that charges are at a minimum. We are going through a transition stage in these matters at present, but the right is certain to prevail.

Yours truly,
R. T. M.

Robert T. Morris, M.D.,
616 Madison Ave.

DEATH BY ELECTRICITY.

To the Editor of the Medical Record:

Sir:—Your editorial on "Death by Electricity" in your issue of December 23 surprises me very much, especially the expression in your closing sentence: "And this raises again the question as to when death occurs in cases of so-called electrocution—whether it is while the subject is in the chair or while he is on the autopsy table." It is truly astonishing how quickly important facts are forgotten.

The question how electricity produces death in electrocution was very definitely settled by the report of a committee consisting of Prof. A. E. Kenneally and myself appointed by Governor Flower at the request of the Electrical World to investigate the subject. It was decided by that committee and so reported and published at the time that electricity, or at any rate, the alternating current employed for electrocution, caused death by producing rupture of the blood-vessels of the brain. There was at the autopsies marked evidence of such rupture and the microscopic investigation of the brain of the two subjects examined, viz.: the negro Hampton and Dr. Buchanan, showed abundant evidence of rupture of the vessels throughout the brain in verification of those observations on the autopsy table. These observations were repeated by other investigations subsequently at other electrocutions. The explanation of cerebral hemorrhage caused by electricity is to be found in the fact that the alternating current employed for electrocution causes violent contraction of all the muscular structure throughout the body, both the voluntary and the involuntary muscles, and hence the blood is driven forcibly into the brain and rupture of the overdistended vessels occurs in consequence. The absolutely bloodless condition of all parts of the body and the absence of blood in all of the vessels throughout the whole body below the head was noticeable at the autopsy, and when the cranium was opened it was found to be filled with blood. Up to the time of this investigation and the report of the committee, the cause of death by electricity was involved in obscurity and there was much speculation thereon. But that report settled the question as far as electrocution is concerned.

It is very well and proper to attempt resuscitation of those accidentally shocked by electricity, for in many instances they may be revived if the effort is made promptly and judiciously, but in these cases of accidental shock the condition is very different. The total energy of the current actually directed against the body is indefinite and uncertain and may be insufficient to cause death, but in the case of electrocution the strength of the current employed is definitely known, and it is applied in a manner to bring the whole body under its influence. Death is therefore both positive and instantaneous, beyond a question of possible doubt. The maximum electrical energy employed for electrocution is 1740 volts and 8 amperes: equivalent to 13,920 Watts, and since 746 Watts equals one horsepower, the energy used is equivalent to about 18 2-3 electrical horsepower.

Augustin H. Goelet, M.D.

New York.

Progress of Medical Science.

New York Medical Journal, December 30, 1905.

Typhoid Fever in Infants.—S. D. Williamson refers to a small epidemic of typhoid occurring in his community, the cause being an infected milk supply. Among the cases coming under the author's personal observation was that of a bottle-fed baby five months old, whose blood gave on the twelfth day a positive Widal reaction. The temperature curve was atypical only in that there occurred a morning remission of three and sometimes four degrees during the second week. The patient recovered.

Neurasthenia Among Blondes in the Southwest.—V. E. Watkins calls attention to the nervousness observable among women in the southwestern portions of the country. Most of the towns of this section are about four thousand feet above sea level and all physical ailments are popularly attributed to the altitude. Newcomers to the region generally experience a decided exhilaration. In those of dark complexion, this generally continues as a mere sense of well-being. In another class, however, this bienaise is followed by an abnormal excitation of the nervous system and later by more or less nerve exhaustion. In the author's experience nearly all of this latter class of patients were of light complexion—decided blondes. Men were less affected than women. Blondes who permanently reside in the section find that a trip East annually is of decided advantage to their general health. The manifestations of the trouble are various. It may be only a slight lack of self-control or may run on to a profound nervous depression. In nearly all patients there is an irritability of temper and inconsistencies of character associated with a beginning neurasthenia. An unaccountable drowsiness is sometimes complained of. Occasionally there is loss of weight without any appreciable cause. Menstrual disorders are frequent, particularly menorrhagia and metrorrhagia of functional type, and two cases are recalled of women who were obliged to make periodical trips East on account of this condition. Headaches are very common. Physical exhaustion is often the most prominent complaint, and inquiry soon showed it to be resultant upon an unnatural nervous energy prompting the individual to overexertion and bodily fatigue. Brunettes are seldom, if ever, affected.

The Recognition of Eyestrain by the General Practitioner.—C. P. Franklin asserts that the common indifference of many so-called neurasthenic patients to out-door sports and open-air occupations and their devotion to close work and in-door employments is due to eyestrain under the form of myopia because of the blurring of vision beyond the far point. On the other hand the distaste for close work shown by headaches, the narrowing of the palpebral fissure to shut out the aberrant rays of light and the blurring of the close point, may come from astigmatism, and symptoms arising from this state may and often do exert a decidedly deleterious effect on the general state of health. General diseases often cause ocular disturbances as does also the convalescence from many of the continued fevers. As an aid to diagnosis it may be noted that the patient suffering from eyestrain nearly always complains of symptoms related to the sight-blurring vision on close work or even diplopia, a mistiness after use of the eyes, smarting, burning lids, much distress after attending church, the theater, shopping, or any place of assemblage, and particularly during and immediately after traveling. Two further subjective symptoms of eyestrain are photophobia and muscæ volitantes. The obscure dyspepsias, the unrelieved headaches, the unclassified neurasthenias, the puzzling nasal reflexes, the perplexing dental symptoms, are often and only too often due to ocular conditions unrecognized by the general practitioner, not by any means through any lack of ability upon his part, but simply because the immense demands upon his attention to keep abreast of the time in his own department forbid his becoming familiar with conditions of the eye which are naturally a routine matter to the opthalmologist.

Medical News, December 30, 1905.

Thiosinamine in the Treatment of Tinnitus Aurium.—Personal experiences are given by S. McCullagh, who states that this remedy, also known as allylsulphocaramide, was first used by Hebra in 1892 for lupus. It is made by mixing 2 parts of the oil of black mustard, 1 part of absolute alcohol, and 7 parts of water of ammonia, warming for a few hours on a water bath at a temperature of 104° F., and then evaporating to dryness. The odors of mustard and ammonia are driven off, and, on cooling, glistening, white, acicular crystals of thiosinamine are deposited. It has a slightly bitter taste and a garlicky odor. It is sparingly soluble in cold water, soluble in 2 parts of warm water, and freely so in alcohol and ether. Internally the remedy produces a slight tonic effect and sometimes a diuresis. Occasionally a disturbance of the gastroenteric tract is noticed. Locally it appears to destroy newly formed connective tissue. The internal dose is from one-half to three grains, three times a day. For the relief of the special symptom noted in the title of the paper, the author has given the remedy in 38 cases. Of this number 20 patients were cured, 7 much improved, 5 improved, and 6 not improved. His general conclusions are as follows: (1) This drug exerts a markedly beneficial action on ear disease accompanied by the formation of new connective tissue; (2) this beneficial action is due to an increased pliability of the tissue, allowing the usual forms of treatment to accomplish their object better; (3) its administration should always be accompanied by mechanical measures; (4) as good results may be obtained by administration by the mouth as hypodermically; (5) better and more prompt results may be obtained in recent cases; (6) it exerts a beneficial action on vertigo; (7) care should be used in looking for contraindications; (8) better results may be obtained with it in the relief of tinnitus than with any drug used heretofore.

Some Observations on Leucoderma (Addison's Keloid).—F. Robbins gives a general description of this malady and records his personal experience with four cases. He inclines to the belief that the malady is dependent upon peripheral nutritive changes, probably due to a toxin introduced from without. Perhaps this toxin is

absorbed by the peripheral nerve endings and transmitted to those ganglionic nerve cells for which it has a special affinity and in which a degenerative process is sure to follow. The remarkable resemblance to the blotches of old vaccination marks is suggestive. Remedies which have proven of value are applications of copper sulphate in vaseline (20 grains to the ounce), glacial acetic acid, iodides internally and general hygienic measures. One of the author's patients presented the usual signs of pseudoleukemia with the usual blood changes. He has, however, no conclusions to present in deciding how for the blood extravasations which have been observed in the leukemias conjointly with changes in the vessels predispose to the development of what is considered as a trophoneurosis in general and as Addison's keloid in particular.

American Medicine, December 30, 1905

The Unconscious Value of Careful Clinical Examination of Patients.—Louis Faugères Bishop emphasizes the fact that the careful clinical examination of a patient, carried on while the judgment is suspended, gives the opportunity for the subconscious development of a valuable judgment. This is entirely lost when the investigation is curtailed in time or details, and when the premature judgment is allowed to be formed. Therefore it is most important that in every case in which we seriously undertake the treatment, to make a very complete investigation into the history, the physical signs, and the laboratory findings, and only after collecting these, to form judgments as to the best course of treatment for that particular patient. The physician who is to give the opinion should, as far as possible keep his mind free from conclusions until his final opinion is given upon the case. It is the subconscious mental activity that produces those results that are considered so valuable in all professional work.

Transplantation of Veins and Organs.—Alexis Carrel and C. G. Guthrie obtained the reversal of the circulation in the jugular vein, in the carotid artery, in the arteries and veins of a limb. Important anatomic changes of a transplated venous wall soon occur under the stimulus of the increased pressure. The thigh of a dog was completely amputated and afterward replanted by suturing the vessels, the nerves, the bones, the muscles, the aponeuroses and the skin. The pulsations of the popliteal and the posterior tibeal arteries immediately became normal, and the femoral vein filled with dark blood. A kidney was extirpated and transplanted by anastomosis of the renal artery to the carotid artery, of the renal vein to the jugular, and the ureter was made to open into the lumen of the esophagus. On the third day after the operation the kidney was directly examined. Its circulation was found normal. A good excretion of urine was going on. The thyroid gland was extirpated and replanted with reversal of the circulation. On the ninety-fourth day after the operation, the gland was found to have a good circulation.

A Plea for the Convict Insane.—Horace Phillips shows that penal institutions do not afford facilities for the care of the convict insane. In such cases trained attendants and skillful treatment are necessary. The care of many such convicts in an institution which was never intended for such a purpose, seriously damages the mental state of these convicts. Further, the rude and offensive remarks of persons concerning the condition of this unfortunate class, aggravates the morbid and sensitive nature peculiar to the insane. Pennsylvania is not upholding its reputation for progress and humanity, in failing to provide suitable accommodation for the care and treatment of this unfortunate class.

Indications and Contraindications to the Use of the Obstetric Forceps.—J. Thompson Schell, in discussing the indications for the use of the forceps, says that the disproportion between the expulsion force and the pelvic resistance is the chief and most frequent indication, and that a certain amount of experience with a good deal of common sense is necessary to be always able correctly to pick the proper time for its application. As to the contraindications in cases of hydrocephalic or macerated heads, the forceps is very likely to slip, and the cases can better be managed by a perforator and the use of the cephalotribe. A head freely movable at the brim should not be considered as calling for the use of the forceps, as version is the first operation.

Journal of the American Medical Association, December 30, 1905.

Counting Blood Platelets.—J. H. Pratt criticises the methods used by other investigators for counting blood platelets, and points out four chief sources of error which he thinks have vitiated their results: 1. Mistaking fragments of erythrocytes for blood platelets 2. The use of a graduated pipette, disregarding the tendency of blood platelets to adhere to glass. 3. The use of the ordinary counting chamber, preventing the employment of a sufficiently high power. 4. The lack of satisfactory preserving fluid. He describes his own method, using the following preservative solution: Sodium metaphosphate, 2 grams; sodium chloride, 0.9 gram; distilled water, 100 c.c. This keeps indefinitely, unless molds or bacteria develop. The other sources of error are avoided by special methods of cleaning the glassware, using a very shallow counting chamber and thin cover slip, etc. A comparative count by his own and several of the other methods is given.

The Diameters of the Normal and the Phthisical Chest.—From a study of the chest measurements of 502 normal individuals and in 54 tuberculous cases, using bony landmarks for locating the length and diameters of the chest, W. A. Bessesen deduces in substance the following conclusions: 1. The use of bony landmarks for locating chest diameters is accurate and easily applied. 2. The use of median values for evaluating anthropometric data saves time and the results are more accurate than the arithmetical average. 3. Important points in the shape of the chest, as well as the movements and capacity may be appreciated by observation of its principal diameters. 4. The development of the human chest passes through various stages from the deep or dorsoventral to the broad or transverse type. 5. In the fetus and young babe, the lower plane gives a greater depth and breadth than the mid-plane. 6. The fetus under 30 centimeters in length presents a dorsoventral type of chest—it is deep chested. 7. The new-born child represents the transitional type of chest—it is round chested. 8. During the first five years of life the most notable change is the rapid widening of the chest in its transverse diameter—it becomes broad chested. 9. At puberty the chest takes on an increase in length over the diameters—the adolescent becomes long chested. 10. From the eighteenth to the twenty-fifth year the development of the chest is fairly uniform in all its dimensions and represents the highest development—the broad long chest. 11 The dorsoventral diameter increases at an even rate from birth to maturity. 12. The phthisical chest of adult years, in general, shows an arrest in development of the transverse diameter following puberty. 13. The phthisical chest is a narrow one, tending to the rounded form, with a relative elongation. A number of tables are given with the text.

Myoma of the Esophagus.—J. Bryant, Jr., reports two cases of myoma of the esophagus, both in adults past middle life. In one of the cases there was marked stricture of the esophagus by the tumor which measured 3.2 by 3 by 2.5 cm., and there were also nodules and ulcers at the cardiac orifice and on the fundus of the stomach. In the other case there was no reported clinical symptom of stricture. Both cases were found in autopsies of patients dying from other causes and were the only instances of this tumor recorded in the autopsy records for five years of two large hospitals (the Boston City Hospital and the Long Island Hospital) and the Harvard Medical School. The apparent rarity of the condition, he thinks, warrants the publication of these reports.

Report of Committee on Proprietary Medicines.—O. T. Osborne and C. S. N. Hallberg report the work done by this committee during the last year. They refer to the work of the Council on Pharmacy and Chemistry, and call attention to the necessity for naming substances used in medicine according to some systematic plan. They state that while names must be formed for new substances or to designate newly discovered facts, in case of medicinal substances the names should at least have the origin or derivation for their basis. They also discuss the pharmaceutical nomenclature at some length.

Acute Hemorrhagic Pancreatitis.—C. F. New reports a case of acute hemorrhagic pancreatitis occurring in an insane woman aged 35. The attack began with nausea and vomiting, soon followed by severe epigastric pain and tenderness, requiring opiates, and followed later by fever, tympanitis, rigidity, and general jaundice. Death occurred suddenly within thirty-six hours from the onset of the disease. The autopsy revealed the pancreas, except a small portion of the head and tail, involved in a soggy mass of coagulated blood, together with lesions of the liver, kidneys, and spleen, an atheromatous condition of the larger arteries, and some fatty degeneration of the heart. The author discusses the symptoms and points out the difficulties of the diagnosis. The pancreas is seldom alone diseased, its functions can be more or less fully performed by other organs, or by a small intact remnant of its own tissues. Still, he says, there are some things that should arouse suspicion of its in-

volvement. Fitz has laid down a rule that when a previously healthy person or sufferer from indigestion is suddenly seized with violent pains in the epigastrium, followed by vomiting and collapse, and within twenty-four hours by a circumscribed epigastric swelling, tympanitis and resistance, with slight rise of temperature, one should suspect acute pancreatitis. The crystals described by Cammadge are also claimed to be pathognomonic. The only practical treatment is surgical.

The Lancet, December 16, 1905.

Some Investigations of the Nervous Manifestations of Rheumatism.—F. J. Poynton and A. Paine consider in this article the relations from the standpoint of rheumatism of chorea and meningitis. They first discuss the etiology of acute rheumatism, reiterating their well-known views on its bacteriology. The diplococcus which they accept has certain peculiarities. It is smaller than the streptococcus pyogenes, and causes physiologically an early production of acid and a greater production than the S. pyogenes. Experimentally they find that rabbits are more resistant, and arthritis and endocarditis more constant. It is difficult to raise the virulence. Summarizing, they say that they believe there is a great infective process, the rheumatic, to be placed among that series of infective processes in which the staphylococcus, streptococcus, pneumococcus, and gonococcus are to be found, and that the infective agent is a diplococcus, with, in all probability, some peculiar characters. They incline to the belief that rheumatic chorea is a local infection of the nervous system and that most of its symptoms are the result of a slight meningoencephalitis, and possibly a meningomyelitis. Their reasons are as follows: (1) They have isolated and cultivated the diplococcus from the cerebrospinal fluid in four cases of fatal rheumatism, in three of which there was chorea at time of death. (2) They have produced twitching movements, arthritis, endocarditis, and pericarditis by intravenous injection of the diplococcus into rabbits. (3) They have demonstrated the presence of diplococci three times in the cerebral pia, and once in the brain from chorea cases. (4) They have also demonstrated their presence in the brain and pia of the rabbit that showed the twitching movements. Concerning rheumatic meningitis their conclusions are less positive. They incline to the assumption of an acute rheumatic toxemia as contrasted to the multiple and local lesions of chorea. Between the two comes rheumatic meningitis. Hence, they suggest the following sequence: First, mild rheumatic carditis and chorea; second, severe rheumatic pericarditis and rheumatic meningitis; third, acute fatal rheumatic cardiac dilatation and acute fatal rheumatic hyperpyrexia.

The Treatment of Tuberculosis of the Urinary System by Tuberculin (T. R.)—The results of personal experience in twenty-one cases are given by J. G. Pardoe. Of this number five appear to have been cured. Bearing in mind, however, the tendency to relapse, the author prefers to call them only apparent cures. Fatal cases numbered six and in one the author admits that the injections undoubtedly caused death. Much improvement was noted in four cases and no improvement whatever in six. As to the selection of suitable cases for this remedy, much reliance must be placed on cystoscopic findings. If both ureteric orifices are swollen, inflamed, and in some cases surrounded by ulceration, the probability is that the ureters are also infected, whilst it is often possible to observe a flaky or even distinctly purulent efflux from one or both sides before changes have taken place in the orifices. T. R. should never be given unless there is a clear orifice and a clear discharge on one side at all events. If the cystoscope shows a bladder free from, or but slightly infected with, tubercle with strong evidence of a unilateral infection of one kidney and ureter, *i. e.* a clear and normal efflux from one side with a purulent efflux and an infected orifice on the other side—nephrectomy and ureterectomy, followed by the use of T. R., are indicated.

British Medical Journal, December 16, 1905.

Union of Severed Nose.—J. Murray Renton relates the history of this case. A young woman lost control of her bicycle and was thrown through a plate glass window. Twenty minutes later she was seen by the writer. The tip of her nose was missing and her upper lip was so gashed that it was attached to her face by the internal mucous membrane only. Ten minutes later the tip of the nose was found; it measured about three-quarters of an inch from side to side, half an inch vertically, and its thickness was under an eighth of an inch. It contained almost no cartilage. As it was quite cold, it was placed in warm water for a few minutes, was washed in lysol, 1 in 40, and was secured in position by four cat-gut stitches. The wound was then painted with the compound tincture of benzoin, a few shreds of cotton wool saturated with this liquid being then applied. The lip was treated in the same manner. The patient was put to bed and kept there for ten days; only liquid food was administered. She was able to feel the point of a pencil when touched to her nose within twenty-four hours. There was a gradual increase in the acuteness of sensation which, in about four days, became normal. The wound healed by first intention. Excepting a little redness at the junction of the tip with the nose, and a slight nick in the right nostril, the organ appears normal. The lip also healed by first intention.

Sudden Death and the Thymus Gland.—Edward Jessop was called suddenly to take charge of a child about eight months old. On his arrival he found the patient dead. The lips were slightly blue and on each cheek was a dusky patch, but the finger nails were normal and there was no other sign of asphyxia. Artificial respiration was begun and persisted in for twenty minutes, but without effect. The infant had been fed from the breast and had been put to bed apparently in perfect health. About fifteen minutes later it was dead. The previous history was negative. The child was always considered to be extremely healthy. It was always noticed to turn on its face to sleep and had a habit of throwing its head back when in its mother's arms. Autopsy showed nothing abnormal excepting the thymus gland. This consited of three lobes and occupied the entire space from the thyroid to the diaphragm. Its measurements were four inches in length, two and three-fourths inches across, and three-fourths of an inch thick, and it weighed two ounces. The trachea was full of half-digested milk. The enlarged thymus may have been the cause of the attitudes which the child assumed. Doubtless these were the positions in which the pressure of the thymus was least felt. In this case there was no flattening of the trachea or evidence of pressure post mortem. The writer declares that there appear to be no symptoms by which this condition can be diagnosed with any certainty during life.

Prognosis in Mental Diseases.—Robert Jones declares that even the most skillful physician ought to speak with caution in the matter of prognosis in mental diseases. No human intellect can anticipate the numberless influences either for good or for evil that may come into play in any case. From the study of various statistics it may be stated that the death-rate among the insane in institutions is greater among men than women. Insanity is a diseased state which shortens life. The insane as a class are marked by considerable physical inferiority and lowered vital resistance to disease. The chances of survival in general are at least six times less than if insanity had not occurred. Insanity is curable in inverse ratio to its duration, and if active and skillful treatment be given within the first month, more than seventy per cent. of the recoveries are sent out cured. After the first year only about ten per cent. recover, and so on, till after the fifth, recovery is exceptional. Summarizing certain statistics, thirty per cent. recover, a small per cent. of whom relapse; thirty-three per cent. die in the asylums within a definite, time, and about forty per cent. remain incurable and eventually die insane. There is doubtless some mental weakness always left after an attack of insanity, and there is no complete and permanent recovery. Most certainly, complete recovery is infrequent. Tuberculosis in its various forms has been credited as one of the most frequent forms of the actual causes of death in insanity. The cases most prone to this affection are those of the depressed type, and those of adolescent dementia. The writer stiongly insists that the tendency to phthisis indicates a degeneration of the consitution and so a lowered resistance to disease. Below the age of seven years, prognosis is absolutely bad, and the younger the patient the worse it is. Imbeciles have a better expectation of life than normal individuals, if cared for in institutions. There are certain signs in the course of mental disease which are favorable to recovery, one of which is normal sleep. Another favorable symptom is the return of facial innervation and the restoration of the natural expression and appearance, as is also the revival of natural affections. Defective habits, sometimes called "gatism," are bad prognostic symptoms. If the cause be a single powerful one, the prognosis is better than if several causes acted together. One cause acting for a short time is more favorable for the patient than a long-continued one. With an hereditary neurosis, recovery is quicker, and with an hereditary taint prognosis as to recovery is better.

Berliner klinische Wochenschrift. December 11, 1905.

Delivery of the Arm and Version.—Apfelstedt descants upon the difficulties often attending the release of an extended arm in performing extraction in breech presentations or after version. The additional time required to overcome this obstacle may be sufficient to rob an already partly asphyxiated child of its last chance of life, or the obstetrician may be placed in the difficult position of having to decide whether or not the danger to the child's life is sufficiently great to justify him in breaking the arm to effect its withdrawal from the uterus. The author believes that an efficient safeguard against the occurrence of this complication may be secured by a prophylactic preliminary extraction of the arm before the version proper. The hand, on entering the uterus, first seeks an arm and draws it down into the vagina, the version is then completed in the usual way, and the operator has the certainty that even should be second arm become extended its extraction will be much facilitated by the absence of the other member from the uterus. The active uterine pressure which after the rupture of the membranes renders it very difficult for any part of the fetus to reenter its cavity will, he avers, be sufficient to insure the arm's remaining in the vagina during the version. The author has made use of this procedure but once, though he found it of great value on this occasion.

The Relation of Toxin to Antitoxin Combinations.—Morganroth, as the result of experiments with cobra venom and antitoxin, comes to the following conclusions: By treating cobra hemolysin with dilute hydrochloric acid at moderate temperatures it may be converted into a modification which no longer possesses the faculty of combining with the antitoxin obtained by the injection of genuine cobra venom, though it may still combine with lecithin to form a lecithid. On neutralization of the acid the modification may return to its original form. This modification of the poison molecule also takes place when it is combined with the antitoxin. Consequently the addition of hydrochloric acid causes a dissociation of the originally stable toxin-antitoxin combination. If at the same time there are suitable quantities of lecithin present the toxin becomes free as a lecithid and thereby permanently loses the capacity of reacting with the antitoxin. In such solutions on neutralization of the acid the poison is found in active form in addition to the antitoxin. Even after the lapse of some time it is possible to recover in this way the poison as lecithid from neutral or over-neutralized mixtures of toxin and antitoxin. The quantitative recovery of the genuine poison may be simply effected by making use of the thermostability of the poison modification. By heating the acidified toxin-antitoxin mixture the separated antitoxin is destroyed, and after neutralization with alkali the total amount of poison with its specific properties may be demonstrated in the solution.

Münchener medizinische Wochenschrift, December 12, 1905.

The Roentgen Leucotoxin in the Blood in Lymphatic Leukemia.—Curschmann and Gaupp describe some experiments on the serum of a patient having lymphatic leukemia who was treated by means of the *x*-ray. Seven treatments were given in sixteen days and caused the leucocytes to decrease in number from 150,000 to 44,000 to the cubic millimeter. This diminution was almost entirely at the expense of the lymphocytes, for the polynuclear neutrophiles underwent a slight absolute increase. Serum obtained from the patient before the *x*-ray treatment was begun was injected into rabbits and found to be without significant effect on the number of leucocytes in their blood. Serum obtained after the seventh treatment, however, when injected into the animals in all instances caused a notable drop in the number of leucocytes, the effect usually being most pronounced from four to six hours after the injection. Serum inactivated by exposure to a temperature of 60° C. for half an hour did not exhibit this leucotoxic property. Experiments were also made *in vitro* by adding the leucotoxic serum to human leucocytes and evidence of the leucotoxic power of the serum was easily obtained. The authors conclude that through the action of the *x*-ray there is formed in the blood of leukemic patients a specific leucotoxin which has an elective action on the leucocytes in the circulating blood of animals, and on the normal human leucocytes *in vitro*. This serum may be inactivated by heating and then loses its leucotoxic properties. The injection of the leucotoxic serum causes an immediate leucopenia which lasts from one to one and a half hours and is probably of chemotactic nature, like that caused by the injection of any foreign serum. This is usually followed by an active hyperleucocytosis which is succeeded four or five hours after the injection by the specific *x*-ray hypoleucocytosis.

Sahli's Desmoid Reaction.—Kühn publishes a series of control observations undertaken to determine the accuracy of the procedure recently devised by Sahli for testing gastric efficiency without the use of the stomach tube. The techique of the method has been described in the Medical Record, May 20, 1905, page 779, December 23, 1905, page 1034, and December 30, 1905, page 1062. Kühn carried out the Sahli reaction in thirty-four cases in which a test breakfast was afterward given and the stomach contents analyzed in the usual way. The results were in each instance thoroughly satisfactory in corroborating the value of the new method, and the author accordingly considers it a reliable addition to the diagnostic procedures in gastric work. It is especially suitable for application by the practitioner on account of its simplicity and the slight inconvenience it causes to the patient.

Gärtner's Tonometer.—Raab considers that the criticisms which have recently been made of this instrument are without foundation, and that not only is it not open to the objections that have been brought against it, but it has the advantage of being the only instrument which makes it possible to measure the capillary pressure. He records a long series of comparative determinations made by means of the Riva-Rocci instrument which show that the Gärtner readings are consistently lower. The Riva-Rocci sphygmomanometer determines the pressure of the heart-aorta district, which is to a large extent dependent on the alterations in peripheral resistance caused by variations in the capillary tension. The author's conclusion is that it is therefore necessary, in order to obtain a satisfactory insight into the conditions of pressure existing throughout the circulatory system, to make observations with both instruments.

Deutsche medizinische Wochenschrift, December 14, 1905

Physiological Wound Treatment.—Esch reviews the considerations involved in the modern theories of inflammation and repair and especially those concerned in Bier's congestion method of treatment. These lead him to the conclusion that the abandonment of the old time antiseptic wet dressing in favor of the aseptic dry dressing was a mistake. It is now being recognized that the various phenomena attending the processes of inflammation are salutary in their purpose and that a rational method of treatment should encourage and not seek to prevent them. The congestion, edema, and assembling of leucocytes that are now known to be important steps in the resistance to infection and the process of repair are encouraged by the aseptic wet dressing. The allegation made against it that it macerates the tissues and furnishes a moist chamber for the development of bacteria is valid only when the dressing is improperly applied, by being too wet. Correctly used, through its congestive action it encourages the natural processes of healing to a greater degree than does the dry dressing, and it is also more effective in relieving the subjective symptoms of the patient.

The Surgical Treatment of Puerperal Pyemia.—Opitz in discussing the value of the ligation of the ovarian and internal iliac veins recently recommended by Bumm in the treatment of puerperal pyemia describes a case in which he employed the measure without benefit to the patient, who died of heart failure shortly after the operation. His procedure differed from that advocated by Bumm in that he excised portions of both ovarian veins but did not ligate the iliacs. So far nineteen cases have been reported in which Bumm's suggestion has been followed, with six recoveries. Inasmuch as Opitz has seen thirteen recoveries take place in eighteen cases in which no operation was done, he considers that discretion is necessary in establishing the indications for the intervention. Bumm recommends the operation especially for chronic pyemia, but he reports a successful case in a patient having acute pyemia. Opitz says that as it is not possible to determine beforehand whether or not a given case will live long enough to become chronic it is better to attempt the operation in those instances in which the prognosis seems unusually grave. Belonging to this class are cases of pyemia following abortion, particularly if criminal, the removal of retained portions of the placenta, and placenta previa. Under these conditions if the outlook seems unfavorable he would recommend resort to Bumm's operation. While Bumm's efforts in this direction have accomplished much in developing the surgical treatment of pyemia, it is not yet time to apply his plan indiscriminately.

Weil's Disease.—Knauth reports six cases of this unusual condition, of which the cardinal symptoms are intense jaundice, swelling of the spleen, and nephritis. The patients were all privates in an infantry regiment. The period of incubation varied between a few hours and

several days, and the source of infection in one instance was ascribed to the consumption of tainted meat, while in the other cases it could not be accounted for. The portal of entry for the infective agent in one case was thought to be through the tonsils, in the others the poison was probably taken into the system through the intestine. The sickness began with a single severe chill or chilly feelings, and muscular pains. The tongue was dry and coated, the temperature elevated, and the facies that of typhoid fever. Later on swelling of the spleen developed and was conspicuous from the third to the fifth day. The pulse was accelerated in proportion to the temperature, a useful differential point distinguishing the disease from typhoid. Jaundice was present in half of the cases, and the kidneys were involved in only two instances. The differential diagnosis includes acute articular rheumatism, influenza, meningitis, and especially typhoid. The prognosis is not invariably good; one of the author's cases ended fatally and in all of the others ten to twelve weeks elapsed before complete restoration to health was secured.

French and Italian Journals.

A Case of Acquired Generalized Telangiectasis in a House Painter.—Mosny and Malloizel report this case. Acquired generalized telangiectasis is exceptional. The writers have found only ten observations of this affection besides the one which they report. They declare that they do not attempt to explain the pathogeny, which is so obscure, of these vascular dilatations. The patient whose history is here reported was a man forty-seven years old. He was a house painter. One evening after dinner he became uncomfortable and suffered from a sensation of heat, especially in his face. At the same time there appeared over the entire subumbilical region a slight swelling and generalized redness; he experienced at the same time intense itching. The redness had disappeared by the next day. Some days later the patient noticed the first appearance of the telangiectasis which he described as developing in the places which he had scratched. From that time these spots had become more numerous and had spread over the anterior surface of the two thighs and the dorsal surface of the left foot. In the last five or six years the spots had not increased. He began to paint in 1869. He had had one clear attack of lead colic twelve years ago. There is no trace of syphilis. The infected region often itches, especially in warm weather. In cold weather the spots become violet in color. The writers have discovered nothing to explain the pathogeny of this curious affection. A cytological examination of the cerebrospinal liquid showed a very feeble lymphocytosis. This liquid was not entirely normal, but contained more albumin than that of an absolutely healthy person. This is an interesting observation. The writers add that in order to prove the reality of the existence of a lesion of the central nervous system, a lumbar puncture ought to be practised at the very time of the appearance of these cutaneous lesions.—*La Tribune Médicale,* November 11, 1905.

Treatment of Cancer of the Larynx.—Cheval speaks of the curative methods in cases of cancer of the larynx as ablation by the natural passages, ablation by thyrotomy, and ablation by partial or total laryngectomy. Among the palliative methods there are morcellation or excision of the fungus growths, tracheotomy—as low as possible—and gastrostomy. The last-three mentioned methods are indicated when the physician has to treat inanition or asphyxia. The laryngoscope admits of an early diagnosis. The writer reserves the palliative treatment for cases which are strictly inoperable. It is important that diagnosis be made early. However limited the extent of the growth may appear, the writer advises total laryngectomy with systematic ganglionic enucleation. However short life may be after laryngectomy, the patient prefers this period to nothing. The writer lays great stress on the importance of these examinations being made by a physician who is capable of using the laryngoscope skilfully.—*Bulletin de la Société Royale des Sciences Médicales et Naturelles de Bruxelles,* July, 1905.

Spontaneous Cure of Morphinomania.—Rochon declares that a large number of physicians have a tendency to see in a morphinomaniac an organism impregnated with the poison which habit has made necessary for its regular functions. They consequently think that this drug cannot be entirely suppressed at once without provoking organic troubles which are sometimes very serious. Rochon reports a number of cases of which the following is a good example: A young man, twenty-six years old, was employed as a clerk. When he was twenty-two years old he had fallen from a horse, after which he suffered from sciatica. His physician gave him injections of morphine to quiet the pain. The patient continued this practice, and finally found that he was not able to lessen the dose. Four years after the habit had become established he was called to the bedside of his dying father, who reproached him for being the cause of his death. In his remorse the young man made a vow to renounce morphine entirely. He made good his promise and felt no ill effects therefrom.—*Journal de Médecine de Paris,* November 21, 1905.

Flies and Cholera.—A. Chantemesse and F. Borel, in speaking of the prophylaxis of this disease, declare that no sick person should be allowed to enter the country. The same measures should be instituted on the frontier railway stations as in the ports. Every patient who arrives should be immediately isolated, and his effects as well as the compartment where he has been should be disinfected. In individual prophylaxis two principles should be observed: the microbe of cholera should not be allowed to enter the organism; but if in spite of all precautions it has found its way into the body it should not be allowed to manifest its presence. In order to attain the first end all food and drink should be carefully examined. Protection against flies should be instituted, especially if defective water closets are in the vicinity. The organism should be put in the best condition of resistance. Every cause capable of bringing on an intestinal trouble should be avoided. If one can preserve intestinal equilibrium he can overcome cholera even though he become infected with the microbe.—*Le Mois Scientifique,* November, 1905.

Radical Cure of Varicocele by the Process of Durante.—Orazio Schifone tells us that in varicocele the object of oeprations is to reestablish venous circulation, the cause of insufficient nutrition and consecutive atrophy of the gland, and to prevent the elongation of the spermatic cord and the descent of the testicle, conditions that are very favorable to the establishment of varicocele. Simple ligature of the ectasic veins has no practical value. Double ligature is insufficient and dangerous, there being a possibility of including the principal artery of the testicle. The method of Durante satisfies all the demands of the operation. He denudes the mass of the veins that are enlarged, assures himself of the relations to the cord and the spermatic artery, passes a catgut thread under a few veins of the pampiniform plexus and ties it. He then passes and repasses the thread among the enlarged veins, drawing up the thread so as to constrict them. The veins are thus suspended just below the inguinal ring. The veins that are least affected are left out of the suture to nourish the tissues. The author has operated on forty-five cases in this way, of which he gives the histories and the results. Recurrences of the trouble are prevented, there are no nutritive or functional disturbances of the gland, there is no fibrous induration left, the neuralgic pains resulting from the condition are relieved the size of the scrotum is lessened. The author has also made experiments on animals which show that by this method the circulation is reduced, but the arteries are not occluded, nor are there alterations of the nerves of the cord nor of the deferent canal.—*Il Policlinico,* November, 1905.

Staphylococcic Septicemia in Typhoid Fever in Children.—Emilio Meynier describes his researches in three cases of typhoid fever in children, in which there was a secondary infection with staphylococcus aureus. In one there was an accompanying pneumonia, in another the staphylococcus infection was concomitant with the typhoid fever, while in the third it followed it in time. Bacteriological examinations were made of the blood, urine pleural pus, etc. The Widal reaction was positive. The infection with staphylococcus may occur at any period in the course of typhoid fever, and its presence will account for the prolongation of the fever and for many relapses. The author considers the bacteriological examination of the blood of prime importance in typhoid; a primary or secondary septicemia may simulate typhoid fever; the reaction of Widal is of equal importance, but, failing this, bacteriological examination of the blood will settle the diagnosis. The abstraction of the small amount of blood necessary gives the child little disturbance, and is not to be considered in comparison with the important results to be obtained. The most careful disinfection of the skin and mucous membranes in the later stages of typhoid fever are of the utmost importance in preventing secondary infection. A germ endowed with slight virulence may become the source of severe infection.—*Rivista di Clinica Pediatrica,* November, 1905.

Spinal Analgesia in the Diagnosis and Treatment of Rectal Diseases.—Neugebauer has found that a greater degree of relaxation of the anal sphincters takes place under spinal anesthesia than when any other mode of narcosis is employed. This fact can very advantageously be utilized if rectal disorders are to be diagnosticated or treated, for the paresis of the muscular tissues greatly facilitates inspection and operation in the district adjoining the sphincters.—*Centralblatt für Chirurgie.*

Book Reviews.

TEXT-BOOK OF ANATOMY. Edited by D. J. CUNNINGHAM, F.R.S., M.D. (Edin. and Dubl.), D.Sc., LL.D. (Glasg. and St. And.), D.C.L. (Oxon.), Professor of Anatomy. University of Edinburgh. Second and thoroughly revised edition. Illustrated with 936 wood engravings from original drawings, many printed in colors. New York: William Wood & Co., 1905.

LIKE all other branches of medical knowledge, anatomy is undergoing a steady accretion in its subject matter, and it is therefore not surprising to find that this, the latest and most highly developed exposition of the science, is a volume of almost 1,400 pages. Both paper and binding are of such excellent quality, however, that the volume does not appear unwieldy, and it lies beautifully flat wherever opened. That a new edition of so extensive a work in a field already well occupied should become necessary in so short a time speaks highly for its intrinsic merits. In its present form it is somewhat enlarged, mainly by the addition of a considerable number of new illustrations. Of these the most important is a set of drawings of the bones, on which the origin and insertions of the muscles are depicted in red and blue respectively. Contrary to the usual custom, these figures are introduced in the descriptions of the muscles, where they properly belong, instead of appearing in the section on osteology, as is commonly the case. The editor states that the sections in which the chief changes and additions have been made are those on embryology, the joints, the muscles, the brain and spinal cord, the genitourinary organs, the lymphatics, and applied anatomy. He also chronicles the death of one of the contributors, Dr. Ambrose Birmingham, formerly Professor of Anatomy in Dublin, whose section on the digestive system has been revised by Dr. Cunningham himself. In the notice of the work appearing in these columns on its first issue its many excellencies of matter and form were pointed out, and there is nothing but further commendation to add to-day. It is in every respect a model, and no more satisfactory treatise on anatomy can be recommended, either for the undergraduate student or as a work of reference for the library shelf.

A TEXT-BOOK OF CLINICAL DIAGNOSIS. By Laboratory Methods. For the use of Students, Practitioners, and Laboratory Workers. By L. NAPOLEON BOSTON, A.M., M.D., Associate in Medicine and Director of the Clinical Laboratories at the Medico-Chirurgical College, Philadelphia. Second edition, revised and enlarged. Philadelphia and London: W. B. Saunders & Company, 1905.

THIS book is written by a teacher of clinical diagnosis who has learned by practical experience what the difficulties of the subject are and what are the needs of the student, and who has been able to meet these wants in a thoroughly satisfactory manner. The book is not one on diagnosis in general, but is rather a manual for the clinical laboratory worker. Special attention, the author states, has been given to outlining in progressive steps the various procedures in clinical technique, but in addition to the detailed description of the various methods of examination, the diagnostic significance of the clinical findings is given. In this second edition, issued only eight months after the first, there are no changes in the text, but a number of subjects are introduced or elaborated in an appendix. Among these are Biff's New Hemogelometer, Ficker's Reaction, the Leishman-Donovan Bodies, Ravold's Test for Albumin, Cammidge's Test for Glycerin, and Cipollino's Test. The subjects of cystodiagnosis and inoscopy are also given more extended consideration. As an example of the strides in the subject of clinical diagnosis which have been made in recent years, it is interesting to note that nearly one-quarter of the entire work is devoted to the blood.

FIFTY AND ONE TALES OF MODERN FAIRYLAND. By F. STRANGE KOLLE, M.D., Author of "The Grown Baby Book," "Pen Lyrics," etc. Illustrated by Flora Sheffield. New York: The Grafton Press, 1905.

THE little folks, for whom this volume is intended, will be delighted with the modern fairy tales here presented to them. We have submitted the book to the judgment and criticism of some eight or ten healthy children, and on the strength of their verdict of enthusiastic approval we feel safe in advising our readers of this recent addition to the small stock of fairy tales. Doubtless other juvenile critics will confirm the favorable opinion of our little friends; and the author is to be congratulated on having accomplished a most difficult task with rare skill.

TEXT-BOOK OF MATERIA MEDICA FOR NURSES. Compiled by LAVINA L. DOCK, Graduate of Bellevue Training School for Nurses. Fourth Edition, revised and enlarged. New York and London: G. P. Putnam's Sons, 1905.

THIS volume has been brought up to date by the incorporation of such changes as were necessitated by the recent Pharmacopœia. In addition to materia medica proper the book contains information, well arranged and accessible, on poisons and their treatment, emetics, hypodermics, serum therapy, and mineral waters; there is a list of the more important new drugs, and a good index. It is well and concisely written, and can be commended to the nurse as a model text-book and a valuable guide. With a common sense which is far from common, the author omits the subject of therapeutics as not being a part of the nurse's study; she also reminds the nurse that it is not her business to prescribe for patients. This omission and advice are both to be commended.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; Assisted by H. R. M. LANDIS, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital. December 1, 1905. Lea Brothers and Company: Philadelphia and New York.

THE present installment of Progressive Medicine contains articles on diseases of the digestive tract and allied organs, the liver, pancreas, and peritoneum, contributed by J. Dutton Steele; on genitourinary diseases by William T. Belfield; on diseases of the kidney, by John Rose Bradford; Joseph C. Bloodgood writes on anesthetics, fractures, dislocations, amputations, surgery of the extremities, and orthopedics; and H. R. M. Landis has a section on practical therapeutics. The most lengthy contributions are those of Drs. Steele and Bloodgood; but all are valuable and, as usual, are clearly and ably written and easy to read. The criticisms supplied by the various writers are often as valuable as the résumés of the papers under discussion. The present number is well up to the high standard that the editors of this quarterly have taught us to expect.

ANATOMY AND PHYSIOLOGY FOR NURSES. By LEROY LEWIS, M.D., Surgeon to and Lecturer on Anatomy and Physiology for Nurses at the Lewis Hospital, Bay City, Michigan. Illustrated. Philadelphia and London: W. B. Saunders and Company, 1905.

THIS book owes its existence to the request of those whom the author has instructed in Anatomy and Physiology during the last few years. It contains chapters on osteology, the muscular, circulatory, respiratory, digestive, excretory, nervous, and glandular systems, the membranes of the body, the organs of special senses, the female organs of generation, and a final chapter on repair and waste, nutrition, animal heat, perspiration, and the power that supports and preserves health. Thus, the ground is covered pretty thoroughly; and though there is room for considerable difference of opinion as to how much anatomy and physiology a nurse should be expected to learn, we have no fault to find with the author on the score of quantity. But with the quality of the work we are not so pleased; in many places the book is indefinite and inaccurate. For example, the author teaches that all nerves take their origin in the medulla and the spinal cord; that the great sciatic nerve supplies the internal and external organs of generation; that the expired air has lost its oxygen; a "second hypoglossal nerve" is mentioned; there is some confusion in the use of the terms arm and forearm. These are only a few of the places where revision is necessary before the book can be recommended to nurses.

TEXT-BOOK OF MEDICAL AND PHARMACEUTICAL CHEMISTRY. By ELIAS H. BARTLEY, B.S., M.D., PH.G., Sixth Edition thoroughly revised with illustrations. Philadelphia: P. Blakiston's Son and Co., 1905.

THE announced aim of the author in offering a new revision of this book is to bring it abreast of the times, to present the various subjects in accordance with established facts and theories. This is a difficult task for a work on physics and medical or physiological chemistry will grow old in the making. Progress along these lines is no less astonishing than the reversion of theories as scientific investigation proceeds. And yet the author has acquitted himself with marked ability. From the older editions of Fowne and Atfield to this work is a mighty stride. The medical student will be really interested if not fascinated in the study of medical chemistry as here presented. It is not necessary to give a detailed review of the many features of this excellent work, from the introduction to a study of the urine which is a most notable and interesting résumé of what is known to date of this important subject. The student as well as the practitioner will do well to familiarize himself with the clinical significance of abnormal urine, for it is doubtless true that this aid to the diagnosis of disease is too little appreciated; many obscure troubles are easily and intelligently cleared up by a comprehensive knowledge of the clinical significance of abnormal urine. Suffice it say that the book can be profitably studied by both student and medical practitioner.

Society Reports.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, Held in Louisville, Kentucky, December 12, 13 and 14, 1905.

Dr. Lewis C. Bosher, of Richmond, Va., President.

Surgical Repair of Injured Nerves.—Dr. J. Shelton Horsley of Richmond, Va., reviewed the work of recent investigators on the histological regeneration of nerves. He alluded to the views of Bethe, and others, who claim that regeneration of a peripheral nerve can take place without central connection. He classified the surgical methods of repair as follows: (1) Simple nerve suture, including all cases where the ends of the nerve are brought into direct contact and sutured, even when nerve stretching or resection of the long bone may be necessary. (2) Flap operations, which were usually unsatisfactory. (3) Nerve bridging. By this term was meant those cases in which a foreign substance was used to bridge over the defect between the ends of a divided nerve. This included not only transplantation of nerve tissue from lower animals, but also *suture à distance*. (4) Nerve implantation or anastomosis. Under this head were included those cases in which the ends of an injured nerve were implanted into a healthy nerve. He reported a case falling under the last classification. The patient had suffered an injury, as a result of which the upper part of the median nerve had been destroyed for two and a half inches and the musculospiral injured in the lower part of the arm, with paralysis of all muscles in the hand and forearm except those supplied by the ulnar. Three months after this the median was implanted laterally into the ulnar. Fourteen months later both flexion and extension had returned to a marked degree. At that time the musculospiral was cut across and implanted laterally into the median. Ten months after the second operation sensation and motion of the hand and forearm had almost completely returned. In discussing several points connected with the case, Dr. Horsley concluded that the extensors must have been supplied through the anterior interosseous branch of the median, because flexion and extension improved simultaneously, and because extension was not interfered with at the second operation, when the musculospiral was completely divided.

Dr. Charles H. Mayo of Rochester, Minn., said one question that interested him more especially was the difference in the ability of repair between sensory nerves and motor nerves, and combined sensory and motor nerves. For instance, about the head, where we had the purely motor and sensory nerves, it was almost impossible to keep a sensory nerve from uniting itself. It would grow for inches and repair itself; but a sensory nerve having peripheral impulses towards the center seemed to lack the power of regeneration like a motor nerve in which the impulse came from the center out. He had taken out the infraorbital, plugged the opening with silver, and for as many as seven years there was no return of sensation in that area, yet within a few months, after operating again, and removing the silver plug, the sensory nerve which had been lying dormant for this length of time would get out, hunt up a partner, so to speak, and go to work. In the case of the motor nerve of the arm, where there were sensory and motor nerves, we would get more rapid regeneration because of the peripheral impulses, and as the sensory nerve of the arm was so much in excess over that of the leg, we would get earlier repair in the surgery of nerves of the arm than we would in the leg.

Dr. Horsley, in closing the discussion, called attention to the point that his patient was of a low grade of intelligence, whose nervous system was not well developed, and the same law applied here as would apply to other similar cases, namely, the lower the type of organism, the more rapid and more active the repair.

Foreign Bodies in the Esophagus.—Dr. Stuart McGuire of Richmond, Va., said that the diagnosis of foreign body in the esophagus was based on the history of the case, the external palpation of the neck, the passage of an esophageal bougie, and finally by the use of the *x*- ray. The character and location of the foreign body being determined, the practical question was how to remove it. If it was round or smooth, efforts should be made to extract it with forceps and probangs, or to make the patient eject it by swallowing masses of partially masticated food and then vomiting. If it were small, it might seem wise to endeavor to push it into the stomach. None of these expedients should be tried when the foreign body was pointed, sharp, or angular. Under modern surgical technique, an open operation was the safest procedure. There were two means of approach, one by an external esophagotomy, the other by a gastrotomy, and the selection of the method would depend on the location of the impaction. If it was opposite the cricoid cartilage, an esophagotomy should be done; if it was below the level of the supraclavicular notch, then gastrotomy should be performed. As an illustration of the operations of esophagotomy and gastrotomy, he reported two cases. In one, the patient, aged ten, while playing with a glass stopper, put it in her mouth and swallowed it. It lodged in the esophagus opposite the cricoid cartilage and produced complete obstruction. The foreign body was removed by an external esophagotomy. The second case was that of a baby, aged seven months, who, while being dressed, seized an open safety-pin and put it in its mouth. The mother, in her efforts to remove it, pushed it first into the fauces and then into the esophagus. The pin was removed in this case by a gastrotomy.

Dr. J. Wesley Long of Greensboro, N. C., narrated the case of a forty-six-day-old infant who had swallowed an open safety-pin; the pin lodged in the esophagus opposite the two cricoid cartilages. A radiograph, however, showed that the point of the pin was below the arch of the aorta. It produced constriction of the esophagus where the left bronchus crosses it, and the pin was removed by an external esophagotomy without any shock. He thought there were some cases in which this operation was preferable to gastrotomy.

Dr. W. S. Goldsmith of Atlanta, Ga., mentioned the case of a patient who had swallowed the concave part of a dental plate, which lodged in the esophagus and was retained there for a period of four months. At the end of this time the patient was very much emaciated and weak. After locating the foreign body, efforts were made to extract it with forceps, but this could not be done. It then occurred to him to try Bull's method of attaching a series of sponges to a long silk ligature and this to an esophageal bougie. The latter was passed through the opening in the stomach and out through the mouth, leaving in position the series of sponges. It was then a simple matter by a few sweeping movements backward and forward to push the foreign body into the stomach and extract it through the gastrotomy opening. The foreign body was of such consistency that the *x*-ray was of no aid.
was of no aid.

Dr. H. A. Royster of Raleigh, N. C., reported the case of a child, two years of age, who, two weeks previously to his seeing the case, had swallowed the wheel of a tin toy wagon. The child was able to swallow liquids, but not solids. During this time it subsisted on milk and liquid food. He used a medium-sized, shotted, semi-elastic bougie for the purpose of an examination; this passed into the esophagus met with some resistance, after which he was enabled to pass it further without obstruction apparently. After applying a mouthgag he was enabled to extract the foreign body with an esophageal forceps. The foreign body lay transversely across the esophagus.

Dr. J. Shelton Horsley of Richmond, Va., said if a foreign body could not be removed by ordinary means, no time should be lost in resorting to early operation. He reported the case of a child who had swallowed a toy camel which lodged a little below the level of the larynx. He

tried to extract it by several different methods, but was unsuccessful. He saw the child on the fourth day after it had swallowed the foreign body, did an esophagotomy, and removed it with comparative ease. The esophagus was injured and gangrenous. Septic symptoms developed, and the child died on the fourth day following the removal of the foreign body. He thought the child's life might have been saved by an earlier operation.

Dr. Charles M. Rosser of Dallas, Texas, reported two case of foreign body in the esophagus. In one, the foreign body, an ordinary pin, was located by the *x*-ray, but could not be removed by ordinary means. Two-thirds of the pin was buried, but with the aid of the fluoroscope the pin was caught by its head, and extracted with forceps. In the other case, that of a child, a nickel was located within two or three inches of the cardiac end of the esophagus. Gastrotomy was performed, and the foreign body extracted. The child lived about six or eight hours, then died, apparently without shock.

Dr. Rufus B. Hall of Cincinnati, O., reported the case of a child of a physician, five months old, who swallowed a safety-pin an inch and a half long. It remained in the esophagus for a time, but at the end of twenty-four or thirty-six hours the symptoms caused by its presence disappeared. The child was able to take the breast and thrived well. An *x*-ray picture was taken which disclosed an open safety-pin in the pyloric end of the stomach. The parents declined an operation for its removal until unfavorable symptoms should develop. Severy *x*-ray pictures were taken, but the child did not develop any unfavorable symptoms referable to the presence of the safety-pin. When the child was twenty-six months old it passed the pin by the natural route. The child was now seven years of age.

Dr. W. D. Haggard of Nashville, Tenn., related the case of a child, eighteen months old, who swallowed a pin, the head of which was as large as a cherry-seed. The child developed cough, and the presumption was that the pin had lodged in a bronchus. An *x*-ray picture threw very little light in regard to the presence of the foreign body. The pin appeared to be in a bronchus, with its head down and to the left. The child had little or no pulmonary symptoms to justify an operation. At the end of ten days another *x*-ray picture was taken, but the symptoms were so slight that operation was deferred. Four days later another radiograph was taken, which failed to locate the pin, and shortly after this the child passed the pin by the natural route.

Dr. McGuire, in closing the discussion, said no hard-and-fast rules could be laid down as to whether esophagotomy or gastrotomy should be done in a given case. Of the two operations he preferred to do gastrotomy. It seemed easier and the after-treatment was simple. If it was equally applicable, it was the method to be adopted.

Gallstones in the Cystic Duct.—Dr. L. H. Dunning of Indianapolis, Ind., presented a method which he had employed in one case which greatly facilitated the pressing backward into the gall-bladder of a stone impacted in the cystic duct. In this case the gallstone was lodged in the cystic duct in front of a small stricture. After making all the efforts he deemed prudent to press the stone backwards into the gall-bladder without success, he then unsuccessfully attempted to dilate the stricture with the finger-tips and later with forceps. One of his assistants suggested that they could better dilate with the forceps if they could see the stricture. The walls of the gall-bladder were elastic. The liver had been turned upwards, so that the gall-bladder was near the surface. The opening in the gall-bladder through which he had been working was enlarged a little, and then the stone was steadied and held against the stricture by an assistant. The fundus of the gall-bladder was pushed forward toward the strictured entrance into the cystic duct. They so far succeeded as to bring the opening in the wall of the gall-bladder directly opposite to the strictured opening. They then tried to introduce the forceps tips, but failed. Picking up a pair of probe-pointed scissors curved on the flat, he gently worked the point through the fistula and opened the scissors; this did not dilate the opening sufficiently, so the edge of the fistulous ring was snipped slightly in two or three places, when they were able to dilate the fistula so as to permit the easy exit of the stone. The operation was completed in the usual way. A rubber tube was fastened in the gall-bladder and that viscus anchored to the fascia. Before they had finished the operation a little bile had flowed into the gall-bladder. Two or three ounces of bile was discharged from the tube daily; at first it was dark and thick, but gradually approached the normal color and consistency. The patient made an uneventful recovery, and had but little further pain or soreness in the gall-bladder region. He thought the procedure adopted in this case might be found of service in others. It was not applicable to cases in which the gall-bladder could not be brought near the surface, or where the gall-bladder was thickened by inflammatory deposits. In the author's experience in operating upon ninety-three cases of gallstones, there were ten cases of stone in the cystic duct requiring considerable effort to dislodge them. In two of the cases early in his experience the stones were crushed and portions left behind, subsequently giving so much trouble that cholecystectomy was finally performed.

Common Duct Obstruction.—Dr. J. Wesley Long of Greensboro, N. C., stated that, as compared with gallstones in the gall-bladder, this condition was many times more serious. He quoted the as yet unpublished statistics of the Mayo clinic, where there had been more gallstone operations done than in any other clinic in the world, showing that in simple gallstones in the gall-bladder the mortality of operation was less than one-half of one per cent., while the mortality in operations for common duct obstruction ranged from 11.9 per cent. in benign cases to 40 per cent. in malignant cases. These facts were brought out to emphasize the prophylactic value of operating while the stones were yet in the gall-bladder. Touching the etiology of common duct obstruction, he took the position that practically all cases were due either to stones or to malignant growths which themselves were caused by the irritating presence of stones. Gallstones might exist in the gall-bladder for a long while without producing symptoms, but once in the common duct, not only pronounced symptoms, but many serious complications arose. The mortality in these cases was due to the complications, the cholemia, infection, inflammation, and exhaustion from hemorrhage at the operation. He emphasized the fact that common duct obstruction could be treated only by surgical methods. After removal of the obstruction, the first consideration was drainage, since it was imperative to overcome the infection, and, second, that no operation must be deemed finished until the patency of the opening into the duodenum was assured. Attention was called to the importance of not removing the gall-bladder in the operation of choledochotomy, since stones occasionally reformed in the common duct and in these cases the gall-bladder served for drainage. A number of cases of operation for common duct obstruction occurring in the hands of Dr. Long were reported, showing the profound disturbance caused by the stones, and the great relief afforded by their removal. In one case it was noted that the stones had ulcerated through the side of the gall-bladder and into the common duct—an exceedingly rare occurrence.

Gangrene of the Gall-Bladder; Rupture of the Common Duct; a New Sign.—Dr. Joseph Ransohoff of Cincinnati, Ohio, reported a case of gangrene of the gall-bladder in a male patient, aged 21, with recovery following operation. The second case was one of rupture of the common duct with an unusual sign. Operation was done, followed by recovery of the patient. Although the cases differed in many important points, they had enough factors in common to warrant their consideration together. In each of them a rapidly developing peritonitis made an operation impera-

tive as a vital indication. In each the operation revealed a condition which to the naked eye at least had all the earmarks of a peritonitis, which might speedily cause death. In one there was an unruptured but gangrenous gall-bladder, the contents of which were proved to be sterile; in the other there were large quantities of free bile in the peritoneum. He called attention to a sign which was noticed in the case of ruptured duct before the incision was made, and one to which he believed attention had not been directed. It was a localized jaundice of the umbilicus. Although a single case was not usually sufficient to warrant the assumption that something new had been observed, this feature was so marked that he could not refrain from believing that further observation would give to this localized jaundice some value as a sign of free bile in the peritoneal cavity. In the case presented this feature gained in interest as the staining of the subperitoneal fat with bile was observed in the incision through the abdominal wall. The jaundice was doubtless purely the result of imbibition. It made itself manifest first in the integument of the navel, because this part was thinner than the rest of the abdominal wall. Total gangrene of the gall-bladder had, to his knowledge, not been observed, except in the case presented, as an affection independent of gall-stones. Total gangrene of the gall-bladder was rare. In the case reported a most careful search failed to reveal the presence of a stone.

Experience with Downes' Electrothermic Angiotribe in Pelvic and Abdominal Surgery.—Dr. J. Wesley Bovée of Washington, D. C., had employed these angiotribes in 203 abdominal and 27 vaginal operations These 230 operations had been hysterectomies and panhysterectomies, removal of the uterine appendages by the vaginal route, removal of the same structures by the abdominal route, removal of the vermiform appendix, the spleen, the kidney, parovarian cysts, portions of the intestines, etc. The instruments were described in detail; also the technique of application. In these 230 cases he had had two of hemorrhage subsequent to operation. He could not believe the method of hemostasis employed was responsible in either instance. In the first, abdominal panhysterectomy was done for severe suppurative inflammation of the appendages of a very feeble and emaciated woman. Three weeks later, after being allowed to walk about for two days, she was seized with hemorrhage from the bowels, stomach, and vagina. A mass was found in the pelvis; her temperature became elevated, as was the pulse rate. The hemorrhage continued at intervals for two weeks without improvement, and then the abdomen was reopened without any form of anesthesia, even local being refused by the patient. A large amount of blood coagula was removed from the peritoneal cavity, vaginoabdominal through-and-through rubber tube drainage was installed, and thorough irrigation of the peritoneal cavity, with salt solution, was done after separation of multiform adhesions. Later feces and urine escaped by both ends of the drainage tract. Persistent irrigation and feeding cured her malady and she was a robust woman to-day. In another, two weeks after vaginal hysterectomy for fibromata, the patient had a sharp vaginal hemorrhage after walking a little more than on previous days. An examination with a Sims speculum revealed a malodorous discharge from the left lateral fornix of the roof of the vagina. The temperature was elevated about one degree. Daily irrigation for a week ended the trouble. In both cases he was confident latent mild infection was responsible for the hemorrhage. In no other instance had hemorrhage occurred, and he had the simplest and most perfect faith in the hemostatic properties of the instrument. The advantage of the electrothermic angiotribe of Downes in pelvic and abdominal surgery seemed to be a more reliable hemostasis than by ligation; freedom from hemorrhage during operation; the ease of its application in locations in which the use of ligatures would be very difficult and uncertain; the greater security against dissemination in radical operations for malignant disease; the ability to sterilize unclean areas before suturing, as in intestinal and appendical surgery; lessening of the tendency to the formation of postoperative adhesions; the increased speed in operations, such as removal of the uterus, the appendages, or the vermiform appendix, and the greatly lessened amount of pain following operation. The disadvantages were the danger of accidental injury of the bladder, rectum, or ureter, the necessity of great precision in its employment, and the special care necessary to keep the paraphernalia in good working condition.

Dr. Andrew J. Downes of Philadelphia, in speaking of his instruments, stated that for four years he had not used a ligature except in the case of a woman upon whom he operated for extrauterine pregnancy, and who was moribund at the time. He had performed intestinal anastomoses and gastroenterostomies with his instruments; other surgeons had removed gall-bladders, kidneys, etc. Personally, he had done four or five hundred hysterectomies with them, while other surgeons had performed from sixty to seventy hysterectomies with them. He did not think hemorrhage in the two cases reported by Dr. Bovée could be attributed to the use of his method.

Dr. Charles P. Noble of Philadelphia had used the Downes instruments a number of times in cases of removal of the uterus for cancer, and said they were a great advance in this operation. They possessed a number of advantages over the application of the ligature. The chief advantage of the clamps over the ligature was that after the uterine arteries were tied on each side, when one came down to the vaginal plexus, which was the most troublesome part of the operation when using the ligature, the veins were apt to leak and flood the field, requiring a number of ligatures to secure hemostasis around the cut vagina. If these instruments were used, the field would be perfectly dry. There was no trouble from hemorrhage. From the standpoint of recurrence of cancer, the instruments had not been used long enough to give figures as to results; but one could believe from the work of Byrne that much better results could be obtained with the aid of these instruments than with ligatures, etc.

Dr. Howard A. Kelly of Baltimore said he saw Keith of Edinburgh, in 1887, remove an ovarian tumor with Skene's instruments; but those instruments were not satisfactory, and when Dr. Downes brought out his instruments he procured a set of them and had found them of service, with the exception that he had not been able as yet to install a satisfactory plant in the Johns Hopkins Hospital for their use. While the Downes instruments were practical and useful in surgical work, he thought if surgeons exercised more care as to the character of ligatures they used daily, it would limit the use of the Downes method of instrumentation. He referred to the importance of using fine silk ligatures which controlled bleeding from large blood-vessels and were practically innocuous.

Operation for Large Rectocele.—Dr. George H. Noble of Atlanta, Ga., presented the technique of an operation which was intended only for large rectocele. Small rectocele was relieved by the ordinary perineal operation. In operation for a large rectocele not infrequently there were more or less tediousness, loss of blood in the denudation, and certain objections to puckering the overstretched and distended tissues together and forcing them into the rectum. Furthermore, there were unsatisfactory results by infecting the strong and resisting rectovaginal septum. This operation was presented for the purpose of overcoming those objections. In the technique it would be observed that the rectocele was actually resected, and that the strong or normal rectovaginal septum above the weak occluding point was drawn down to the level of the levator ani muscle and securely anchored. (1) A thorough dilatation of the anus and recleansing of the rectum. (2) Denudation of a wide collar, as it were, the ring around the neck of the rectocele, beginning high up in the vagina and extending

near to the promontory of the rectocele. It was unnecessary to remove the mucosa over the last point mentioned, as it was cut away in the resection. By proceeding with the denudation from within outward, the veins of the recto-vaginal septum were cut through at a high point and secured with compression forceps, and the necessity of repeatedly cutting the same vessels in the process of repairing the wound was avoided. (3) Two fingers were placed upon the promontory of the rectocele, carried into the vagina and out through the anus, forcing the rectocele ahead of them, and in this way completely everting it through the anus. It was seized with a pair of forceps at the point where it protruded and was gradually drawn down step by step until the lax portions were secured and a feeling of tenseness was felt. If in drawing the anterior rectal wall down the normal parts of the rectum did not come as low as the levator ani, the rectum should be liberated by dissecting it from the vagina, which would permit of further descent and allow all the overstretched tissues to project beyond the anus. (4) A light pair of compression forceps was then placed upon the neck of the rectocele just external to the anus for the purpose of holding it in position. (5) Two sutures, preferably medium sized kangaroo tendon, were passed through the unruptured portion of the perineum close to the sphincter ani muscle after the manner in which Emmet inserted his tension sutures in perineorrhaphy. These two sutures in passing across from side to side should take up the prolapsed portion of the anterior wall of the rectum. When tied, they closely approximated and anchored sound or healthy rectum to the levator ani muscle and rectal vessels in the deep pelvic fascia. (6) The vaginal side of the wound was completed by doing perineorrhaphy. The protruding rectocele was amputated about three-quarters to an inch external to the clamp, and its edges closely sutured with continuous suture of catgut. The case was treated then as an ordinary perineorrhaphy, except that a wet soft dressing was placed over the protruding stump. The stump retracted within the anus in a week's time, and took care of itself. The author reported five cases, in which he did this operation, with very satisfactory results.

Starvation and Locked Bowels for from Ten Days to Two Weeks.—Dr. Howard A. Kelly of Baltimore offered, for a more extended trial in other fields as well, a method of after-treatment which he had used in some fifteen cases for the most part in complete tears of the rectovaginal septum. The treatment consisted in two parts—first, a very limited diet for from ten to fifteen days; and second, the locking up of the bowels during this period. The food was limited to albumin and water, nothing being given the day following operation, and but one dram every three hours in the second day, and increasing this a dram each day until the patient was taking four drams every three hours. In this way the patient was fed in all, in a period of ten days, not quite three pints of albumin and absolutely no other food. One patient was continued for fifteen days on this diet and without evacuation. At least two very frail patients had been treated in this way. When the evacuation took place, two drams of licorice powder was given and in some cases an oil enema, and the passage was secured with the patient lying on her side so as to avoid any straining. In no cases were there any scybala, nor was there any difficulty with the evacuations. Dr. Kelly thought this starvation plan of treatment might have a wider range of utility in treating dyspeptics and cases of hysteria, as well as in all kinds of plastic operations on the intestinal tract.

(*To be continued.*)

Aluminum instruments should not be boiled in soda solution, like other instruments. They are to be sterilized by boiling in plain water or by passing them through an alcohol or Bunsen flame.—*American Journal of Surgery.*

THE PRACTITIONERS' SOCIETY OF NEW YORK.

One Hundred and Ninety-ninth Regular Meeting, Held on December 1, 1905.

The President, Dr. T. Mitchell Prudden, in the Chair.

Exhibition of Patients and Casts of Cases Treated by Radium.—Dr. Robert Abbe presented eight patients and numerous colored casts of cases from many treated by him during the past two years to illustrate definite, tangible, and lasting results from radium treatment, often following a failure of the Roentgen rays. To show the scope of its usefulness, there were also shown cases of epithelioma, lupus, chronic warts, and submucous hyperthropic gland inflammations.

The first patient exhibited was a man, 45 years of age, who had had for five years a group of hot, burning and itching, red, lupus-like masses in the center of each cheek, about one inch in diameter, consisting of a conglomeration of tubercular and scaly, but not ulcerated nodules. These were so distressing that he frequently had to leave a hot room, or in summer go into the open air for relief. In addition to this, they caused much disfigurement. Five applications of strong radium in glass tubes were made at intervals of a week, for one-half hour or one hour each time, until a considerable radium inflammation was established, following which there was a rapid subsidence of thickness, leaving behind a healed, atrophic skin which had remained during the past year and a half without causing itching, redness, or burning. In other words, a radical and permanent cure had followed.

The second case was the larger of two cases of epithelioma of the ear reported in the Medical Record of August 27, 1904, which were cured by a few applications of radium, and had since then remained absolutely cured, with a fine, white and unnoticeable cicatrix. This cure had existed a year and a half.

The third patient was of the same type. The disease had existed eleven years, spreading from the upper rim of the ear, and had been operated on by the knife, with skin grafting, as well as by caustics and the curette until almost the upper half of the ear was gone. The disease had subsequently spread to the scalp and periosteum, and, excepting for short respites, it had been continually in evidence for eleven years. Two strong specimens of fifteen centigrammes of Curie radium (300,000) in thin glass tubes, were laid upon the sore for an hour five times during a single week. The sores improved in appearance within five days, and rapidly healed, so that in a month there were only two very small points left unhealed. These closed soon afterwards, and a soft cicatrix covered the entire cartilage, and had retained a normal, healthy appearance, as now shown, during the six months since it healed.

The fourth case was one of the same type of slow-growing epithelioma below the left nostril, which, during seven years, had enlarged until it had eaten away the ala nasi and part of the columna, and descended on the lower lip a full finger's-width until it involved the vermilion border. This entire surface was deeply ulcerated, and had thick, raised edges. A portion was taken for microscopic study, and found to be typical epithelial cancer (Dr. F. C. Wood). The patient was a woman of 75 years, and dreaded a surgical operation. The treatment consisted in laying upon the ulcerated surface several strong radium tubes. It was thus rayed for one hour at a time, seven times in ten days. Then a red zone of radium inflammation, a quarter of an inch wide, surrounded the disease, with no sensation to the patient, and retrograde changes showed in the growth. The raised margins began to flatten, and the foul red ulcer stopped secreting pus and was covered by a gray lymph. During the third week cicatrization had begun on all sides. During the fourth week all appearances of disease had disappeared, and a simple healing ulcer remained, of about a

third the original area. At the time of exhibition, the fifth week, the sore was nearly healed. (One week later, the patient returned to her home in a distant State with a healed sore and soft cicatrix.) In connection with this case, colored plates were shown to demonstrate the stages of healing. The treatment that had been previously resorted to in her case had been curetting, caustics, ointments, and the Roentgen ray. The latter had been given for many weeks by a competent man, with no apparent change. The specimens of radium used to cure this case were four in number, in glass tubes, as follows: Ten centigrammes (Curie), 300,000; five centigrammes (Curie), 300,000; twenty milligrammes (Curie), 200,000; ten milligrammes (German), 1,000,000.

The fifth patient shown was a remarkable case of sarcoma of the lower eyelid, who had been presented to the Society at a previous meeting when half cured. The tumor was a solid purple mass in the right lower eyelid, occupying more than half the entire breadth of the lid. It grew half an inch down the surface of the skin, and bulged well on the mucous membrane throughout its whole breadth. The ciliary edge was entirely lost in the mass, and no eyelashes grew from it. It had existed for a year, and had been under the close watch and careful study of Dr. Peter A. Callan, at the Eye Infirmary. A portion had been removed for miscroscopic study, and had been found to be round-celled sarcoma. Roentgen-ray treatment had been well and faithfully tried, with no arrest of or change in the growth. Dr. Callan had asked whether it would be worth while to try the effects of radium before an operation should be undertaken, and had temporarily placed the patient under Dr. Abbe's care. Three of the same radium tubes were placed upon the growth, the eye being protected by a thin lead plate, enveloped in gutta-percha tissue. Plaster-of-Paris casts were taken before and during the course of treatment, to insure accurate demonstration. Four rayings were made of one hour each during one week. A rapid change in the growth was then noficed, and no further treatment was given. Retrograde changes went on so fast that the difference could be noticed from day to day. In four weeks the growth had wholly disappeared, excepting a trifle of grayish thickening on the mucous membrane, and two small, bluish-black spots at the mucocutaneous junction, which, however, were in apparently normal skin. Strangest of all, the sharp edge of the lid contour was perfectly restored as the great tuberous mass subsided, in which all semblance of a lid had been lost. During the five months after the disappearance of the growth, the eyelid retained its appearance of perfect health. The patient then noticed a small, flat, polyp-like growth inside the lower lid, which popped up in front of his pupil one day, and which was subsequently snipped off by Dr. Abbe. It had a small pedicle on an apparently healthy base at the site of the Meibomian glands. Microscopic examination of this showed it also to be a sarcoma, rich in cells, with slight stroma, some of the cells showing mitoses. Nevertheless, to all appearances, the eyelid, inside and out, had the appearance of health.

The sixth patient was the lad with a rapidly growing giant-cell sarcoma of the lower jaw, whose case had been previously reported (Medical Record, August 27, 1904, and who had been presented to the Society at the very beginning of treatment. It was cured by fifteen severe treatments of radium, and remained cured after nearly two years. The teeth were solid and the jaw strong. This case was specially interesting because attention was called by one of the members at the time to the involvement of submaxillary lymphatics near the tumor. These disappeared as the tumor retrograded and ossified, and had never since been found.

The seventh patient illustrated the infallible effect that radium produced on warts of the ordinary type in causing them to disappear. One application was usually sufficient, and they dried up and fell off in about a week. Casts were shown where the wart was a distinct blemish, as on a young lady's lip, and a large one on the outer side of the little finger of a young lady who had for two years submitted to electrolysis and Roentgen-ray treatment in Paris and by American physicians without cure. This was caused to disappear promptly and permanently (six months had now elapsed) by two applications of an hour each. The patient presented, however, showed a much more obstinate and larger wart of two years' growth, covering the entire middle knuckle of the middle finger. It had entirely come away under the use of radium, but two small recurrent spots had required a little more treatment after three months.

The eighth patient showed a rare form of glandular disease of the upper lip. For seven years this man, now 25 years of age, had been greatly annoyed by a persistent tumefied and peeling and fissured condition of the upper lip. Under the mucous membrane could be seen small, yellowish miliary bodies (100 or more), distributed singly and in groups along the middle of the red surface of the upper lip, from one side to the other. These seemed to represent muciparous follicles, chronically inflamed. Dr. George T. Elliot, who had referred the patient to him, regarded them as aberrant sebaceous follicles. The condition had been assiduously treated by able men here and abroad, including Unna, in Hamburg, and Lassar, in Berlin, with no mitigation during seven years. Inasmuch as it represented a type of hypertrophic glandular inflammation, radium was applied to one-half the lip for the purpose of contrast, and with the hope of supplanting the diseased condition by one of radium excitation, in the belief that a substitutive inflammation of a different quality and grade, such as radium induced, might cure the condition. Two applications of fifteen minutes each of one tube of ten centigrammes of radium (300,000), laid on the tender skin of one-half the lip, had already caused a total disappearance of the miliary bodies, and produced a more normal condition of that half than had existed for a long while. Only a fortnight had elapsed, however, since radium treatment was undertaken, and the case could only be reported as under observation, to be shown again later.

Dr. George L. Peabody, in discussing the cases shown by Dr. Abbe, said the effect produced by the radium seemed more like the work of a fairy godmother than anything else that he had ever seen in therapeutics.

Dr. Joseph D. Bryant said the patients and casts just exhibited were the best demonstration he had ever witnessed of the potency of radium therapy. There seemed to be no question that the rays had exerted a decided effect on these various growths. There were certain features in connection with some of the cases that were worthy of special attention, particularly the case in which the ear was involved. It was a well-known fact that it was difficult to eradicate an epithelioma or other malignant growth of the ear by the knife or any other method without producing a decided deformity. In the case Dr. Abbe had shown, however, the disease was apparently absolutely removed, leaving the cartilage intact and showing the characteristic features of normal cartilage. The destruction of warts with radium suggested the probability that it might exercise an equally strong influence on structures that were dissimilar. In the case of the epithelioma of the left nostril there still remained, apparently, a suspicious area of hardening, indicating, perhaps, that the cure was not complete, and the final outcome in that instance would be interesting. In the case of sarcoma of the lower jaw, which was first shown about two years ago, the cure was apparently complete, and the submaxillary gland that was at that time enlarged, and which was probably due to irritation, had disappeared.

Dr. Abbe, in reply to a question, said he had given the radium treatment a trial in two or three cases of cancer of the cervix uteri. In one case, which was pronounced an epithelioma by Dr. F. C. Wood, the radium tube was inserted into the cervix on two occasions, and left there

for about twelve hours. This set up a severe degree of inflammation of a type peculiar to radium action. The cervix became swollen and firm, as if lymph infiltrated, and there was a free discharge of the cervical mucus and of a thick gray lymph secretion. When the patient was again seen, several months later, there was still little or no thickening of the cervical mucosa, and no indication of malignant disease. A section of tissue was again removed and submitted to Dr. Wood, who reported that it showed normal tissue only. The patient had thus far remained free from a recurrence. In another case, where the disease of the cervix was so extensive that an amputation or other operation seemed useless, he curetted away all diseased tissue until firm, tough uterine structure remained, and on the following day placed three strongest radium specimens in the place, which he left for twenty-four hours. The case had been followed for six months by the attending physician. In a case of rectal carcinoma in a very stout woman, a laparotomy was done, revealing a scirrhus of the gut, about eight inches above the margin of the anus. As a resection was deemed inadvisable, the wound was closed. The stricture was then slightly dilated from below, and the tube of radium inserted into the center of the tumor on two occasions, being left there over night. Rapid improvement followed, and with the exception of a small remaining stricture, the woman was in excellent health and had good movements. Good-sized bougies were easily introduced. Of course, the ultimate outcome of the case was doubtful. Dr. Abbe said the only explanation he could give for these effects of the radium was that in some way it restored the vital energy of the diseased or degenerated cell, and produced a retrograde process in the abnormal tissue. In reply to a question as to what percentage of recurrences he expected in the cases where he had applied the treatment, the speaker said that would probably depend upon whether enough had been done; whether the treatment had been carried out sufficiently long. In several cases, the tendency to recurrence was promptly checked by further application of the radium.

Some Clinical Features of Spasmodic Asthma.—Dr. A. Alexander Smith, who presented this paper, said that he would consider only what was ordinarily recognized as spasmodic asthma, and would refer only incidentally to the asthmatic attacks that might be associated with cardiac or renal disease. One hardly knew whether to call asthma a symptom or a disease, and at the very outset we were met with the fact that as yet pathologists had failed to give any satisfactory explanation of the underlying pathological changes in spasmodic asthma, while autopsies revealed only the results of the long-continued action of asthma. We accepted the view, which could only be a theory, that it was due to some as yet undiscovered disturbance in the nervous system, either central or peripheral, which still defied satisfactory explanation. Was the manifestation due to a contraction of the circular muscular fibers of the bronchial tubes? Was it a spasm of the diaphragm? Was it a vasomotor paresis? Was it a bronchiolitis exudativa, as claimed by Leyden? Had the Charcot-Leyden crystals, so often found in spasmodic asthma, to do with the etiology, or were they simply crystals which were produced in the course of an attack? Were the Curchmann's spirals cause or effect? Were the asthmatic manifestations a reflex? Were the pulmonary symptoms merely a local manifestation of irritation of some other part of the body? Was the starting point of such irritation nasal, gastric, intestinal, uterine, ovarian, or in the skin?

The contradictory nature of spasmodic asthma was shown under no circumstances better than the influence displayed by a change of locality. The fact was familiar to all that the change from one house to another, from one floor to another, from one street to another, from one side of the street to the other would often change an attack of asthma. He recalled the remark of the late Dr. Alonzo Clark that "A man may have asthma in New York, and be free from it in Hoboken." He mentioned the case of a young physician in this city who was free from asthma while in New York, but invariably had an attack when he went to the Adirondacks. He had another patient who suffered from attacks of asthma in New York; when they became intolerable he went to Pittsburg, and within forty-eight hours, in the midst of the smoke and soot and dirt of Pittsburg, his asthma entirely ceased. The direction of the wind, in connection with asthma, also illustrated the contradictory nature of the condition. The majority of asthmatics were rather more comfortable when the wind blew from the eastern quarter; but let it veer to the west, particularly to the northwest, with clear and dry weather, and asthmatics were apt to have their symptoms decidedly aggravated. While it was claimed by many observers that hay asthma and spasmodic asthma were two separate and distinct affections, he had seen so many cases of spasmodic asthma in which there was a history of the first attacks manifesting themselves as hay asthma, that he was inclined to think that there was a more decided relationship between hay asthma and spasmodic asthma than was ordinarily recognized. There was perhaps in all these cases the same underlying condition of the nervous system, which predisposed the patient, under different existing conditions, to attacks of one or the other.

The contradictory nature of spasmodic asthma was further shown by the results of treatment during the paroxysm, or in the interval between them. Measures that claimed to relieve were numerous, but it had frequently been the speaker's experience that measures which relieved some cases failed in others; and even in the same case measures which relieved at one time failed at another. A full opiate, given preferably as morphine by hypodermic injection in conjunction with atropine, would frequently cut short a paroxysm. It had many objections, however, and the necessity of repeating it and the consequent danger of the contraction of the habit made it undesirable in the majority of cases. The inhalation of small quantities of chloroform or ether sometimes gave relief, but the effects were very evanescent. Belladonna, another much vaunted remedy, in his experience brought relief only when it was pushed to the point of producing very unpleasant symptoms. He had occasionally seen a paroxysm cut short by the administration of full doses of quinine—twenty grains or more. Stramonium, best used in the form of cigarettes and the smoke inhaled, sometimes gave satisfactory relief. His experience with the so-called nauseant remedies had usually been such as to produce marked disturbance of the digestive system, with questionable beneficial results. The inhalation of a few drops of nitrite of amyl would sometimes afford relief. The most useful of the diffusible agents was nitroglycerin, administered in doses of 1-100 grain, and repeated at varying intervals of from one-half to two hours. He had faithfully tried the so-called breathing exercises, but confessed his great disappointment in the result. The use of a spray of three or four per cent. cocaine solution in the nostrils would often give relief, but its effects were very evanescent, and with this remedy, as with the morphine, the danger of acquiring the habit should not be lost sight of. The inhalation of oxgen gas, or rather a combination of nitrogen and oxygen, as it was found in the market to-day, would produce a certain amount of relief in some cases. During the past two years he had used adrenal extract in spasmodic asthma, and fairly satisfactory results were obtained in some cases by its application as a nasal spray in the strength of a 1-1,000 solution. Used internally, it had not produced satisfactory results, and his experience with its hypodermic use was limited. Ofttimes, agents which produced sleep modified the paroxysms, and brought great comfort to the patient. The best agents he had found for that purpose were paraldehyde and chloralamide, which seemed quite

free from depressing after-effects, especially the former, which he usually gave in doses of from a half to one teaspoonful, well diluted in water, and repeated in two or three hours, if necessary. The chloralamide he gave in fifteen grain doses, repeated in two or three hours, if necessary.

In the prevention of attacks of spasmodic asthma, the speaker said it was hardly necessary to emphasize the importance of controlling or eliminating, as far as possible, any known exciting cause. One could not attach too much importance to the necessity for such care, whether the existing causes were from agents from without, or from disturbances from within the patient himself.

In speaking of remedies of a more or less specific character in the treatment of spasmodic asthma, Dr. Smith gave the iodides the first place. Disagreeable as they often were, both as to taste and effects, he still insisted on their use. The experience was common in many cases that if the iodides were taken pretty constantly there was no recurrence of the attacks for long periods. He rarely gave more than fifteen grains daily, and then usually in combination with a bromide. In the order of their beneficial effects, he placed the potassium salt first, then the sodium, and then the strontium, while their order of tolerance was exactly the reverse. Another remedy upon which he placed much reliance was cod liver oil, given continuously during the cold weather. In many cases the results of this treatment were most satisfactory. Arsenic was another agent of value in many cases, preferably given in small doses for a long period.

Dr. Andrew H. Smith raised the qestion as to whether the pathological condition was the same in all these cases; whether in some instances we were dealing, perhaps, with a spasmodic contraction of the air tubes, and in other cases of the blood vessels. Spasmodic asthma occurring in the course of renal trouble suggested the presence of some toxic substance in the blood that affected the vasomotor system, and the difficulty of breathing in those cases was probably dependent on a pulmonary ischemia rather than upon a lack of air in the air-cells. The speaker said that in some experiments he made years ago with oxygen inhalations, he was able to demonstrate that some cases were immediately relieved by such inhalations, while in others they had no effect. In the latter class, it seemed to the speaker that the trouble was in the blood-vessels more than in the air-tubes.

Dr. George L. Peabody said that Dr. Smith's paper had illustrated the extreme capriciousness of spasmodic asthma, in both the causative relations and the treatment. The speaker recalled the case of a medical student in whom violent attacks of asthma, lasting several days, were provoked by stroking a cat. In regard to the treatment of the persistent and less severe forms of this affection, Dr. Peabody said he depended rather more on the nauseant remedies than did the reader of the paper, and the results he had obtained from the use of tartar emetic had been fairly good. A grain of the drug was dissolved in a tumblerful of water, and the patient was given a teaspoonful of the solution, about 1-64 of a grain, repeated every hour or half hour. Given in this way, it never nauseated, and frequently relieved the attack. In some cases he had seen relief follow the inhalation of a spray of the wine of ipecac. With this method, the patient should be instructed to rinse his mouth very carefully after each spraying, as swallowing the solution would be apt to nauseate him. Dr. Peabody said he agreed with Dr. Smith that paraldehyde was especially valuable in some cases. When the stomach was very irritable, it could be given per rectum in peptonized milk or in water, in doses of from one to two drams.

Dr. Charles L. Dana said he had observed a number of cases where the attacks of spasmodic asthma had disappeared comparatively early in life, and the patients had become victims of a severe type of migraine, and, in one instance, of epilepsy. Such cases might lead to the inference that spasmodic asthma was a periodical discharging neurosis, similar perhaps, to migraine, and distinctly, to epilepsy. Both of the two latter affections were benefited by the bromides, the antiperiodics, and drugs of the alkaline class. The speaker said that his observations had led him to regard spasmodic asthma as a periodical neurosis, due to an unstable nerve center, like migraine, the attacks being excited like other discharging neuroses by peripheral or central irritations.

Dr. Beverley Robinson said that while he had seen many cases of spasmodic asthma relieved by the removal of nasal polypi, cauterization of the nose, etc., he had rarely seen a permanent cure follow such treatment. Of the manifold remedies that had been advocated in the treatment of this affection, he regarded the syrup of hydriotic acid as the best, *per se*. He also favored potassium iodide, where the patient could tolerate it, and frequently, as a useful adjunct, Hoffman's anodyne. The speaker recalled the case of a child that would suffer from attacks of spasmodic asthma and urticaria from taking milk, but these attacks would not occur when bread was taken with the milk. In that case the attacks were eventually outgrown.

Chicago Medical Society.

At a meeting, held December 6, 1905, Dr. William J. Mayo, Rochester, Minnesota, read a paper, by invitation, entitled "Radical Removal of Cancer of the Stomach." Numerous examples were cited to show the inconsistency of looking for a medical side to this question. There were two reasons why the medical profession had been slow to apply surgical methods to the cure of this common malady. These were: (1) The frightful mortality of early operations, which discouraged patient, physician, and surgeon. (2) The difficulties and uncertainties of establishing an early diagnosis. The death-rate from early operations was appalling. The average mortality at the time of Billroth's death was over 60 per cent. The mortality at present in the hands of men of experience in operable cases was not above 10 per cent., and in suitable cases it was nearer five per cent. An exploratory incision was the only way an early diagnosis of cancer of the stomach could be established. The most careful, painstaking methods of examination, including laboratory methods, should be insisted on, but should not be unduly prolonged. The clinical history, with chemical examination of the stomach contents, etc., might lead to the suspicion of carcinoma of the stomach, and it was upon these physicians should act if they would be truly conservative. Dr. A. J. Ochsner said that Dr. Mayo had done much to clear up the living pathology of carcinoma of the stomach, on account of having operated on such a large number of cases. The high mortality following operations for carcinoma of the stomach in the early days was due to conditions which no longer existed to a very great extent, since the methods of operating had been greatly improved by Mayo, Mikulicz, Krönlein, Czerny, and Robson. Formerly a large part of the mortality came from secondary complications, such as pneumonia. This was undoubtedly due to unnecessary traumatism and consequent infection by way of the esophagus. This complication had been disposed of by the simplification of the operation. The surgical treatment of ulcer of the stomach had cleared up cases which otherwise would have become cancerous, and had placed the surgeon in a position in which he could reasonably approach these cases at a time when their successful treatment was a comparatively simple matter. Shock was one of the causes of high mortality, but this had been reduced materially by simplifying the operation. Infection had been practically eliminated. Dr. Arthur Dean Bevan said that surgeons were almost unanimous in accepting the views presented by the essayist. It had been demonstrated that carcinoma of the stomach was a surgical disease, and that the modern work of the last five years had been sufficiently encouraging to urge surgeons to operate more frequently

than they had done before. Dr. E. Wyllys Andrews said the justification for the radical in preference to the palliative operation in cases of carcinoma of the stomach was based upon the results obtained and the relatively low mortality from the more modern method. He did not believe, however, that the time would ever come when palliative operations would be abandoned, because he had seen the lives of patients prolonged four and six months, yes, even one and two years, by such operations. Dr. Alexander Hugh Ferguson supported Dr. Mayo in the position he had taken. He had been fortunate enough to operate on one patient, doing a pylorectomy, who had been apparently cured. It was an early case, because there was early pyloric obstruction. He thought it would be a fortunate thing for the sufferers from carcinoma of the stomach if obstruction at the pylorus were the first symptom of their disease; then he ventured to say 95 per cent. of them would be saved from an untimely death. Dr. Fenton B. Turck spoke of the importance of differentiating more clearly between carcinoma of the stomach and what was not carcinoma. Dr. Frank Billings said carcinoma of the stomach was a surgical disease. The motility of the stomach was one important factor in separating the medical from the surgical cases. When the motility of the organ was disturbed and stagnation occurred, it was either a medical or surgical case, and the diagnosis would clear up which it was. If it turned out to be a case of pyloric stenosis, it was surgical; if it proved to be a case of diminished motility of the stomach, with a large pyloric orifice, it was usually medical. He recalled patients whose lives had been prolonged for more than a year following gastroenterostomy. Dr. Carl Beck had had an opportunity to observe a patient upon whom he did a radical operation for the removal of carcinoma of the stomach five years ago. He had had to do a secondary operation for carcinoma elsewhere, on the same patient, and during this second operation he examined carefully the stomach region and found it normal. Dr. Mayo, in closing, felt confident that the near future would reveal methods of making diagnoses in these cases more readily than now, and that as a consequence a considerable percentage of cases of carcinoma of the stomach would be operated upon much earlier. The surgeon could not always make a pathological diagnosis in these cases, and he thought anyone who said that a surgeon should not operate without a pathological diagnosis was in error. He had eliminated fifteen cases from his statistics because pathologically as shown by the microscope, they were not carcinoma but ulcer of the stomach.

Philadelphia Neurological Society.

At a stated meeting held November 28, Dr. Philip Sheaff demonstrated "A Case of Locomotor Ataxia Presenting Unusual Arthropathies of the Feet." The patient was a man, 38 years old, who gave a history of syphilitic infection, with marked enlargement and deformity of the feet. The Achilles tendon jerks were absent and the knee jerks could be elicited only on motor reinforcement. The pupillary reactions were preserved and there was only slight pallor of the optic discs. Occasionally there was girdle feeling and there was some difficulty in the expulsion of urine. Dr. J. H. W. Rhein presented "A Case of Injury to the Face Followed by Paralysis of Several Cranial Nerves." The patient was a woman, 55 years old, who had been struck on the left side of the face by a hawser while watching the departure of a vessel with friends on board. There was ptosis of the upper eyelid on the injured side, with dropping of the corner of the mouth, partial obliteration of the nasolabial fold, inability to rotate the eye outward beyond the median line, and left temporal hemianopsia with the Wernicke pupillary reaction on the temporal portion of the left retina. At the time of the accident there had been free epistatis, and it was found that the nasal bones had been broken. The lesion was supposed to be a fracture of the wings of the sphenoid bone with injury to the optic, the third, the fourth, part of the fifth, and the sixth nerves. Dr. Charles K. Mills exhibited "A Case of General Myokymia." The patient was a man, about 50 years old, who presented twitching of fasciculi and bundles of muscles in various parts of the body without known cause and of uncertain origin. Dr. Thomas Luther Coley presented a communication entitled "A Rapidly Fatal Case with Symptoms Suggesting Myasthenia Gravis." The patient was a man, 28 years old, who was seized with difficulty in swallowing, nystagmus, enfeebled ocular movements in certain directions, and elevation of temperature, with a fatal termination in the course of seventeen days. After death the thymus gland was found persistent and enlarged, and the ganglion cells of the anterior horns of the spinal cord were the seat of chromatolysis and nuclear displacement. There was no lymphoid infiltration of the muscles. The case also bore some resemblance to Landry's paralysis. Dr. D. J. McCarthy reported "A Case of Unilateral Tuberculous Meningitis," and he demonstrated the specimen. The patient had been a man suffering from pulmonary tuberculosis in whom hemiplegia set in with focal epilepsy. After death a meningo-encephalitis was found in the distribution of the middle Sylvian artery on the side of the brain opposite to that of the symptoms during life. Drs. G. A. Moleen and Wm. G. Spiller presented a communication entitled "Chronic Anterior Poliomyelitis in the Adult, with the Report of a Case with Necropsy." The patient had presented symptoms of spinal progressive muscular atrophy, while after death pronounced degeneration of ganglion cells in the anterior horns of the spinal cord were found, together with slight degeneration of the crossed pyramidal tracts. No similar report could be found in British or American literature, although some reports can be found in the German and French literature.

Pathological Society of Philadelphia.

At a stated meeting held November 9 Dr. B. Franklin Royer presented, by invitation, a series of brains and spinal cords illustrating the morbid anatomy of cerebrospinal fever. Dr. D. J. McCarthy exhibited specimens illustrating tuberculous meningitis. Drs. B. Franklin Stahl and John Funke exhibited the brain and spinal cord from a case of pneumococcal meningitis. Dr. Ralph Lavenson exhibited a specimen of hemorrhagic meningitis from a case of alcoholism with nephritis. Dr. John Funke exhibited specimens of hypernephroma with metastasis to pleura and lungs. Dr. Wm. Pickett presented a communication entitled "Syringomyelia with Report of Two Cases." He described the lesions found in two cases of gliomatosis with cavity formation in the cord, and he demonstrated sections of the diseased tissue. Drs. Wm. G. Spiller and E. Rawlings exhibited a specimen of meningomyelitis with intense swelling of the spinal cord and of the roots of the cauda equina. The patient was a child five years old. Lumbar puncture was practised and only mononuclear leucocytes were found in the fluid. After death the spinal membranes were greatly thickened and the cord unusually large, while distinct swellings were visible on the roots of the cauda equina. The conditions were suggestive of a tuberculous origin, but no tubercle bacilli or other microorganisms could be demonstrated. Dr. G. Canby Robinson presented a communication entitled "Bacteriological Findings in Fifteen Cases of Epidemic Cerebrospinal Meningitis, with Special Reference to the Isolation of the Meningococcus from the Conjunctiva and the Circulating Blood." The microorganism was found in the circulating blood in one among four cases examined from this point of view. Dr. Allen J. Smith presented a communication entitled "The Processes Involved in and the Significance of the Invasive Stage of Febrile Affections."

At a stated meeting held November 23 Dr. Warfield T. Longcope exhibited a specimen of "Echinococcus of the Lung," discovered accidentally after death in the body of a

patient dead from typhoid fever. Dr. Joseph McFarland exhibited a specimen of "Echinococcus of the Spleen." Some doubt existed as to the nature of the specimen, but by a process of exclusion it was decided that it could be nothing else than the remains of an echinococcus cyst. The specimen was obtained from a cadaver in the dissecting room and consisted of a globular mass embedded in the substance of the spleen. It was made up of a hard fibrous or cartilaginoid capsule with liquid contents containing cholesterin. Dr. Allen J. Smith exhibited a specimen of "Daughter Echinococcus Cysts." The specimen came from the collection of the University of Pennsylvania and had been prepared by the late Professor Joseph Leidy, who had obtained it from one of the lower animals. Drs. Addinell Hewson and A. G. Ellis exhibited specimens of "Echinococcus Cysts of the Liver and Kidney." The cyst of the liver was in every way characteristic and in its fluid contents hooklets of the parasite were discovered. The formation in the kidney, which was from the same subject, was of solid consistency with a distinct colloid or gelatinoid capsule, but hooklets could not be demonstrated. The specimen was obtained in the dissecting room and there was evidence that the cyst of the liver had undergone suppuration and had been in part discharged through an adventitious opening in the abdominal wall. Dr. Courtland Y. White exhibited specimens of "Echinococcus in Animals" and he demonstrated slides of scolices. Dr. W. M. L. Coplin exhibited specimens of hooklets and scolices obtained at operation on a case of echinococcus cyst of the liver. Dr. John Funke exhibited a specimen of rupture of an aneurysm of the aorta into the pericardium and also a specimen of laceration of the septum between two aortic semilunar cusps. Dr. Funke also read a paper entitled "Chemical and Microscopical Study of the Urine During Life Followed by Histological Examination of the Kidneys from the Same Patients." As the result of a large number of examinations it was found that albuminuria, even when present, was not constant, and that there was no invariable relation between the presence of albumin and tube casts in the urine and the actual state of the kidneys. Dr. Joseph Walsh read a paper entitled "Lesions of the Kidney in Pulmonary Tuberculosis." He reported the results of a study of the urine and of the changes in the kidneys in some sixty cases of pulmonary tuberculosis. Albumin, tube casts and tubercle bacilli were found in the urine with varying frequency; and tubercles of characteristic structure and tubercle bacilli, independently and associated, and also fibroid changes of varying degree and distribution were found in the kidneys after death. Drs. Lawrence F. Flick, M. P. Ravenel, and J. W. Irwin presented a communication entitled "Pneumococcic Infection in Relation to Hemorrhage in Pulmonary Tuberculosis." They dwelt upon the frequency with which infection with pneumococci complicated the course of pulmonary tuberculosis, and they proposed the term pneumococcosis as descriptive of the condition. The association is characterized especially by the appearance of blood in the expectoration, high and irregular temperature, and symptoms of profound intoxication not usual in cases of uncomplicated tuberculosis. The recognition of the condition is made by examination of the sputum and animal inoculation.

Specific Treatment of Tuberculosis. — E. Maragliano finds that all of the products obtained from the blood, milk, and tissues of animals immunized against tuberculosis have a curative action against the disease. The blood serum of these animals has a true therapeutic action in man especially in the early stages of the disease. Antituberculous substances introduced by way of the digestive tract pass into the blood and exercise an evident therapeutic action. Tuberculous toxins introduced by the digestive passages may develop in man and in animals antituberculous substances, and exercise a therapeutic action.—*La Riforma Medica.*

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Diseases of the Ear, Nose, and Pharynx. By St. John Roosa, M.D., and Beaman Douglas, M.D. 8vo, 621 pages, illustrated, muslin. The Macmillan Company, New York. Cloth, $3.00.

A System of Medicine. Edited by Thomas Clifford Allbutt, M.D., and Humphry Davy Rolleston, M.D. New edition revised with additions, 8vo, 1,209 pages, illustrated, muslin. Vol. I. The Macmillan Company, New York. Cloth, $5.00.

Intracranial Tumors Among the Insane. By I. W. Blackburn, M.D. 8vo, 94 pages, illustrated, muslin. Government Printing Office, Washington, D.C.

Manuale delle Mallattie dei Bambini. By John Madison Taylor, M.D., and Wm. H. Wells, M.D. Translated by Dr. Mario Flamini. 4to, illustrated, 862 pages, muslin. Torino.

Materia Medica. By John E. Graff, Ph.G. Third edition revised. 12mo, 176 pages, muslin. P. Blakiston's Son & Company, Philadelphia.

The Practitioner's Visiting List for 1906. Published by Lea Brothers & Company. Flexible leather, $1.25.

Minor and Operative Surgery, Including Bandaging. By Henry R. Wharton. Sixth edition. 12mo, 642 pages, illustrated, muslin. Lea Brothers & Company, New York. Cloth, 3.00, net.

Sexual Neurasthenia. By George M. Beard with notes and additions by A. D. Rockwell. Sixth edition, 12mo, 316 pages, muslin. E. B. Treat & Company, New York. Cloth, $2.00.

Laboratory Guide in Experimental Pharmacology. By Charles W. Edmunds, A. B. and Arthur R. Cushny, A.M. 8vo, 246 pages, illustrated, flexible muslin. George Wahr, Ann Arbor, Michigan. Cloth, $1.50.

Genitourinary Surgery and Venereal Diseases. By J. W. White, M.D., and Edward Martin, M.D. Sixth edition. 8vo, 1.092 pages, illustrated, muslin. J. B. Lippincott Company, Philadelphia.

Geisteskrankheit und Naturwissenschaft. Geisteskrankheit und Sitte. Geisteskrankheit und Genialitat. Geisteskrankheit und Schicksal. By Dr. med. Heinrich Stadelmann. 8vo, 43 pages, paper. München, 1905. Verlag der "Aerztlichen Rundschau" (Otto Gmelin). Paper, 1 mark.

Fistole Ureterali Consecutive ad Interventi Ginecologici e Guarite Spontaneamente o Fistole dei Canali di Malpighi-Gartner. By Dott. P. Sfameni. 8vo, 69 pages, paper. Tip. A. Toggo & Salvietti, Naples.

Technik, Wirkungen und Indikationen der Hydro-Elektrotherapie. Otto Gmelin, München, 1905.

Dose-Book and Prescription-Writing. By E. Q. Thornton, M.D. Third edition revised and enlarged. 12mo, 302 pages, illustrated, flexible leather. W. B. Saunders & Co., Philadelphia. Leather, $2.00, net.

The Inflammation Idea in General Pathology. By W. H. Ransom, M.D. 8vo, 354 pages, muslin. Williams & Norgate, London. Cloth, Shillings 7/6.

The Diagnosis of Tuberculosis of the Lung. By Dr. K. Turban. Translated by Egbert C. Morland, M.D. 8vo, 135 pages, illustrated, muslin. Wm. Wood & Co., New York.

Practical Sanitary Science. By David Sommerville, M.D. 12mo, 310 pages, illustrated, muslin. Wm. Wood & Co., New York.

Lectures on Clinical Psychiatry. By Dr. Emil Kraepelin. Trans. from second German edition, revised and edited by Thomas Johnston, M.D. 8vo, 352 pages, muslin. William Wood & Co., New York.

Die Anomalien des Kreislaufes. By Dr. Paul C. Franze. 8vo, 71 pages, illustrated, paper. Munchen, 1905. Verlag der "Aerztlichen Rundschau" (Otto Gmelin). Paper, Marks 1.60.

Aerztliche Taktik. By Dr. Fritz Schlesinger. 8vo, 55 pages, paper. Verlag von S. Karger. Paper, Marks 1.

Studies From the Rockefeller Institute for Medical Research. Vol. 3, 1905. 8vo, illustrated, paper.

Therapeutic Hints.

Scabies.—

For the better class of patients Blount suggests:

℞ Glycerini .....200 parts
Gum tragacanth..... 5 parts
Sulph. sublimat.....100 parts
Potass. carb..... 35 parts
Ol. lavandulæ.....
Ol. menth. pip.....
Ol. carophylli.....
Ol. cinnamomi.....āā 150 parts

—*Texas Medical News.*

Cough of Influenza.—

℞ Benzol. ..... ♏x
Tr. aurant. ..... ♏ xxx
Spt. chloroform. ..... ♏ xv
Tr. senegæ. ..... ♏ ix
Aq..... ad. ℥i.

M. Sig. To be taken every four hours, between meals.—*Clinical Review.*

Lupus.—

℞ Acid. chromic..... ℈i
Lanolini ..... ℥i

Sig. Apply locally.

Or, a ten per cent. ointment of ichthyol and powdered opium.—*Medical Summary.*

Night Sweats of Phthisis.—

℞ Ergotin ..... .01
Acidi lactici..... .02
Aquæ dest. ad..... 10.00

Sig. One or two hypodermic injections of fifteen minims each.—*La Quinzaine Thérapeutique.*

Acute Coryza.

℞ Sod. salicylat ..... ℥ss.
Pulv. ipecac. et opii..... ʒss.
Spts. menth. pip. ..... ♏x.

M. et ft. Chart. No. X.

Sig. One every three hours until relieved.—*Medical Press.*

For Itching in Psoriasis.—

℞ Chloral. hydrat..... ʒss.
Pulv. camphoræ ..... gr. xx.
Sulphuris subl. ..... ʒi.
Ung. aquæ rosæ..... ʒi.
Acid. carbolici .. .. ♏l.

M. Sig. Apply locally.—*Medical Review of Reviews.*

Colitis.—In mucous colitis when some catarrh of the intestine is present the following combination is recommended by W. H. Thompson:

℞ Argenti nitratis .....gr. v.
Resinæ terebinthinæ.....ʒiii.
Liq. potassæ.....ʒi.
Pulv. glycyrrhizæ ....q. s.

M. Ft. Pil. No. lx. Sig.—Three pills three times a day. Subsequently, the above may be replaced by one-fourth of a grain of copper sulphate. Fowler's solution, in one drop doses, is also of service in these cases.—*Clinical Review.*

Hordeolum.—Michailowsky speaks highly of this formula:

℞ Ol. eucalypt. glob..... 4.
Lanolin.....
Vaselin..... āā 7.5

M. Ft. unguentum. Sig.—Apply to the stye several times daily.—*Russische medizinische Rundschau.*

Coryza.—Lermoyez recommends:

℞ Acid carbol.
Spt. ammon .....āā 5.
Aq. dest.....15.

Sig.—Every hour pour ten drops on blotting paper and inhale the vapors.—*La Presse Médicale.*

Dr. Atlee's Nipple Wash.—

℞ Sod. borat.....ʒi.
Pulv. acaciæ.....ʒii.
Tr. myrrhæ.....
Aq. rosæ.. .. .. .

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 2.
Whole No. 1836.

New York, January 13, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

OBSERVATIONS ON NEPHROPTOSIS AND NEPHROPEXY.*

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NEW YORK.

GYNECOLOGIST TO THE SYDENHAM HOSPITAL, SURGEON TO THE METROPOLITAN HOSPITAL.

The scope of the general subject of intraabdominal ptosis makes it essential to emphasize that the present communication is necessarily limited to a curtailed practical consideration of that phase of the condition most amenable to correction, namely, nephroptosis.

The recorded observations on ectopic kidney date from the year 1561 and constitute a voluminous though widely-scattered literature, which is characterized by a lack of comprehensive unity on every phase of the subject from nosology to therapy.

Thus, while it is generally conceded that in a certain proportion of the cases, this condition embodies an actual though ill-defined clinical and pathological entity, it will nevertheless be found classified and discussed, even in some of the most recent treatises on the subject, as a topographical anomaly, or, in other words, as a simple anatomical curiosity.

Such incongruity and indefinitude pervading this whole subject, it devolves upon those whose special interest brings them into most frequent and responsible association with these cases, to submit for comparison and criticism such observations and impressions as result from their wider study and larger experience.

To the present writing, all statistics bearing upon the frequency of nephroptosis are based upon the existence of palpable kidneys, of whatsoever degree or significance. It should be borne in mind, however, that a kidney that is accessible to palpation has not necessarily trespassed beyond its physiological limits, for it is now established beyond controversy that the kidneys normally display a varying degree of mobility. It is difficult to establish a differentiating border line between such physiological mobility and pathological prolapse, inasmuch as the range of mobility seems to present no proportionate index in the intensity of its clinical manifestations.

It will be observed that in some instances a degree of mobility exceeding any conceivable normal range proves entirely unproductive of discomfort, while in other instances a kidney presenting a mobility that, according to some authorities could be justly interpreted as entirely within normal limits, demands radical correction for the relief of local and general symptoms.

In view of such clinical disparity, the question naturally arises, what constitutes nephroptosis? Abnormal visceral mobility represents abnormal visceral support, the recognition and correction of which should be based upon a clear conception of the mechanism of normal support and the elements involved in the disturbance of such normal support.

The nature of normal kidney support has been the subject of speculation and controversy from the time of Bartolini to the present day. Every structure, anatomically or functionally related to these organs, has been successively depicted at one time or another as representing their supporting element, until Wolkow and Delitzin demonstrated the functional passivity of *all* textural support and the dominating influence of intraabdominal pressure in maintaining the topographical stability of the kidneys.

The significance of these findings, which were obtained by observations on the vertically suspended cadaver, prompted the corroboration of their validity in the living, as follows:

Modern surgery of the more deeply situated upper abdominal viscera, resorts to postural aids, utilizing gravity and atmospheric ingress to favor accessibility and isolation of the surgical objective point; the patient is placed in what is termed the reversed Trendelenburg position, that is, with the upper parts of the trunk elevated. In this position, which to a degree reproduces in the living, the postural element in Wolkow and Delitzin's investigations on the dead, the opened peritoneal cavity will uniformly reveal kidney mobility, with varying degrees of ptosis that were not manifest in any manner through the intact peritoneal sac.

Such experimental induction of artificial kidney ectopia establishes the stabilizing function of intraabdominal pressure and the purely auxiliary nature of ligamentous suspension in kidney support.

The potency of intraabdominal pressure as a supporting element, however, is entirely dependent upon one contributory factor of the deepest significance in the solution of our problem; namely, the conformation of those depressed areas in the posterior abdominal wall normally occupied by the kidneys. The more extensive the contact area between the posterior kidney surface and these depressions, the more efficacious the retentive power of intraabdominal pressure.

Omitting theoretical considerations, normal kidney support may be practically defined as the resultant of two essential factors, a retaining pressure of adequate intensity and a receptacle of accurate conformation. The retaining pressure is exerted by the normal tension of the general peritoneal sac applied to the anterior kidney surface in the manner of an inflated cushion, propping the organ against its receptacle. This pressure is reflexly regulated by the activity of the abdominal muscles.

The receptacles applied to the posterior kidney surface are formed by the declivity existing

* Read before the Harlem Medical Association, December 6, 1905.

on each side of the anterior aspect of the lower dorsal and upper lumbar spine. They are funnel-shaped recesses, narrow below in the male, more cylindrical and shallow in women, a peculiarity more marked on the right side and appearing with the broadening of their pelvis at the advent of puberty. Deviations in the conformation of these receptacles from the lines of the posterior kidney surface, constitute the main predisposing factor in the production of nephroptosis.

The causes of such deviations are embaced in the whole category of congenital and acquired skeletal abnormalities, and while the external manifestations of skeletal deficiencies have received brilliant illumination from modern orthopedic science, their clinically related internal manifestations, or visceral orthopedics, constitute an unwritten chapter.

In the presence of skeletal inadequacy of the receptacle, any given factor, sufficient to alter, even temporarily, the intensity or direction of intraabdominal pressure, will produce nephroptosis, and a kidney so dislocated can never spontaneously regain or retain its normal position in the erect posture.

The pressure that maintains normal kidney stability, in the presence of an adequate receptacle, will perpetuate its instability in the absence of such proper resting place.

This perpetuation of such ectopia or, in other words, the inability of the kidney to retain its normal topographical relations under the given conditions, cannot logically be attributed to mere insufficiency of the receptacle only, for at best the relation between the kidney and its receptacle is one of limited surface contact.

Dislocated kidneys will invariably be found associated with characteristic skeletal stigmata. Becher and Lennhof noted the ratio between length and circumference of the trunk presented by this skeletal type, and found that a certain index invariably bespoke the existence of nephroptosis.

Not only mensural characteristics, but the structural, nutritional, and functional derangements of bones, ligaments, and muscles that result from infantile disease affecting these structures, such as syphilis, rickets, poliomyelitis, and so on, are presented by this class of patients.

Thus the possessor of a prolapsed kidney probably had club foot or has acquired flat foot, shows a tendency to or existing herniæ, spinal curvatures, proneness to articular dislocations and fractures, uterine and ovarian displacements, and prolapse without apparent intrinsic cause.

Nephroptosis has been found in infants. W. R. Stewart reports a case, in which an exploratory laparotomy for intestinal obstruction revealed a prolapsed kidney. Abt and Morris have collected and reported a number of similar instances. In the abdominal protrusion of rickets, familiarly known as "pot belly," nephroptosis can usually be demonstrated.

It is a recognized law in physics, that a body impinged against a given surface is subject to deflection, according to the angle of the plane of that surface. This law governs in establishing and maintaining visceral equilibrium within the abdominal cavity, against the displacing force of gravity and the functional activity of the mobile abdominal contents; but for the influence of such planes in deflecting and directing abdominal pressure, every erect biped would carry his abdominal contents in his pelvis. The mechanism of pressure deflection in maintaining pelvic visceral equilibrium was elucidated by the writer in a recent publication;* the principles there elaborated apply to all the other abdominal viscera.

Admitting the existence and the dominating influence of such planes, in directing or misdirecting pressure, it follows that skeletal deviations, by permanently altering the angles of the deflecting planes presented by the inner surface of the abdominal cavity, must result in a permanent deflection of the organs impinged against such planes by the force of intraabdominal pressure.

The earlier in life the kidney is deflected from its normal plane, the less disturbance its malposition will induce. Such early development of nephroptosis will result in one of two conditions: either there will be a spontaneous fixation of the prolapsed organ, usually at the pelvic brim, or there will be established what may be interpreted as a compensatory equilibrium among the abdominal contents, thus creating a tolerance of the abnormality.

Ectopic kidneys of early development, will present the widest possible range of mobility, with the minimum of disturbance, while the more recently developed ectopia, with limited mobility will announce its existence in unmistakable symptoms of local and general significance.

The symptomatology of nephroptosis represents the most prolific chapter in its literature, and it will serve the practical purpose of the present communication, to skirt only the general elements involved in its clinical manifestations, rather than enter into a detailed enumeration of individual symptoms.

The clinical significance of nephroptosis is proportionate to the disturbance manifested within the prolapsed kidney and by the prolapsed kidney upon associated viscera.

A prolapsed organ is more exposed and more susceptible to injurious influences than one normally situated; the more obtrusive results of kidney dislocation, such as strangulation from torsion and impaction find full recognition, while the more insidiously developing pathological accompaniments, although of equally serious import, are almost unknown.

Segregation and modern chemicophysical urinalysis will reveal unsuspected functional and organic abnormalities in many cases. Ureteral catheterization will frequently encounter angulations productive of a hydronephrosis that eluded ordinary bimanual palpatory exploration.

When it is recalled that the ultimate tendency of augmented intrarenal pressure from impeded urine drainage is degeneration and absorption of the renal parenchyma, the importance of recognizing and relieving the early manifestations of such impediment becomes apparent. It is generally claimed that such pathological results from movable kidney are of rare occurrence; this claim must be taken as unsubstantiated, so long as pathologists omit to seek and note the existence and etiological relations of abnormal mobility in their investigations of kidney degenerations.

The familiar manifestations of nephroptosis resulting from the distortion of the normal topographical and physiological relations of the kidney represent the accessible knowledge on the subject; they are the gastrointestinal, biliary, and nervous phenomena that make up the conventional chapter on symptomatology, and are

*Perineum, Perineorrhaphy, and Prolapse, MEDICAL RECORD. April, 1905.

simply alluded to in passing to the bearing of nephroptosis on gynecological conditions.

The genitourinary system represents an embryological and clinical unity, and it is but natural to find that disturbances in its components are manifested by associated, interdependent, and undifferentiable symptoms. Unfortunately, ethical refinement in modern specialistic distinction places an arbitrary deadline between the renal and gynecological zone, to the detriment of the patient and impediment of our knowledge.

The inexplicable persistence of so-called ovaralgia, ovarian dysmenorrhea, intermenstrual dysmenorrhea, and other obscure manifestations, that have cost many women their ovaries if not their lives, will usually find ready explanation in the existence of a prolapsed kidney.

The investigations of Edebohls have established a causal relationship of nephroptosis to appendicitis, yet many an unoffending appendix is sacrificed, owing to a sensitive McBurney's point, the result of iliohypogastric or ilioinguinal neuralgia, accompanying a dislocated kidney. An illustrative case under the writer's observation, presented a marked painful varicocele of the right broad ligament, the result of nephroptosis and productive of a disabling right-sided dysmenorrhea. A prominent surgeon removed the appendix; a recognized gynecologist suggested cervical divulsion and curettage, which was faithfully carried out, yet the incapacitating dysmenorrhea persisted until permanently relieved by nephropexy.

Unbiassed observation of many cases of nephroptosis will bring the conviction that no inconsiderable number manifest subjective and objective symptoms of a gravity that calls for serious therapeutic effort.

Normal restitution in nephroptosis would imply normal restitution of the skeletal deviations productive of the ptosis. Such skeletal deviations represent the results of accidents and diseases incidental to skeletal growth and development, and it follows that the time for the prevention and correction of such deviations falls into the developmental period of the osseous framework.

The restoration of normal internal as well as normal external conformations should be our orthopedic aim; the organic and functional spinal deviations of early life, the infantile paralyses, the muscular and ligamentous insufficiencies, should receive consideration from the point of normal internal as well as external topography. Much is being accomplished in the correction of external skeletal abnormalities; much may be accomplished by attention to the visceral displacements induced by such abnormalities.

Kidney dislocation once developed, nothing short of surgical fixation will reestablish its normal stability. Palliative treatment undoubtedly yields results, but of temporary duration. It is only natural that the dorsal decubitus should relieve symptoms due to a prolapsed kidney; it cannot, however, result in fixation of such a kidney, no matter how long maintained.

Nor is kidney support a question of fat supply. The fatty capsule surrounds the kidney in a protective capacity and not as a support. We find loose kidneys in very fat people and fixed kidneys in the very lean. Those afflicted with acute wasting diseases do not develop nephroptosis, while, on the other hand, every surgeon who practises nephropexy has frequently been compelled to remove very large masses of perirenal fat, in the preparatory denudation of kidney fixation. Notwithstanding all this, palliative measures must frequently be employed, as adjuvants to nephropexy, or for the control of concomitant conditions.

Thus, the abdominal belt will add comfort in the diastases and relaxations of the abdominal muscles, found in some of these cases, but it cannot in any manner support a prolapsed kidney. The abdominal muscles are the guardians and regulators of intraabdominal pressure; they are constantly active, automatically yielding when the pressure increases and contracting when it diminishes. Loss of tone and function in these muscles cannot be replaced by elastic webbing.

It is impossible to hold a prolapsed kidney in normal position by any endurable pressure or tension exerted through the abdominal wall; not even the trained hand of the examiner can restrain a movable kidney; coughing, sneezing, and muscular exertion, all of which augment intraabdominal pressure, will displace hand or pad, and permit the kidney to fall into its abnormal position, where it will be as firmly held by the compressing or constricting appliance which thus defeats its own object.

The keynote in the therapeutics of nephroptosis is permanent fixation. At the present time, permanent fixation can be realized with certainty and comparative safety, by the adoption of modern methods of nephropexy.

The mortality of this operation in experienced hands, is about equal to that of exploratory section, and its results must establish it as the legitimate procedure in the cure of nephroptosis.

In the MEDICAL RECORD of June 22, 1901, I published a flap method of kidney fixation, which, with the omission of the transparenchymatous suture, presents the technique adopted in the majority of my cases; it should be mentioned, however, that no single procedure is applicable to all conditions.

During nineteen years of public and private service, 112 cases of nephroptosis came under observation, of which 83 were operated, all in the course of the last six years. In this series, no mortality and three accidents were encountered; an injury to an abnormally attached, accessory renal pelvis, and two instances of urinary fistulæ, resulting from superficial parenchymatous lesions produced in detaching a very adherent friable capsule.

Much should be added that could be said in connection with technique; the accidents and incidents of convalescence; the results, etc., but time limit forbids and this sketchy outline of our subject must stand as a condensed report of a practical and theoretical study of the subject under discussion, which is submitted for criticism and discussion from the conviction that in this manner only can accumulated experience ultimately crystallize into a concrete and systematized elucidation of this clinical problem.

51 WEST SEVENTY-FOURTH STREET.

Hospital Cars in Germany.—The Prussian ministry for railways has placed at every important railway center throughout the kingdom a magnificently built and appointed car for the transport of the sick. These cars have been specially fitted up from plans supplied by sanitary authorities. Spring beds and every medical device for the alleviation of suffering during transit have been utilized. There are gas stoves for cooking, rooms for attendants, and ingenious devices for muffling the sound caused by the motion of the train. These cars are intended especially for use in case of an accident, but they will also be at the service of any invalid needing transportation.

THE RÔLE OF SALINE SOLUTION IN THE TREATMENT OF PNEUMONIA.*

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The general treatment of pneumonia has been reviewed so thoroughly in the papers that have preceded mine that I will limit my remarks to one of its phases, namely, the means which seem best fitted to insure efficiency of the body's autoprotective processes throughout the entire febrile stage of this fatal disease.

Whatever theory of immunity we adopt, whether we conclude with Buchner that the blood protects the body through the presence in this tissue of "alexins"; whether with Ehrlich we grant the tissue-cells the power to secrete "receptors"; whether we agree with Sajous that the internal secretions supply the needful protective agents to the blood, the fact remains that the life-fluid is unquestionably endowed with a substance capable of staying the hand of death when conditions are such as to enable it to act unhindered. "We know now," recently wrote Behring, "that immunizing antibodies regularly appear in the blood wherever an infectious disease terminates in recovery." Is this not the one feature of the problem which should command our keenest interest? Have we not here the one great weapon through which it is possible to reach the deadly pathogenic elements? It is to this weapon and to the preservation of its integrity as a potent means of attack that I wish to refer.

It is well known that in 1889 F. P. Henry of Philadelphia employed saline hypodermoclysis in the treatment of certain cases of pneumonia. These were, as he specifies,[1] however, cases "of the severest type" and "desperately ill." The value of this procedure in surgery had suggested its use in pneumonia to others both in this country and in Europe, and between 1892 and 1900 especially it was tried in quite a large number of cases. In 1899 C. A. Penrose[2] also advocated hypodermoclysis, but in combination with oxygen inhalations and bleeding. Here again, however, the measure was only used in "desperate cases," practically as a last resort. In England it was tried under the same conditions. Ewart and Percival,[3] for instance, having used it in six cases that were "severe and of uncertain and extremely anxious though not hopeless prognosis" concluded that the injections "were powerless to check the fatal course" in "the worst type of cases." The use of this valuable measure, which even in moribund cases sometimes restores life, has thus been associated with the gravest stage of the disease and recommended for trial "in desperate cases," as Tyson does in the last edition of his text book.

The object I have in mind is not to be attained by the use of saline solution under these discouraging conditions. We do not preserve economically the integrity of the immunizing principles of the blood when we wait until the system is practically overwhelmed with toxins; until the functions of the cells that produce them are well-nigh paralyzed; until the lungs are engorged to such an extent that cyanosis occurs; until pulmonary edema is present or threatened; until the overworked kidneys can withstand no further sudden assaults of toxic wastes; until the blood, already poor in oxygen can hardly bear dilution, and finally until the nerve centers are so dulled that they no longer respond to peripheral impressions. As well wait for the moribund stage to occur in a case of diphtheria before using antitoxin as to employ saline solution during this stage of desperate struggle.

Very different is the conception of the use of saline solution to which I now refer, that due to Sajous of Philadelphia. Here, all the untoward features just reviewed are taken into account, and the aim is eminently in keeping with the most advanced teaching of experimental research, namely, "to preserve and enhance the blood's bactericidal and antitoxic properties from the outset of the disease." This was embodied nearly three years ago by Sajous[4] in a sentence which should be carefully noted, since it has already been instrumental in saving life, viz., "The primary effect of deficiency of alkaline salts in the blood being to inhibit nutrition, to impair the efficiency of, and finally arrest the protective functions of the organism, it constitutes one of the most active causes of death."

It is needless to lay stress on the pathologic importance of the blood's alkaline salts. A brief quotation from Howell's recently published "Physiology" will suffice. The salts of the blood "have most important functions," writes this eminent physiologist; "they maintain a normal composition and osmotic pressure in the liquids and tissues of the body, and by virtue of their osmotic pressure they play an important part in controlling the flow of water, to and from the tissues. Moreover, these salts constitute an essential part of the composition of living matter. In some way they are bound up in the structure of the living molecule, and are necessary to its normal reactions or irritability."

Now, given any disease attended by marked fever, the loss of the blood's main salt, sodium chloride, is not replaced, owing to restricted diet, anorexia, and the many factors which cause the patient to reduce greatly the intake of his normal food. At least one-half ounce of sodium chloride being voided daily in the urine, the time soon comes when the cells are hampered in their vital functions and gradually cease to secrete their autoprotective antibodies, thus giving free sway to the pathogenic elements. In pneumonia, especially, the cells hold their sodium chloride in reserve and the salt soon ceases to appear in the urine. But watch these cases; notwithstanding nature's attempt to thwart a desperate situation the patient steadily sinks, deprived of that which represents in this connection their pabulum vitæ. This summarizes Sajous' teachings when he wrote: "Steadily as the febrile process advances, the salts are consumed, and being inadequately renewed, the vital and defensive functions are increasingly hampered until life ceases." He, thereupon advised the use of saline solution, not when the case has reached the danger limit, but from the outset, at the start of all fevers, so as to avoid any chance of reaching that advanced danger limit.

Is there any connection between a febrile process and the blood-salts? To show that there is I will again quote a book published since the above teachings were placed on record; namely, the second edition of Lazarus Barlow's "General Pathology," 1905. Referring to the diminution of the blood alkalinity during fever, the author says: "The cause of this change is quite unknown, but whatever the true explanation may be, it is probable that the change is highly important for the organism, for it is an unfavorable sign in febrile disease, and it is known that dim-

*Read in the Symposium on Pneumonia before the Medical Association of the Greater City of New York, December 11, 1905.

inished alkalinity of the blood goes hand in hand with increased susceptibility to infection." Sajous had already advanced considerable experimental evidence to the same effect, including that contributed by Metchnikoff, Behring, Nissen, Paul, von Fodor, Blumenthal, and many other authorities.

Limiting my remarks to the subject of the evening, pneumonia, including the bronchopneumonia of children, since my work brings me much in contact with this dangerous form of the disease, I will cite as typical instance a case treated in my service only last week, that of a child seven months old, in which the characteristic signs of double extensive bronchopneumonia were prominent, with a temperature of 103.5° F. The use of saline solution alone produced such a prompt disappearance of the morbid phenomena that in seventy-two hours the child was practically well. Can this be attributed merely to crisis? The experience of others and myself in other cases, shows that such cannot be the case. On the old plea of washing out the blood—"hematocatharsis"—Lemaire[5] injected daily in children three years of age and over, 200 c.c. of a 7. per mille solution at one time and in children under that age 180 c.c. daily, divided into three injections. But he did not wait until the cases had reached the "desperate" stage; he initiated it as soon as the usual remedies had failed to produce the desired effect; when, in other words, the cases were not too far advanced. In the eleven cases reported, the blood pressure was promptly raised, diuresis was increased, the whole organism, notably the nervous system, was powerfully stimulated, oxidation was enhanced and all recovered. In such cases, there is a rise of temperature which may persist a few hours, then rapid improvement follows. The old view that the toxins are washed out of the blood is no longer acceptable, however, since Bosc and Vedel[6] instead of finding the urine toxic, found it hypotoxic—evidence that the toxins had been destroyed in the blood.

In adults the use of saline solution, even in desperate cases as advocated by Henry, Penrose, Tyson, may be followed by a sudden onset of convalescence. This affords evident proof of its power and indicates how greatly the chances of success would be increased if it were used before the danger period.

This is emphasized by the same line of reasoning that the six cases of Lemaire sustain. Bassi[7] also used the saline solution in six cases of grave double pneumonia in which the pulse already showed intermittence only the day before the expected crisis, and lost but one. Wherever, in short, the records on the subject afford any suggestion that the measure was resorted to somewhat earlier, even in severe cases, the chances appear to have been increased. In Henry's series the deaths were one in four, in Penrose's one in three, in Bassi's they were one in six, etc. Recently J. B. Todd[8] introduced a measure which will serve greatly to facilitate the use of saline solution; *i. e.* administering by the mouth as a lemonade, each glassful (six to eight ounces) containing ten grains of sodium chloride and five grains of potassium bicarbonate and a teaspoonful of lemon juice. This is given every two hours in adults. In the two cases reported among those thus treated, one of woman of 84 years and the other a girl of eight years, the temperature was 104° and 103 5° respectively when first seen. Saline drinks were instituted early, and produced the typical effects of intravenous and subcutaneous injections, both ending in recovery.

These few examples will serve to illustrate the aim in view. It is a new line of thought which awaits development through the teachings of general experience, but what little has been done backed by the solid experimental evidence to which I have briefly referred, is already full of promise. How far-reaching this line of thought may prove to be can be illustrated by a possible development which will surprise you as much as it did me, when Dr. Sajous pointed it out to me: We are looking on all sides for immunizing sera, which, like antitoxin in diphtheria, will enable us to cope with the great scourges of humanity, among which pneumonia is rapidly taking the lead. In the recent address to which I have already referred, Behring advances as a biological law that "specific immunizing substances can be obtained in no other way than from the blood and organic juices of individuals who have passed through the diseases against which we wish to produce immunity." Now, since saline solution can, as proven experimentally, maintain the blood's antitoxic properties, it can do so only by enabling these "blood and tissue juices" to act efficaciously and specifically, and, according to Sajous, the early use of saline solution, in all febrile infections must therefore produce the effects that we are trying to obtain from specific sera. Especially will this become a life-saving measure when his view that the blood's immunizing antibodies can be increased by judicious medication will have been as clearly demonstrated to the profession at large as it has to those who have put his teachings to the test.

Addendum.—Dr. Homer Wakefield of New York has sent me the following remarks forming the substance of what he had intended to say in the discussion of this paper. The lateness of the hour, however, cut short the general discussion.

"Dr. Taylor's paper involves many interesting chemical aspects of pneumonia. In addition to the relation of sodium chloride to the osmotic pressure, which is unimportant in the higher animals, owing to the many other factors which influence the density of protoplasm and thus vary the osmotic equilibrium, and therefore disturb the equilibrium with its media, sodium chloride undoubtedly plays a part in the maintenance of the alkalescence of the blood, and still more important are the halogen properties of catalysis, and the bivalency of chemical constitution of chlorine, by virtue of which, as is well known, it is a sort of prototype of oxygen. Possibly it is owing to an oscillatory attunement, that oxidation is so intimately related to the bivalent elements. The halogens are the salient catalytic factors of sea water, and probably also of the blood, where we know they play at least an important subordinate rôle.

"In pneumonia, where we have to deal with a pulmonary acidosis, as determined by the researches of Rosenow of Chicago, depending on the acid products of the diplococcus, we know we have a condition of *sub*oxidation, owing to the impossible condition of acidity, and the morphology of the sequence of the process, which precludes oxygenation to the involved areas. Now we know that in the laboratory, under conditions favorable to oxidation, but in which oxygen is practically absent, and chlorine is present, the chlorine enters the combination in place of oxygen. In other words, oxygen affinities, in the absence of oxygen, exert their attractions for chlorine, which, if present, would be extracted from less powerful combinations, and thus they are bound by the asphyxiated tissues. It is evident that such a procedure would withdraw the chlorides from the blood, during

the oxidation period, which is exactly what happens in pneumonia. It is interesting, in support of this hypothesis, that complementary to the hastening of resolution of pneumonia by administered chlorides, is the equally successful method of Dr. Frank Billings of Chicago, who is enthusiastic over his alkaline treatment, and Altshul of New York, who has found potassium iodide almost a specific.

"The additional fact that chlorides are retained in diseases of suboxidation, other than pneumonia, is confirmatory of the theory of the displacement of oxygen by chlorine in these cases.

"Next we are brought to a consideration of the relation of chlorides and oxidation to toxins and antitoxins. We have not time to discuss this profound subject, but suffice it to say that recent advances in physical chemistry, coupled with some physiological researches, have pretty well established the fact that antitoxins are electrochemical opposites of toxins, and are producible from toxins, in the economy and in the laboratory, by the catalytic action of oxidation, electricity (especially high frequency currents), Roentgen and Bequerel rays, etc. Such being the case, we can readily appreciate the overaccumulation and greater toxicity of poisons during periods of suboxidation, and the recuperation of antitoxin production on restoration of oxidation.

"Theories of disease, which are capable of a very restricted application, are generally weak. Conversely, when universally true, they are generally confirmed by collateral truths, often obtained in widely different fields. Such is the case with Dr. Taylor's contributions to pneumonia; they are entirely compatible with my own findings."

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AN INQUIRY INTO THE SCIENTIFIC PRINCIPLES WHICH UNDERLIE THE MILK FEEDING OF INFANTS.*

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The question of the substitute feeding of infants has assumed such importance both in the family and the state, and the views which are held upon this subject have become so diverse, that if we are to satisfy an increasingly intelligent laity we should be able to demonstrate clearly the fundamental principles upon which such feeding rests. Despite the fact that empiricism has heretofore been our main reliance, I believe that there is such a thing as the *science* of infant feeding, and that this, like all other true sciences, is demonstrable. It may, therefore, prove of interest to enter upon an inquiry as to why cow's milk, aside from its cheapness and availability, constitutes the best substitute food for infants.

Animal bodies are made up of certain basic principles: Fat, proteids, carbohydrates, mineral salts, and water. This applies to all higher animals, old and young, and the human infant does not constitute an exception to this rule. These elements, which go to make up the body, must be furnished in the food. They are found in very diverse forms of food, such as hay, grass, grains, vegetable matter, milk, and flesh. But the inherent differences in these types of food show us that we must go back beyond their gross chemical composition if we are to understand their ready utilization by the animal. To-day anatomy and physiology have come to be more fully recognized as intimately associated and complementary subjects than was the case not so very long ago. We recognize that form is adapted to function, and the expert will readily deduce structure from function, or function from structure, in studying extinct or existing forms of life. He will tell from the teeth whether an animal was carnivorous or herbivorous, and its type; from the legs whether or not it was suited for speed in escaping its enemies; and from other portions of its structure whether it was adapted for attack or defense.

From structure and function it is an easy step to certain gross relations between the food and the structure and functions. The foods of different animals are not alike, and their digestive tracts are not the same, but even those which eat the same kinds of food show distinct variations, depending upon their types of digestion. Twenty pounds of hay furnish but one pound of proteid, while one pound of lean flesh contains approximately one-fourth pound of absolute proteid. The hay-eating cow requires, therefore, a larger digestive tract, with provision for bulky foods, the carnivorous wolf a much smaller one. In the ruminant herbivora like the cow, who rechew their food, the stomachic portion of the digestive tract greatly predominates in size. In non-ruminants, like the horse, whose food is finely divided before swallowing, the stomach is very small and the intestinal portion, especially the cecum, enormously developed.

We have thus far spoken only of the adult mammal, to establish the fact that its digestive tract is adapted to its peculiar food and its type of digestion, and you may readily be inclined to ask what bearing this has upon the question of milk. In some of the lowest forms of animal life, like the ameba, reproduction is brought about by a constriction of a part of the parent body and the gradual separation of a complete organism capable of independent existence. At the other extreme of animal life we find the highly developed human being. When an infant is separated from the human mother's body, nutrition has for some time been carried on by the placental circulation. After anatomical separation from the mother at birth, the nutrition is still derived from another part of the maternal body, the breasts, and a physiological connection or dependence still continues. In the prenatal state, evolution of the fetus has only advanced to a certain point. After birth coordinated use of the limbs is still to be acquired; the teeth, the powers of digestion, and the brain are still undeveloped. With most mammals, when maternal feeding ceases the structure is completed and physiologically ready for independent existence, although often requiring some degree of care and protection. Maternal feeding, therefore, may be said to be practically continuous from conception to weaning. During the mammary period of maternal feeding the mother has still to furnish to her offspring the five great food principles: fat, proteid, carbohydrates, mineral salts, and water. These are now furnished in the form of milk. Only when the digestion and the teeth have been developed do the ordinary rules of dietetics apply to the child, as everyone who has attempted

*Read at the annual meeting of the Alumni Association of St. Luke's Hospital, April 14, 1905.

to feed infants knows. There is as much difference between the types of food consumed by the infant and the adult as there is between those consumed by the dog and the horse. All require the same elementary food principles, but require them in decidedly different forms. The fact that about one year after birth the child can thrive on food which at birth would cause its death, shows that a complete change has taken place in the digestive tract. What is true of the infant is true of the calf and other suckling young. It is evident, therefore, that the nutriment furnished to the young is fitted to a digestion which is undergoing continual change. The food is the same, but the digestive powers are changing. This brings us to the true basal problem of infant feeding, namely, how milk whose composition and properties remain practically the same throughout lactation can be equally suitable for a digestion that is at birth feeble and at weaning able to care for solid foods. The explanation is a simple one, although it has only recently been advanced. It is that the milk itself is directly instrumental in developing the digestive tract.

That all milks are foods needs no demonstration. The world has long recognized that there were certain gross differences between woman's, cow's, mare's, and goat's milk, although it has regarded them as much the same. The chemist has shown us that they all contain fat, proteid, sugar, mineral salts, and water, but that these are present in different proportions. These quantitative differences in composition are readily explained by the fact that those species of young which grow most rapidly require more structural material. The problem of feeding the young of one species with the milk of another species would be a simple one were these quantitative differences of the elements the only ones, but when these are adjusted, other differences which are qualitative remain. What explanation, then, can be found for these qualitative differences, which are especially marked in the proteids and more specifically in the caseins of different milks? For this purpose we must inquire into the processes which take place during the digestion of milk. The digestion of the infant or young animal has been looked upon largely as that of a small-sized adult. But if that were true, the young should be able to digest proportionately small quantities of adult food. A little thought and observation will show that from conception to weaning the nutritional problem is complicated by the continual evolution of form and function; while from weaning to the adult stage increase in size and strength are the principal changes. The question must be approached from the standpoint of the physiological dependence of the young upon the mother during lactation.

Immediately after birth the mammary glands do not secrete true milk, but colostrum, which also contains the five food elements, fat, proteids, sugar, mineral salts, and water. This is gradually replaced in a few days by true milk, which remains practically uniform throughout lactation. It would be manifestly difficult to study the gastric secretions of the new-born infant, but this can be done in the calf. In cheese-making large amounts of rennet are required, the chief available supply of which is from the stomach of the calf, from which it is extracted with brine. During the first few days after birth the yield is small and very inferior. In other words, during the period of colostrum, which differs from milk in its composition and properties and is not readily coagulated by rennet, the calf's stomach secretes but little rennet, but as the true milk appears rennet is secreted, and its function is to change a portion of the milk into a soft, semi-solid mass. Thus the young animal creates its first solid food from its mother's milk. Now, the true gastric secretion of adult animals contains in addition hydrochloric acid and pepsin, but these latter are practically absent in very young animals. Pepsin alone (without acid) will not digest the solid food produced by the action of rennet upon milk, so this soft clot passes into the intestine in a form suited for intestinal digestion. As the stomach develops, pepsin and acid are secreted, which would at first thought mean the digestion of this soft rennet clot with but little work for the digestive apparatus. But this is not the case, for a portion of this soft rennet clot combines with the acid and is changed into a denser curd which pepsin can attack. As larger quantities of acid and pepsin are secreted, the acid makes more of the curds requiring pepsin digestion, and with a still further increase of acid makes another yet denser form of curd, so that the amount of work for the stomach keeps pace with gastric secretion. It will not be difficult, with this explanation in mind, to understand why milk is peculiarly suited to the development of a digestive tract which is undergoing evolution.

Now, the stomach of the grown cow, which eats a coarse, bulky food, digests best when fully distended, and that the stomach of the calf is being developed to do the same is prettily shown beyond doubt by the fact that the cow's milk, which completely fills the stomach of the calf, is changed by the rennet of its stomach into a semi-solid of exactly the same volume.

A study of the milks of different species shows that their behavior in the stomachs of their young corresponds closely with the behavior of the adult food in the adult stomach. This is one of the fundamental principles which must be borne in mind in adapting food for young animals. All milks are nutritious and good foods, but just as the digestive tracts of the adults of the different species are not alike and their foods not interchangeable, so the digestive tracts of the young are not alike nor the milks, which are their foods, interchangeable. In short, one of the main problems in infant feeding is not only to select a food containing the proper basic elements to sustain life and supply material for growth, but also to furnish it in a form adapted to assist in the evolution going on in the digestive tract. Milk will of necessity be the basis of such a food, since there is no other similar substance which, while fulfilling all other requirements, will form a solid in the digestive tract under the action of the gastric secretions. No other animal gives a milk which even closely approximates human milk. The cow furnishes the most available supply, and our most intelligent efforts must be directed to making this over so as to be acceptable to an infant whose digestive tract is not at all that of the calf.

The stomach of the human adult is fitted for the digestion of well-divided food, which reaches the stomach after division by the teeth. Thorough mastication is recognized as a prerequisite for good digestion. One need not be highly imaginative, therefore, to grasp the fact that the human infant also requires a finely divided food, such as breast milk forms in the stomach, and that solid masses would cause disturbance. With our present knowledge of the effects produced by the various measures employed in preparing cow's milk for infant feeding, we can readily see that each has aimed to produce, by either mechanical or chemical means, an alteration of the character of the solid formed from cow's milk in the infant's stomach. Let us consider some of the most important of these in detail.

Mere dilution with plain water reduces the bulk

of the precipitated curd, although this is not very effective in subdividing the curd.

It has been extensively taught that breast milk is alkaline, while cow's milk is acid, and that therefore the addition of an alkali to the acid cow's milk is necessary to make it conform to the normally alkaline breast milk, but it is now proven that this is not the case, since breast milk is also acid, and, furthermore, that practice has not even conformed to the teaching. The fact is that casein, which is capable of combining with either alkalies or acids, is not acted upon by rennet and changed into a solid when combined with a sufficient amount of an alkali, such as lime water. Therefore a sufficient amount of an alkali added to cow's milk has the effect of inhibiting the formation of a solid until enough acid is secreted to combine with and practically remove the alkali.

Alkalies or antacids added to cow's milk have, then, the specific property of preventing immediate coagulation in large masses. They may make the masses more flocculent, or even allow the escape of some fluid milk into the intestine. While the use of a moderate amount of the alkali may not only be harmless, but even helpful in approximating the form of the curd of cow's milk to that of breast milk in the infant's stomach, it is an open question whether the ultimate results of the excessive or too prolonged use of alkalies may not be to retard the development of the stomach, which requires work upon soft solids to complete its evolution.

Again, in order to alter the character of the milk solids formed during digestion, certain gruels of barley, wheat, rice, or oatmeal are employed as diluents. These contain soft flocculent matter in suspension which, when dispersed through the milk, mechanically alter the curd and allow access of the digestive secretion to a larger surface. Peptonization was advanced because its action in transforming the casein into soluble and non-precipitable albuminous bodies lessened or totally prevented the formation of solid curd. Its continued use is open to the same objection as the use of excessive alkali, and the peptonizing powder itself contains an alkaline antacid, bicarbonate of sodium.

Yet again, it has been proposed to remove the solid casein from the milk by the use of rennet and to furnish the food in the form of whey. In this form little or no solid can be elaborated from the food during digestion. While many of the measures which limit the formation of solids have important fields in the emergencies and difficulties of infant feeding they are edged tools capable of doing ultimate harm unless used intelligently and conservatively.

Having established the fact that the digestive organs of the different species are not the same, and that the maternal milk of each species is especially adapted to the rapidity of body growth and to the development of the digestive tract of its own young, we may well inquire before attempting to adapt the peculiar food of the calf to the requirements of the human infant what are the special functions subserved in the economy by the various elements of milk, namely, fats, proteids, sugar, mineral salts, and water. Proteid is a builder and a repairer of tissue, and of the blood also, since the blood is a liquid tissue, living cells in a fluid stroma. Fat also has a place as a tissue builder, although within limits, one of less vital importance. It is chiefly oxydized to produce heat. The principal function of sugar and of starch, which is closely allied to it, both being grouped as carbohydrates, is to supply heat and energy. The popular idea of the addition of sugar to diluted cow's milk is that it sweetens it and renders it more appetizing for the child. The carbohydrates are really fuel foods containing carbon (charcoal) chemically combined with water, and their sole food value lies in the energy derived from the carbon which they contain. This is readily demonstrated by dehydrating sugar by adding sulphuric acid (H_2SO_4), which itself contains no carbon but has so strong an affinity for water that it withdraws it from chemical combination and leaves free carbon.

One of our chief concerns in providing a substitute food for an infant must be to provide a well-balanced ration. The elements must be furnished in certain relative proportions. Material for the production of energy must be provided for. This should be derived from carbon, and if not supplied in the form of carbohydrates, the fat and proteid of the food will be called on to furnish the fuel and their utilization for growth will be prevented. If, however, the fat and proteid in the food are still insufficient, the tissues of the body itself will be attacked, with actual loss of body weight. Therefore the first requisite is to give enough sugar (carbohydrate) in the food to spare the fat and proteid for the performance of their own proper functions. Next in importance is the giving of adequate proteid to supply enough building material for the proper construction and development of all parts of the organism. Unfortunately it is the proteid of cow's milk which forms especially dense solid masses in the infant's stomach, and if difficulty is experienced in their digestion, the temptation is to reduce the amount of proteid in order to overcome the indigestion. If this is done and an excess of sugar furnished, as in the giving of dilute sweetened condensed milk, the infant may still show apparent growth by reason of the production of fat, since fat may be formed from carbohydrates. The scales would then perhaps show a proper weight, but blood and physical examinations would show anemia and poor muscular development. Finally, a certain amount of fat is needed in the normal food, but there is less danger in the underfeeding of fat than in underfeeding of proteid, and the amount required by different children is most variable. The best results are naturally obtained from a proper relation of all the elements in the food.

We have endeavored from the study of the analysis of human milk to determine what these relations are, and from these and our clinical experience have found that certain percentages of the elements are in general necessary for well-rounded development, and that while individuals vary much in their tolerance and powers of assimilation, any wide variations from these standards, too long continued, are attended with grave results, which may, however, be so slow in revealing themselves that their true causes may perhaps never be recognized unless this principle is remembered. Reduced to a few words, this fundamental principle may be stated as follows: The food of the infant should contain a sufficient amount of carbohydrates and fat to maintain the vital processes and prevent the proteids of the food from being called upon for this purpose. The proteid should be spared not alone for the repair of tissue waste as in the adult, but to promote the growth and the building of new cells, since young animals retain in their tissues about 70 per cent. of the digested proteid of a normal diet. The amount of proteid in the food must be gradually increased beyond the minimum safety point with which it is necessary to begin, in order not to overtax the digestion with this less readily digested casein of cow's milk. At the same time we may lay down the axiom that the bulk of the proteid in an

infant's food must be derived from the casein of cow's milk because such milk proteid is alone capable of producing a gradually increasing tone of the stomach. The measures adopted to secure the digestion by the infant of a sufficient amount of the casein of cow's milk to maintain the tissues and promote growth will have to be decided by the physician for each individual infant, and the art of infant feeding as distinguished from the science of infant feeding, with which this paper deals, is principally wrapped up in this one point. It is for the physician to determine: whether beside dilution with water he will make such alkaline addition to the milk that it will remain in a flocculent or semifluid state; whether by the freer use of some alkaline antacid like bicarbonate of sodium he will completely neutralize the acid of the stomach and throw the digestion of the food into the intestine; whether he will use a gruel diluent to mechanically separate the milk curd; whether he will combine several of these measures; or whether perchance, in cases of particularly difficult casein digestion, he will stop milk entirely and temporarily feed some food which will not form a solid in the stomach.

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OBSTRUCTION OF THE PYLORUS.*

By ROBERT HURTIN HALSEY, A.M. M.D.,
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In the past few months many excellent articles, written by notable men and dealing with some particular forms of obstruction of the pylorus, have appeared in the medical magazines. You have doubtless read these, and it would indeed be presumptuous to bring up for discussion what might seem to be a repetition of recent literature. What is here presented has been drawn from new sources, for it is based upon cases of obstruction which it has been my good fortune to have the opportunity to study. The cases have been observed in the hospital service or in the private practice of Dr. Quintard, and I wish to acknowledge at this time my indebtedness to him for permission to refer to them.

To read the full histories of these cases would be tiresome, but certain details of the histories and physical and clinical examinations are interesting, because unusual, and these have been selected. Though the number of cases in the series is too small to draw any general conclusions, yet they furnish material for discussion, which is our purpose in presenting them at this time.

Case I.—A young nurse of 32 years of age. When she was 16 or 17 years of age she had more or less stomach trouble, which consisted of dull aching one or two hours after meals. It was never unbearable, nor did she suffer from headache or vomiting. In the practice of her profession she had many trying cases, and in other ways was under considerable mental strain, but with frequent vacations managed to live along in fair health until August, 1904. At that time she began to notice that she had considerable gas in the stomach and a sour, burning sensation in the throat. Both of these conditions were worse toward night, but there was neither nausea nor vomiting. In November, 1904, after eating a pickle with her meal, she had considerable distress and vomited a large amount of food and fluid. She remained in bed for two days and took only a light diet, washing out the stomach every other day. No food remnants were found until a month later.

The sour condition and smarting in the throat continued with more or less severity until the following March, but there was no vomiting. During this month she frequently suffered from "water brash," and would make herself vomit for relief of distress in stomach. The bicarbonate of sodium, which she took to relieve her, she said would "sizzle" as she swallowed it.

She came under observation in April, 1905. Passing the tube at this time into what should have been an empty stomach brought up with marked expulsive force 1,500 c.c. of food. Several meals given subsequently showed a very high acidity—free HCl 36-48 in a total acidity of 52-72—and numerous sarcinæ. The total quantity of return varied in amount from 300 c.c. to over 1,000 c.c. On examination of the abdomen no splash was heard, no visible peristalsis or distension of the stomach was present, nor was a tumor or area of tenderness found. The blood and urinary analyses were negative.

She was kept in bed without food by mouth for three days. Every eight hours during these days she received a nutritive enema. After the fourth day she was given a little broth by mouth, every twelve hours. The frequency and amount of these feedings were gradually increased, so that at the end of two weeks she could take some solid food. Lavage of the stomach with a solution of silver nitrate (1-5,000) was done once daily at first, and less frequently later.

A complete recovery followed and has been maintained. It would seem in this case as though a tumefaction secondary to a gastritis, with a high acid production, was the cause of the obstruction. The happy outcome without resort to surgery indicates that the treatment of certain forms of obstruction will yield to rational therapeutics.

Case II.—A single woman, 24 years of age, thirteen months before admission to the hospital had had an open operation for appendicitis. During that period she had infrequent attacks of right-sided abdominal pain, followed by vomitnig of food. These attacks would occur soon after meals. As the attacks became more frequent in occurrence, a smaller quantity of food would produce vomiting, and, during the few weeks prior to observation, vomiting would follow the eating of a very small quantity. The severity of the pain, which was cramplike in character, was increased not only by eating, but even by assuming the erect position. These paroxysms could be relieved by lying down. Small amounts of fluids could be taken until a few days before admission, when food of any kind produced vomiting.

Examination showed tenderness over all the right half of the abdomen, with an area of greatest sensitiveness 8 cm. to the right of the umbilicus. No tumor could be felt. Examination of material from the stomach showed a high acidity. The study of the blood and urine did not indicate any abnormal condition, other than a reduced hemoglobin. The points of the history to notice are the open operation for appendicitis, and a subsequent gradual increase of obstructive symptoms, with general right-sided tenderness.

To relieve the symptoms an operation was undertaken by Dr. Lloyd, who found the greater curvature and pylorus of the distended stomach drawn over to the right side and adhering to the ascending colon. This amount of distortion made the outlet form an acute angle with the rest of the stomach, and as the duodenum still retained its normal relations, a second sharp angle was formed in that tube at the beginning of its second portion. In addition there was an adherent V-shaped turn in the ascending colon, midway between the caput and the hepatic flexure. These adhesions were broken up and

*Read at a meeting of the Section on Medicine of the New York Academy of Medicine, November 21, 1905.

the symptoms temporarily were completely relieved. Four weeks later, all the symptoms returning, Dr. Lloyd undertook a second operation, which revealed the formation of a new and similar condition of adhesions about the stomach. Again the adhesions were relieved, and, in addition, a gastro- and enteroenterostomy were done. Relief was permanent after this combination of operations.

The history and physical signs in connection with the condition discovered at operation make a complete picture of the gradual progressive changes adhesions may bring about in the position of the stomach. Sedatives and lavage, while they relieved the symptoms in the early stage, naturally could not cure the condition, while an operation alone, as finally performed, did give complete relief from further trouble.

Case III.—A small woman, 34 years of age. She dates her trouble from 1898, when she was treated here in New York for a supposed attack of gall-stones (whatever that may be), which it was claimed had been dissolved out of the gall-bladder by the use of olive oil and milk. Continuing long after the time a cure was declared, she had a variety of symptoms which were classed as "indigestion." In the latter months of 1902 the distress after eating was so severe as to compel her to restrict herself to soft or fluid diet. After taking moderate amounts of solid food, cramping pain always preceded the vomiting, which relieved her. Even a large amount of soft or fluid food would cause her the same distress when first taken, but afterward the intensity would gradually diminish. As the amount and character of the food changed, her general nutrition suffered, so that when she came under observation she weighed but fifty-seven pounds, which indicated a loss of forty pounds.

No tumor could be felt, nor was there any tenderness. The signs of obstruction of the pylorus were evident, and on testing the caliber it was found to be so diminished that koumyss would not pass out, though water or milk with an equal amount of vichy would. The blood, urinary, and gastric analyses were negative.

To increase the caliber of the pylorus, Dr. Lloyd did a pyloroplastic operation of the Heineke-Nikulicz variety. The pylorus was found to be very much thickened and a probe could just pass through the lumen. The gall-bladder was found to be free from adhesions or a palpable calculus, and on this account the inference was drawn that the old attack of gall-stones was really an ulcer of the pylorus and the obstruction was the subsequent contraction of the cicatrix. In the absence of adhesions, pyloroplasty was preferred because disturbing least the natural relations of the stomach and intestines.

Case IV.—A working woman, 43 years of age, a native of Sweden. During the preceding ten years she had frequent periods of burning sensations in the stomach and sometimes attacks of severe pain which radiated toward the back beneath the left scapula. Often she would find relief by vomiting a large amount of material which she described as "coffee-ground like." There was no history of faintness or dizziness at any time, or any vomiting of red blood. After the attacks she could eat her usual meals. Two weeks before admission she had what she considered the worst attack, which was accompanied with distension of the abdomen. She was very thirsty and hungry, but the pain was aggravated so much by either food or drink that her craving went unsatisfied most of the time. But finally, as she was unable to eat or drink and the epigastric pain seemed to be increasing in severity, she sought relief at the hospital.

Examination of the abdomen at this time showed in the midepigastric region an ovoid tender tumor, 5 cm. in the long diameter, and moving with the respiration. To the left of this mass the peristaltic movements of the stomach were plainly visible. With a soft stomach tube a large quantity of foul-smelling, dark-colored fluid was removed. This contained free hydrochloric acid and numerous sarcinæ. Lavage was completed and bismuth and alkalies given. On the second day the tumor had diminished more than half, and it was less tender. As the tumor diminished in size it was hoped that the obstruction also would be relieved, but it did not appear to be affected in the slightest degree. She was losing flesh rapidly and to relieve her Dr. Willy Meyer operated, doing a gastro- and an enteroenterostomy. Exploration at the same time revealed at the pylorus a mass which seemed to be due to an old ulcer having perforated through the stomach and become walled off by adhesions. Unfortunately the condition of the patient was so feeble that she died on the third day after the operation, apparently from sheer inability to respond to stimulants or food.

Case V..—A German carriage-maker, 38 years old. His previous history was good until ten months before admission. During this period he suffered from gaseous distention of the stomach, with pain after meals, nausea, and sour taste, but he never vomited. In the last few weeks the pain, which seemed to be situated low down in the abdomen, was worse toward evening. He had lost thirty pounds of weight since the beginning of his trouble. The abdominal examination revealed an enlarged left lobe of the liver, and a distended stomach with active peristaltic movement. In the region of the pylorus an indefinable tender mass was to be felt.

Analysis of the blood and urine did not show anything important. Removal of the stomach contents and subsequent test meals showed absence of free hydrochloric acid, the presence of lactic acid and Oppler-Boas bacilli. He was losing strength very rapidly, and to relieve his condition a gastro- and enteroenterostomy was done by Dr. Lloyd. He failed to pick up, however, and died one week later. The condition found was adenocarcinoma of the pylorus.

Case VI.—A man, 52 years of age. He had always been well until three months before admission, when he first noticed he was losing weight. He declared that at that time he did not have any trouble with his meals, but that six weeks before admission he did begin to have distress after eating. This consisted at first of belching after meals. Soon, however, he had cramping pain to the right of and on a level with the umbilicus. This pain was distinctly more severe after meals and when the bowels were constipated. In the mornings of the last few weeks he would have nausea and retching, and, finally, he would vomit remnants of food which he had eaten on the preceding day, or several days before. During the three months he had lost thirty-seven pounds from his usual weight. In looking him over the distended stomach in active peristalsis was to be seen some 5 cm. below and to the right of the umbilicus. At this point also was found a sensitive, hard, freely movable tumor about the size of an egg. Blood and urinary analyses were negative. On passing the stomach tube, about 1,500 c.c. of foul-smelling, dark brown fluid was obtained. There was plenty of lactic acid and Oppler-Boas bacilli, but no free hydrochloric acid.

The stomach was thoroughly washed out and an Ewald test meal given the next morning, and examination of this showed lactic acid and Oppler-Boas bacilli. On the third day of the washing he

felt much improved and desired to go home. The next morning an Ewald meal revealed on examination the presence of free hydrochloric acid and neither lactic acid nor Oppler-Boas bacilli. The next day, and on several subsequent days, a test breakfast showed free hydrochloric acid varying from 18-25, combined hydrochloric varying from 16-18, and the total acidity varying from 50-70. There were no sarcinæ.

Operation was advised and accepted. Opening the abdomen, Dr. Lloyd found a cancer of the transverse colon, with adhesions to the pylorus, which was obstructed by the compression and distortion.

Case VII.—A man, 69 years of age, with a history of perfect health until some three months before observation. The obstructive signs came on rapidly and his loss of weight was considerable. The distended stomach in active peristalsis, but without a palpable tumor, was the result of the abdominal examination. The blood and urine analyses were negative. Examination of the stomach contents revealed free hydrochloric acid and sarcinæ. The starch digestion was complete—neither dextrin nor erythrodextrin were present.

Dr. Hartley did a gastro- and enteroenterostomy, which was followed by uneventful recovery. On exploration a new growth was found on the lesser curvature near the pylorus. The situation was too high in the abdomen to permit of palpation through the muscular wall. Since the operation there has been an absence of free hydrochloric acid and a very low total acidity.

To recapitulate—Here are seven cases of obstruction of the pylorus, four of which are benign and three malignant. The diagnosis of obstruction was made upon the results of the physical examination and the clinical tests of the motor function; the differential diagnosis as to the probable etiology was founded upon a careful study of the previous history of the individual. The results of the operative findings should help to indicate in future cases a solution of the problem previous to operation, and so aid in a choice of treatment. In the seven cases, six were operated upon and five of those operations were gastroenterostomies. Of the three cases which were benign in character, only one was suitable for a pyloroplasty. One case only of the seven was permanently relieved by medical treatment.

Examination of the Urine.—The amount passed in twenty-four hours is diminished, its specific gravity is increased, and the percentage of urea is high. Indican is present in large excess. The ratios of urea and uric acid, ethereal and mineral sulphates, urea and chlorides, may or may not be greatly disturbed, but are usually depressed.

Examination of the Blood.—The hemoglobin is usually diminished, but in the malignant conditions, while the absolute percentage is lower than normal, it is often higher than we would expect to find, judging by the appearance of the patient. The absolute and differential count of the erythrocytes and leucocytes shows nothing characteristic.

As Dr. Sondern says, we find on examination a better specimen of blood than expected, because the vomiting diminished the volume of fluid in the circulation. The diminished volume, or increased concentration, so to speak, accounts for the greater number of cells found in a cubic millimeter. At the same time this phenomenon can explain the great variation, sometimes observed from day to day, in the hemoglobin and numerical count.

In analyzing these cases, the following may be observed:

1. A history of digestive disturbance extending over several years accompanies the non-malignant conditions; while a perfect euphoria, followed by a few months of increasing difficulty, is associated with the malignant cases.

2. A stomach distended with food contents and in active peristalsis, has an obstruction at the outlet, whether a tumor can be felt or not.

3. An obstruction of the pylorus may be due to a tumor which can be felt in another than the right upper quadrant.

4. The presence of lactic acid and the Oppler-Boas bacillus must not be interpreted to indicate the presence of a cancer; nor, on the other hand, does the finding of free hydrochloric acid and sarcinæ contraindicate malignant disease.

5. Retention of food in the stomach can cause a suppression of the secretion of hydrochloric acid and permit the formation of lactic acid and the growth of Oppler-Boas bacilli.

6. The selection of treatment should depend upon the probable cause, as relief can be obtained in some cases without operation. In selecting the operation, pyloroplasty should have the preference when a choice is possible.

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CLINICAL ASPECT OF RHEUMATIC ENDOCARDITIS.*

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Just so much as clinical lectures are supplanting didactic lectures and are correspondingly doing more good in impressing the salient features of any disease both upon the students and the clinician, so it is becoming to be known and more appreciated by the laity, that the best and most successful results are obtained where a systematic examination of the case is made. The prejudice against hospital and institutional treatment is thus lessening every year and the public is fast learning that a medical school hospital with its open ward clinics is the best place for the correct handling and treatment of all difficult or obscure cases. It is rather surprising that, hampered as we often are by the neglect of a thorough examination of a case, we can empirically treat successfully so many cases. It is the old staff, the *vis medicatrix naturæ* or the phagocytes, which leads us out of the wilderness. There are none of us who, seeing results, do not wish that we sometimes had a little more foresight and less "hindsight." Although the ravages of rheumatism do not leave as wide a wake as some hemic disorders, yet each pabulum of complication and suffering lessened or removed renders the human organism stronger to combat its other enemies.

There has been no abatement for a long time in the indifference and careless haste with which we treat and dismiss our arthritic cases. Perhaps the sequelæ of several of my own bad cases are responsible for the paper this evening. To find out if I was the chief or only offender in this regard, I have searched the records of several of the hospitals of our city for the following information regarding rheumatic arthritis: (1) In what proportion of cases was the heart examined? (2) In what proportion was complaint made of the heart? (3) In what proportion was heart trouble found, when complaint was made? (4) In what proportion was heart trouble found when no complaint was made? (5) In what proportion was heart trouble found, when a foreign complaint was made?

*Read as "The Monthly Essay" before the Medical Society of District of Columbia, December 6, 1905.

To get at these different varying conditions required patient and exhaustive comparison of many rheumatic records. As the investigation had to be somewhat limited, only acute articular cases of rheumatism were sought, gonorrheal rheumatism being also excluded. All records relating to endocardial or valvular disease were gone over to determine their dependency or not on articular rheumatism.

Another line of investigation was started at the same time in my service at the Central Dispensary and Emergency Hospital, and this additional information was requested and recorded regarding all cases: (1) The condition of the heart valves of all rheumatic patients. (2) Has the patient had acute articular rheumatism, and at what age? (3) Has the patient complained of the heart?

One is utterly shocked and pained when taking up this investigation of the dependency of endocardial diseases upon rheumatism, to find how long the patient and the physician have both been unaware of any cardiac lesion. Patients will come for all variety of complaints, some closely and others very distantly connected with ailments of the heart, such as

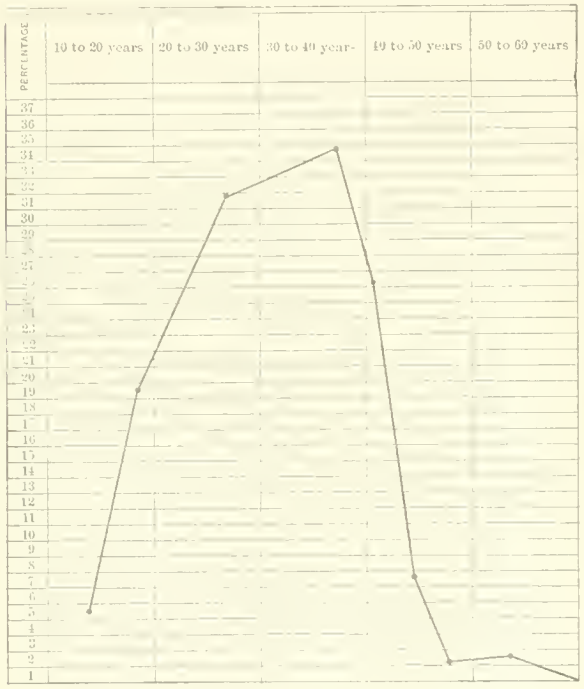

CHART 1.—Age at which acute rheumatism occurs.

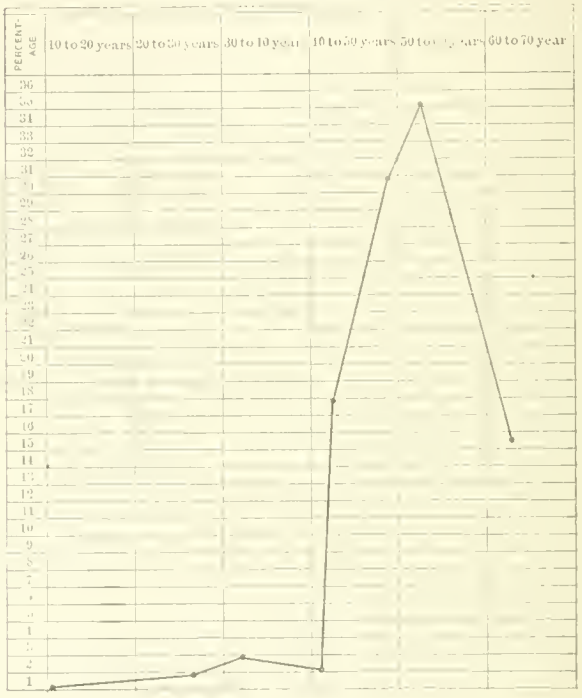

CHART 2.—Age when valvular disease is *discovered*.

dyspnea or vertigo, but the patient quite likely does not refer to his heart in any way and never mentions the antecedent attacks of rheumatism. It is a strange fact that in many of those patients who have had rheumatism and later on complained of the heart, no definite heart lesion could be found. Your experience may be somewhat akin to mine—that very extensive cardiac lesions may and do exist for years with no disabling consequence to the patient or giving evidence, without a careful physical examination, of the serious lesion which exists.

You will find that about fifteen per cent. of cases suffering from rheumatism were systematically examined; that about eighty per cent. of those examined, which includes acute and old rheumatics, showed heart lesions, that many of these eighty per cent. did not complain of the heart or mention their antecedent rheumatic attacks, but came to the dispensary or entered the hospital for such conditions as epilepsy, difficulty in swallowing, chronic bronchitis, dyspepsia, hemorrhoids, nervousness, etc. The proportion for heart lesions following first attacks of acute rheumatism is nearly fifty per cent. Hare gives a record of 842 cases, in 420 of which endocardial trouble was found, or fifty per cent. The attacks of articular rheumatism are most frequent between the ages of thirty and forty, and then twenty and thirty, but the valvular lesion is frequently not *discovered* until between fifty and sixty. In this series no cases of children under ten years are considered. Another point which seems of interest is, how few patients, proportionately speaking, of the whole number of cases in a general hospital are rheumatic cases; and how different it is in, and how it stands out in contrast to, a dispensary service, where a large proportion are complaining of or being treated for rheumatism. It tends to show that rheumatics do not retire until badly worsted and continue to do a good share of work for an indefinite period even with severe complications. Of 831 cases of all sorts treated at the Garfield Hospital Dispensary, only thirty were for rheumatism, or 3.72 per cent. At the Central Dispensary and Emergency Hospital, of 15,242 cases treated, of all sorts, 200 were for rheumatism, 103 being acute and 97 chronic and subacute, or 1.31 per cent; but when you consider the general medical clinic alone in which there were 1,562 cases, the percentage of rheumatism is 12.12 per cent.

Another interesting comparison shows that although there are three times as many women with rheumatism in the wards of the hospital, there is double the number of men seeking the dispensaries for rheumatism. The sterner sex being the breadwinner, cannot lay down so soon, but fights on with crutch and panting breath, a cold and clammy hand and brow, heavily waterlogged. The ratio of women in the hospital to those in the dispensary is as three to one; and in the case of men, the hospital population is to the dispensary as one is to two.

To show what college clinics do for a hospital or dispensary and indirectly, but which is more important, for the patient, student, and physician, a comparison for six months before clinics were organized shows five systematic examinations of the chest and heart and seventy-four problematical diagnoses; and for six months after clinics were established twenty-one systematic examinations and fifty-nine problematical, or the systematic increased four times as

the problematic fell off one-third. Among these cases examined were found fifteen with heart lesion and nine with no evident trouble following rheumatism, giving a percentage for valvular lesions of 9.2 per cent. for the 159 cases of general diseases examined in the medical clinic.

In twenty-six fatal cases of rheumatism, the location of the heart lesion, as determined at autopsy, was as follows: Mitral valve, 14; aortic valve, 6; both valves, 2; none, 4.

It needs no argument to convince you that all cases of acute articular rheumatism need rest, not only of the joint but, which is more important, of the heart. All autopsies show that the valve which has the most work is largely the first part to suffer; therefore lessen its tension and reduce the number of its contractions, help the excretions with copious draughts of water, alkalinize the secretions, limit the nitrogenous food, apply ice or sinapisms over the heart, use salicylates or, if they are depressing, salacin; a mixture with the iodides often protects the heart. I am firmly convinced that slight biliary stimulation, when the fever and the delirium and the heart run riot, is often of the greatest help. Remember that even a damaged and leaky valve has some power of rehabilitation and that the heart may for years continue to give very satisfactory compensation.

919 McPherson Square.

A NON-OPERATIVE METHOD OF TREATING PROSTATITIS.*

By WM. BENHAM SNOW, M.D.,
NEW YORK.

Inflammation of the prostate gland of various types and degrees has constituted one of the most distressing, most dreaded affections of advanced life in the male. Nor is it in advanced age only that prostatitis has blighted the life of the sufferer. There is no more baneful condition or more dejected sufferer than the sexual neurasthenic. What has been accomplished for these human wrecks in the past has been generally unsatisfactory to both the general practitioner and expert because no drug or local method of treatment except the employment of electricity has seemed effectively to relieve the local inflammatory process. The employment of electric currents has been looked upon with a degree of skepticism that was always relative to the want of knowledge of their employment and physiological effects.

Success in the treatment of numerous cases that have come under the writer's observation will warrant at this time the statement that in electricity we have a certain relief for all cases except those in which a malignant or tuberculous process is present, or cases in which fluctuation from the presence of pus is already present; the degree of success depending upon the amount of hyperplasia and degeneration that has taken place in the structure of the gland.

In the early stages of simple prostatitis the prognosis for an early and complete cure is uniform. In the later cases the abatement of the inflammatory process and the restoration to a normal condition relative to the degree of organic changes that have taken place is the certain result.

Prostatitis may be divided into acute, chronic, and complicated cases.

The acute cases may commence with an acute inflammatory process terminating in an abscess, or may be of slower progress accompanied with a large degree of infiltration and marked tenderness on manipulation.

The chronic cases of prostatitis are marked by a degree of lost function or inactivity of the gland, due to chronic congestion and infiltration going on gradually with the production of hyperplastic tissues in various degrees. In others the secretion becomes abnormal in character—ichorous and irritating. The fibroid type in which the development of the fibroid growth often extends into the bladder gradually encroaches upon and obstructs the urethral passage, increasing with age. The complicated cases may be associated with gonorrhea.

The Etiology.—In these cases there has been some irritating cause, usually arising from excesses, masturbation, or unnatural intercourse, but in many cases occurring without any evidence of a local cause. The pressure of hardened fecal matter against the exposed gland undoubtedly in some cases will set up an initial inflammatory process. Once instituted, it progresses as chronic inflammations usually do. Nature, unable to restore the conditions to normal, involves the structures of the gland in a chronic inflammatory process. It is the establishment of *stasis*. The old theory of the process of inflammation by which it is claimed that it is "nature's process of repair" seems to be contradicted in this as in most inflammatory conditions. If nature could increase the flow of blood to an inflamed part in just sufficient quantity to supply the demands for repair, an increased blood supply would be favorable to the restoration of the normal condition; but on the contrary, when an irritating or inflammatory process is once instituted, we have the establishment of a region of local congestion with stasis which tends to the institution of a chronic process of infiltration and later the development of hyperplastic tissues. When infection is present, however, this is beneficent, as it walls in the pus, but otherwise it establishes a chronic stasis.

Chronic inflammatory conditions result from nature's failure to overcome this condition, and so it is in prostatitis. The local infiltration and stagnation, which result from the establishment of the inflammatory process tends to a progressive hyperplasia in the gland with steady increase in size and the development of tissue, which, pressing forward upon the urethra, obstructs the urinary passage. This process in some cases extends to the vesical sphincter, producing such a degree of congestion and vesical irritation that the patient has frequent calls when the bladder is not distended. Other patients are very apt from neglect with overdistention, chronic obstruction or an indiscreet use of alcohol, to suffer from retention resulting in dilatation of the bladder leading to a subsequent presence of residual urine. The decomposition of the urine resulting from this condition induces a new pathological process which still further aggravates the suffering of the patient. Catarrhal cystitis and its accompaniments in a dilated bladder are the greatest obstacles to a complete cure of these patients, especially when it occurs in the aged.

The indication for the treatment of prostatitis of all except the infected and malignant types consists in the relief of the condition of local stasis and a restoration of circulation and the functions of the lymphatics and the other structures of the gland. The adoption of the method of stripping or manual massage and later vibratory massage and douching in the treatment of these cases has tended in a measure to relieve the condition. The failure to cure resulting from this plan of treatment, however, is due to the fact that the tissues, though relieved of

*Read before the Clinical Society of the New York School of Physical Therapeutics, May 19, 1905.

tension, are rendered relaxed and not restored to a tonic condition as they are by the high potential electric currents.

The *modus operandi* of the properly applied method induces contractions of the structures of the gland, the gland itself becoming intrinsically the means of relieving itself of infiltration and the other products of inflammation. Following this process a tonic circulation is restored throughout the gland, the fluid accumulations having been expelled. By this means the chronic process is overcome so far as is possible, always depending upon the degree of organic change that has taken place, which may impair forever the performance of some of its active functions. The process of inflammation will be abated and to that extent the local condition will be cured.

The prognosis in these cases will be relative to the degree of organic structural change that has taken place prior to the institution of treatment, the character of the inflammatory process as to infection or malignancy, and the management of the cases. It may be truthfully said in all cases where an inflammatory process has developed without the presence of pus or other infection or malignant process, the outcome of the treatment is certain of success. In aged men in whom the bladder is dilated with the consequent presence of residual urine, it will take considerable time and careful management to restore tone to the relaxed and dilated organ. In some cases, however, the condition disappears with the relief of the local inflammation. The hyperplasia will in the larger part persist, but the infiltration and other products of inflammation will be generally eliminated under skillful management.

The method of treatment I have employed in these cases is one fraught with absolutely no danger to the patient, but requiring a degree of painstaking attention to technique which is necessary to obtain the best results. For the benefit of those who are not familiar with the static wave-current and the employment of the vacuum tubes, which are the means used by the writer in the treatment of these cases, it should be made clear that the employment of the currents of the static machine effect in no wise electrolitically the tissues. The quantity or amperage of these currents is so small that no cauterant or electrolytic action is produced, the effect being purely mechanical. An electrode placed alongside any organic structure when this current is properly applied will induce contraction of its muscular and yellow elastic fibers. If the administration is regulated to a low rate of periodicity or interruption, which will allow pauses between the periods of contraction permitting a degree of relaxation during the process of treatment, the most favorable results will be obtained. In other words, if we employ a current in which the rate of interruption does not exceed 300 per minute, sufficient intervals will intervene between the impulses of contraction and the interruption, with relaxation, to produce more pronounced effects upon the inflammatory process than if higher rates of interruption are employed. The latter will hold the gland in a state of tonic contraction without permitting the intervals of relaxation.

The result of this plan of treatment is salutary, the effects of the treatment being most noticeable in an infiltrated gland after a judicious application of the current. The gland will become remarkably reduced in size and softened throughout the whole structure. If these administrations are made daily the condition will not relapse and the gland will be found each day smaller and softer, relative to the intensity or degree of congestion or infiltration present.

The length of spark-gap, which is the measure of the intensity of the action of the current upon the congested gland, must be regulated to meet the indications of each particular case. In the acute congestive condition where pus is not present, but an abscess pending, the application of the current to the gland will cause severe pain, when the spark-gap is even less than an inch in length, which is occasioned by the contraction of the inflamed tissues. In these cases, during the administration, which should usually be for twenty minutes, the spark-gap may be gradually lengthened as the cessation of pain permits. At the close of an administration under these conditions a spark-gap of two and one-half to four inches will be administered without causing pain, because the tissues have been disengorged and the pressure diminished.

When the static wave-current is used in the treatment of these cases, the positive pole should be connected to the electrode and the negative pole directly to the earth by a metallic path. The writer's method is to administer the current to the patient while lying upon his side, and holding the electrode with his hand, firmly (but not with too much force) against the gland. It may be held in place in this way or with an *x*-ray tube holder, the electrode being thus held in a fixed position against the gland. It is generally better, however, to educate the patient to hold the electrode in just the right position with the hand during the administration. The treatment may also be administered, in lieu of a properly constructed chair, with an electrode designed by the writer, upon which the patient may sit, the electrode being inclined forward to just the right degree and held in position by a properly adjusted cushion. This method, however, is not nearly so certain or practical as the method employed with the patient lying upon the side.

In the subacute cases it is possible to use a spark-gap of greater length at the outset, but in the writer's experience the length of the spark-gap should never exceed four inches, and as a rule two and one-half to three inches is sufficient. This will be usually penetrating enough to affect the deeper structures of a very much hypertrophied gland. The amplitude of the current which marks the depth to which contraction will take place is measured by the length of the spark-gap.

The promptness with which relief follows in these cases, and the extent of it, is surprising to those who are not familiar with the method. The applications should be made daily in most cases for the first ten days, and in some should be continued daily for a longer period. The administration in the milder cases will be sufficient if made for but ten or fifteen minutes. It is a noticeable fact that these administrations greatly accelerate or increase the activity of the glandular functions and produce a degree of increased excitement in many cases which call for a diminished frequency of administration and shorter application of the current.

The static wave-current administered, as it should be, from the positive side of the machine, the negative being grounded, is *par excellence* the best electrical modality for the treatment of prostatitis, though probably in many instances equally good results may be obtained by the employment of a properly adjusted vacuum tube connected directly from the positive side of the static machine.

The metal electrodes employed with the wave-current may be of various designs, according to the shape of the gland. In the writer's experience, how-

ever, the straight rectal electrode shown in Figure 1 has been found to be the most readily adapted and practical in a large variety of cases. The electrode

Fig. 1.

is usually passed in so that the bulbous portion lies with its convexity against the upper end of the gland and should be held in contact between the two lobes. It is not necessary that a large part of the gland be brought in contact with the electrode, the whole gland being thrown into contraction when the spark-gap is of sufficient length. A rapid discharge produces a tonic, steady contraction, while the lower rates of interruption induce a distinct vibratory or pulsatory sensation in the gland.

The electrode shown in Figure 2 will come in contact with more of the surface of the gland and is curved on the upper extremity so that it will reach

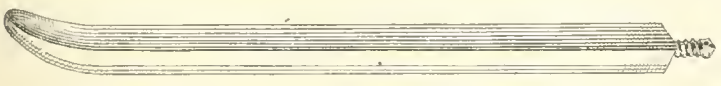

Fig. 2.

over its upper portion, coming in contact with the gland above. The straight electrode shown in Figure 3 may be preferred in some cases, though on general principles one either in the form of Figure 1 or having the curved extremity—Figure 2—is better adapted to the conditions present. Where it is desirable to make an application to the vesicles, the electrode should be carried up in contact and pressed

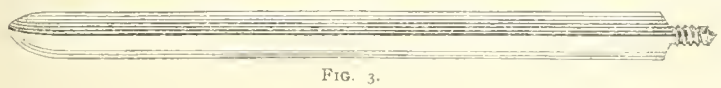

Fig. 3.

forward against the vesicles, when it is apt to be held away from the prostate if the patient holds it with the anus as a fulcrum.

The vacuum tubes employed are the ordinary glass hemorrhoidal tubes shown in Figure 4, which serve an excellent purpose for the treatment of prostatitis, though in some cases they may not be long enough, and it may be better to employ the curved electrode which may or may not be insulated where it passes through the anus. Another glass electrode made, having an anterior curved surface, may also be employed in the treatment of this affection. It does not seem to matter what sort of electrode is used, provided enough current strength is employed

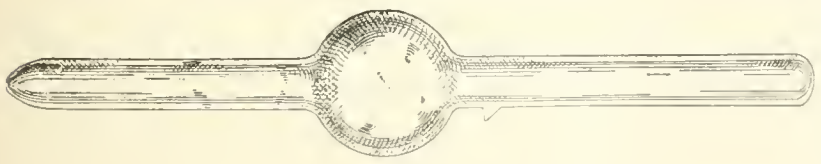

Fig. 4.

to produce a tonic vibratory effect, inducing contraction of the tissues of the affected gland. Other electrodes may be used on the urethral side of the gland, for which the ordinary metallic sound, having a wire attached to the upper extremity and held in position by the hand, serves an excellent purpose.

Vacuum electrodes, made in the shape of urethral sounds, may also be employed in cases having considerable irritation in the urethra, producing a remarkable degree of relief. The vacuum tube administration should not exceed ten minutes and should be applied directly from the static machine (positive side—negative grounded) as when applied for the rectal treatment. The application of the vacuum tubes directly from the machine when the spark-gap is long enough induces a distinct vibratory effect associated with the tissue contraction. This effect with the vacuum tubes has not the same characteristics from any other source of current, or when administered in any other way.

The writer's attention was first called to the value of these currents in the treatment of prostatitis when treating a case of neuritis in which the lesion was located in the pelvis. An examination of the rectum showed a very much enlarged prostate gland. A metal electrode was placed high in the rectum with a view to relieving the neuritis, and incidentally the gland was very much reduced in size and softened after the first administration. This suggested its employment in other cases and led to the present method of treatment, which has been in use by the writer and others for the past five years. During this period the writer has treated about 40 cases of all classes and conditions in patients of different ages, and in no case has there been a failure to produce some degree of improvement. In 75 per cent. of the cases treated there has been a complete relief from the symptoms and a cessation of the disposition to relapse. A few cases will illustrate the method of treatment and the usual result obtained.

Case I.—Mr. G., aged 63, called May, 1901. The patient came under observation suffering from a severe cystitis associated with a marked enlargement of the prostate gland, with almost complete obstruction of the urethra. For four years the patient had been obliged to rise three or four times every night, and during the month preceding the institution of treatment had not retired at all, from the fact that he would be compelled constantly to rise to void his urine. He was referred by the writer to a specialist for examination and treatment. Internal medication was prescribed, but gave him no relief. At the end of two weeks he returned, stating that if something was not done he would feel compelled to destroy himself, as he could not live in that condition. Previous experience suggested the administration of the wave-current, which was applied with the straight rectal electrode previously described, held by the patient against the prostate gland. From the institution of the treatment the relief was marked. Administrations were given daily for the first ten days, and then every second day to the end of the third week, at which time there was absolutely no tenderness. The gland was greatly reduced in size and the patient had ceased to be called upon to rise at night and was voiding his urine with comparative ease. Treatment was then discontinued and he has since remained well without the necessity of rising at night.

Case II.—Mr. B., age 32, railroad switchman by occupation, had suffered for five years with pain over the sacrum and extending down the inner side of the thighs, also with a feeling of depression and dejection, together with marked impairment of the sexual functions. The patient called in June, 1902. At the first examination the prostate was very much enlarged and so tender that the first contact of the examining finger caused severe pain. The straight rectal electrode shown in Figure 1 was

placed in position and held by the patient, who was treated lying upon his side. The wave-current was administered for twenty minutes. At the commencement the spark-gap was opened one inch, and caused such severe pain that it was necessary to shorten it considerably. During the twenty minutes of the administration the discharging rods were gradually separated so that at the close the spark-gap was fully three inches. The sense of relief which followed the administration was remarkable, the gland having been reduced fully one-third in size and very much softened throughout its whole substance. The same application was made daily for one week, at the end of which time the patient had made remarkable improvement, the gland having been reduced to nearly normal and being not at all painful upon examination. The treatments were then continued every second day for another week, at which time the patient was discharged, and there has been no recurrence to the present time.

These cases illustrate the results in the most difficult stages and conditions of the affection, and are cited for this reason. Other cases of the same type and class have responded with the same degree of uniformity and lead to the following conclusions:

1. Where simple congestion is present in the early stages of the affection the relief is prompt.

2. When the gland has been enlarged for a number of years with resulting infiltration and development of vesical irritation and obstruction of the urethral passage, the lesion is capable of being abated and the congestion relieved with the absorption of infiltrated exudates, the hyperplastic tissue only remaining.

3. In the aged, in whom the gland has become greatly enlarged, and is dense and hard from the growth of hyperplastic fibroid tissue, the inflammatory process will be abated, affording a degree of relief to the obstruction commensurate with the site and extent of the inflammatory process. The dilatation of the bladder which has intervened may be greatly relieved and cured in most cases by the persistent application of the electrical current over the pubis and by an electrode carried high into the rectum and pressed forward against the bladder, together with judicious washing of the bladder and the use of strychnine. The current applied in this manner induces temporarily contraction of the muscular coats, and finally restores sufficient tone to enable the organ completely to empty itself.

The perfect result when dilatation has intervened will depend upon the chronicity, and the patient's capacity for recuperation. The complicating seminal vesiculitis in these cases is successfully treated in the same manner, restoring a normal condition and function and relieving the irritation induced thereby.

These results, which have been obtained in the succession of cases which have come under the writer's observation, lead him to urge at least a thorough trial of the method by others. A measure which is as purely mechanical as massage offers no element of danger. The technique is simple and the method has been successful.

349 West Fifty-seventh Street.

A NEW METHOD OF TREATMENT OF ACNE.

PRELIMINARY REPORT.

By ELI MOSCHCOWITZ, M.D.,

NEW YORK.

This method consists in the application of the well-known principle of Bier, in the treatment of inflammatory processes by inducing hyperemia. The value of hyperemia as a curative agent in acute suppurations was announced by Bier early this year, in the *Münchener medizinische Wochenschrift*, Nos. 5, 6, and 7, 1905. In his earlier efforts, hyperemia was obtained by the use of the Martin bandage applied proximally to the inflammatory focus. More recently his assistant, Klapp, has demonstrated that a local hyperemia limited to the inflammatory process may be obtained by the use of various forms of dry cups; this is especially applicable in localized suppurations of the soft parts, such as circumscribed abscesses, phlegmons, carbuncles, furuncles, etc.

The advantages claimed by Bier and Klapp for this method of treatment are: (1) It is painless; (2) the pain due to inflammation is relieved very quickly; (3) no incisions, or at most very small incisions are necessary; (4) the abscesses heal in one-third to one-half the ordinary time; (5) there is no scar formation; (6) the method is simple.

Influenced by the results that I had witnessed of the successful treatment of inflammations by hyperemia alone, and by the accumulating mass of evidence, that has appeared since the publications of Bier and Klapp, which seems to confirm their observations, I applied the method to the treatment of acne, a condition in which these methods have not, so far as I am aware, been suggested. Eight cases have thus far been treated, and the results in every case have been so good, compared with those obtained by the ordinary and well-recognized methods in the treatment of this condition, that I have deemed it advisable to publish my results, even though I realize that the number of cases thus far treated is still too few to warrant general conclusions being drawn. In many of these cases the acne had been treated for months, or even years, with discouraging results.

The method is very simple. An ordinary dry cup with rubber bulb attachment is used. The edge of the cup must be broad, and the diameter varies from three-quarters of an inch to one and one-half inches, depending upon the part of the face to which the cup is applied. The cup is applied to the affected area of the face for one hour every day, preferably in the evening. If the application is made twice a day, for an hour at a time, more rapid results will be obtained. The suction must be of the slightest character, so that the least pull will separate the cup from the skin. This point is emphasized for two reasons; first, because greater suction is not so efficient, and may even aggravate the condition; and secondly, because if more suction is employed, a disagreeable ring may form which takes a day or two to disappear. The cup must be removed every one or two minutes, and reapplied to permit of a new influx of blood. The applications are begun over that area of the face in which the acne pustules are most numerous, and are repeated daily over the same area until the pustules have disappeared. The cup is then shifted to another part of the face, and a similar course is pursued. This is repeated until the entire face has been treated. It takes from two to five applications over each area, until a satisfactory result is obtained. It is needless to say that if two cups are used at the same time the duration of healing will be reduced one-half.

As far as I can determine, this method does not prevent the appearance of new pustules, although it has seemed that they relapse decidedly less frequently than before treatment was begun. As soon as a fresh pustule has appeared the cup must be reapplied, until it disappears. No other method of treatment was used in any of the eight cases.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN. A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, January 13, 1906.

THE DIFFERENTIATION OF THE STREPTOCOCCI.

THOUGH it was long believed that all streptococci were varieties of one and the same species, the idea has been gradually gaining ground that specific differences exist between the individual types which are real rather than apparent. No convincing evidence has been adduced, however, by means of which this perplexing question may be definitely decided. This uncertainty with regard to the relationship of the streptococci to each other is in marked contrast to the pathogenic importance of the group, which assumes an essential and considerable part in the course of many acute and chronic diseases. It has been sought to combat the effects of this organism by the use of an antitoxic serum, but the element of uncertainty which attends the present indiscriminate employment of the latter is certainly not in favor of any conception of a "unity" of the streptococci.

The characters of this type of microorganism which have been most frequently studied are their morphology, their mode of growth in various culture media, their exhibition of virulence in experimental animals, and, finally, their agglutinative and hemolytic properties. In a recent contribution to this subject, H. M. Gordon (*Lancet,* November 11, 1905), directs attention to the fact that the evidence obtained by comparing streptococci with reference to these points has not been made sufficiently convincing to lead bacteriologists to abandon their position of reserve, and the question naturally arises whether the criteria just referred to are the best by which the various members of this group of bacteria may be studied. Dr. Gordon believes that there are other inherent properties of streptococci in addition to those mentioned, by means of which the individual types may be discerned and identified. He has studied this matter very carefully for a number of years, and has subjected his theories to extensive tests. In an investigation of this kind the first matter to be determined was the nature of the cultural characters in regard to which streptococci exhibit the sharpest differences among themselves. As a result of the observations, a series of tests were found available for the purpose, the majority of which depended on the ability of the streptococci to manufacture acid when cultivated aërobically in slightly alkaline broths. These were kept for three days at a temperature of 37° C., and contained one per cent. of saccharose, lactose, or any one of a number of compounds belonging to the carbohydrate or glucoside series. The tests were applied to a large number of specimens of streptococci. Those obtained from normal human saliva all had two characters in common: they produced an acid reaction in broth containing saccharose, but failed to do so in that containing mannite. Then, again, those varieties most frequently found in feces all gave a positive reaction with broth containing salicin. It is evident that the existence of these and other similar reactions, if constant, will afford a means by which particular material from either the mouth or the intestines may be identified, as the types of streptococci noted were the most abundant organisms present. Dr. Gordon also obtained these characteristic streptococci of saliva from the air of inhabited rooms and those similarly characteristic of feces from air which had been contaminated by material from the shoes which was probably dragged in from the street.

When these tests were applied to streptococci from the body in disease, it was found that a considerable diversity existed, for example, among those obtained from cases of sepsis. In five cases of malignant endocarditis, organisms were found which were identical, as regards their reaction, with those streptococci found most frequently and extensively in human saliva. The stability of these reactions is shown by the fact that the streptococci responded to the tests in the same manner after being cultivated for periods of time up to two weeks, as when they were originally isolated. The tests here referred to were applied by Dr. Gordon in a careful study of the bacteriology of milk, water, saliva, excrementitious matters, and various morbid materials, and the results obtained constitute, in his opinion, a definite basis upon which the classification of the streptococci may be undertaken. Aside from this, the knowledge gained will also serve a good purpose in connection with the subject of serum therapy. As already stated, antistreptococcic serum is now used quite indiscriminately, and its employment is based on the supposition that streptococci are incapable of differentiation. No efforts are made, as a general rule, to secure a serum which shall be related to any particular strain of these organisms, for the very good reason, perhaps, that the older laboratory methods were insufficient to permit of any discrimination between them. It is to be hoped that the impetus given by this investigation may extend to further attempts at solving the practical questions which are involved in this combat against septic infection and its consequences, a solution which is most anxiously awaited by the medical profession.

CALCAREOUS DEGENERATION.

MANY theories have been advanced to account for this degenerative process, and yet only comparatively few facts are at hand upon which these may be actually based. Calcification is known to occur in divers tissues and the chemical nature of the salts present has been minutely described, but here further study has ended. Regarding the existence of pathological calcification there are abundant data, but as to the actual process, little is known. The older writings contain numerous references to the condition, and an excess of lime salts in the blood was commonly accepted as an explanation of its origin, while dead or dying tissues were regarded as a nucleus around which the carbonate or the phosphate of lime could crystallize. This view was later

superseded by a theory which was based on experimental studies dealing particularly with calcareous degeneration of the kidneys. Litten, who first broached the idea, had many adherents and as many opponents. According to this belief, an injury to the tubular epithelium of the kidneys is produced by the action of certain irritants as the latter are in process of excretion, and this results in a degeneration of the cell protoplasm. The degenerated cell protoplasm is supposed to have an affinity for, and fixes as an insoluble compound, the calcium salts brought to it by the lymph and the blood. A coagulation necrosis of the renal epithelium was, therefore, believed to be a necessary stage in the process. This view has been generally accepted; and yet it is noteworthy that no one has proved that outside of the body there is to be obtained the formation, even temporarily, of compounds of lime and any form of proteid. In order to determine with what organic substance present in degenerating tissues lime salts entered into combination, an extensive investigation was undetaken by Oskar Klotz, a report of which has lately appeared in the *Journal of Experimental Medicine* (Vol. VII, No. 6). It was undertaken to produce experimentally calcification of the kidney and other tissues, and to study the successive changes which took place in these. In all the experimental work on animals and in the analysis of degenerating human tissues, the interesting fact constantly presented itself that calcareous degeneration is preceded or accompanied by deposits of a soapy material. This soap exists in chronically inflamed tissues in advance of the deposit of lime, or it appears in the peripheral zone of the calcareous infiltration. Calcium salts are immediately attracted to it from the body fluids, and in recently calcified tissues there is present an actual calcium soap. Klotz was able to induce deposits of calcareous salts in the lower animals within celloidin capsules containing soaps and fats inserted in the peritoneal cavity, also in the kidney and in connection with fat necrosis.

We cannot review here the very voluminous details of these investigations, but attention may be called to some of the writer's conclusions. Bone formation and pathological calcareous infiltration were found to be wholly distinct processes; in the former there is no evidence of associated fatty change, in the latter there is an antecedent fatty change in the affected areas, and the cells involved present constant evidences of degeneration. The view that would seem, according to Klotz, to account best for the changes observed in the latter case is that, with lowered vitality, the cells are unable to utilize the products brought to them by the blood, so that the normal decomposition associated with their metabolism fails to take place. They interact, therefore, among themselves, with the result that insoluble compounds replace those of a soluble character. Klotz has also demonstrated the presence of soaps in areas which are undergoing calcareous infiltration, and this often in such quantities that they can be isolated and estimated by gross chemical methods.

While these are the facts, certain of the details of this reaction demand elucidation, for the existence of sodium or potassium soaps in the degenerated cells can be explained only by assuming that they are present in the circulating lymph and undergo absorption. But if they are diffusible, there must be some reason for their being stored up in some particular tissues. The indications are that in cells undergoing degeneration, with degeneration of the cytoplasm certain albuminous molecules unite with the soaps present to form a relatively insoluble soap-albuminate. These albuminates can actually be formed with calcium soaps in the test tube.

The fact that in older areas of calcification, soaps are entirely or largely wanting, and the reactions are those principally of calcium phosphate, would seem to indicate that the final stage in the process is an interaction between the calcium soap-albuminate and substances containing phosphoric and carbonic acids, which, as is well known, are present in considerable amounts in the lymph and blood. The experimental studies here noted are of great interest and will tend to a revision of the previously accepted ideas of calcareous degeneration. It will be interesting to note how this new knowledge will affect, if it affects it at all, the treatment of this widespread condition.

THE PROLIFERATION OF TYPHOID BACILLI IN THE GALL-BLADDER.

There are a number of factors connected with the etiology of typhoid fever which have been explained on hypothetical grounds rather than through the medium of exact bacteriological investigations and unprejudiced observations. These include the recurrence of epidemics of the disease in certain houses or localities, sometimes after long intervals, and the occurrence of sporadic cases in the midst of a completely healthy environment. These phenomena have been ascribed to a peculiar tenacity of the typhoid bacilli, by which they were able to lead a saprophytic existence for prolonged periods in the water or the earth, only to be a source of a new infection under favorable circumstances. In the sporadic cases it was simply assumed that the source and path of the infection had escaped the attention. The error and falsity of these views have been disclosed to a large extent by the efforts of Koch and his followers; the significance of earth and water infection has been relegated to its proper sphere, and the principal factor in the spread of the disease has been proved to be a contact infection, or in other words the direct or indirect transmission of the pathogenic organism from a sick to a well person. The appearance of sporadic typhoid cases after prolonged intervals has also been accounted for by the discovery that persons who have apparently recovered from the disease may continue to pass the germs with their stools for months afterwards and thus innocently serve as a source of infection for others.

The problem which remained was in reference to the carriers of the infection themselves. The continual or occasional elimination of the specific germs with the stools presupposes a constant regeneration of the infectious organism of the intestine. This state of affairs can be accounted for only by assuming that the typhoid bacilli remain within the lumen of the intestinal canal, and while the mucous lining of the latter remains intact, continue to proliferate in this locality as saprophytic organisms and like the colon bacillus under similar circumstances, constitute a member of the normal intestinal flora.

Another interesting explanation of this condition is advanced by R. Doerr (*Centralblatt für Bakteri-*

ologie, October 10, 1905), who bases his theory on the supposition that the gall-bladder may act as a reservoir into which the typhoid bacilli may enter and continue to proliferate, only to be expelled into the gut with the bile by the contractions of this viscus. It is a matter of common knowledge that the gall-bladder constitutes a favorite hiding place for the typhoid germ, which may induce there an inflammatory reaction of greater or less extent. In a case of suppurative cholecystitis complicated by cholelithiasis, personally observed by Doerr, enormous numbers of Eberth's bacilli in pure culture were obtained from the purulent contents as well as from the concretions. The condition in the gall-bladder had developed about six months after a mild attack of typhoid fever, which was not diagnosed at the time, and it could be readily demonstrated that with each attack of biliary colic a large number of the typhoid organisms were expelled into the intestinal canal and passed with the stools. Desiring to ascertain the manner in which infection of the gall-bladder took place, Doerr made a series of inoculation experiments in rabbits and found that the germs could enter this viscus only through the medium of the circulation, and that even here intravenous injections alone were successful in transmitting the infection. It was found, moreover, that the process was kept up by a proliferation of the organisms *in situ* rather than by a reinfection from without. Attempts were also made to devise a means for getting rid of the germs in the gall-bladder, but all the usual antiseptic remedies employed were ineffectual in attaining this end.

The observations made by these investigators are of considerable importance, for they explain a number of hitherto doubtful phases of typhoid infection. So long as we can apparently do nothing to influence this localized process in the gall-bladder, all that remains is a thorough examination and disinfection of the stools of the convalescing typhoid fever patients for considerable periods, and as long as the germ can be demonstrated, these patients should be regarded as foci of danger, although seemingly well.

THE CONSENT NECESSARY FOR SURGICAL OPERATIONS.

It has been adopted as a general rule that a formal consent must be obtained by the surgeon from either the patient or one of the immediate family, before any operative procedures are undertaken. Instances are likely to occur, however, in which a surgeon, from lack of foresight or through a zealous desire to act quickly in order to save life, may be led to forego this precaution and as a result may later on find himself involved in legal difficulties. This is, perhaps more apt to occur when the operation has been unsuccessful or has ended fatally, and the friends or relatives see an opportunity to make capital out of the failure of the physician to comply with the letter of the law. In view of the fact that the law has apparently been tested in numerous instances, we might be led to expect that a more definite knowledge should exist of the conditions which make a surgical operation lawful under the circumstances referred to. According to J. F. Shields, however, (*Annals of Surgery*, November, 1905), only four decisions bearing on this subject have, up to the present time, been rendered by courts of the last resort within English or American jurisdiction.

In order to secure a clear analysis of this subject, it will prove a material aid to divide the requirements for a surgical operation into two classes: First, those in which a surgical operation is advisable, but an immediate operation is not imperative to save or to prolong life; and secondly, those in which an immediate operation is necessary as the only course of treatment known which will save or prolong life. Consent in either case may be express or implied, and in all the cases referred to, the law assumes implied consent when the patient places himself in the hands of a physician or surgeon and submits to an operation. This is the law as it appears to be, but as Mr. Shields suggests, it is advisable for the surgeon to obtain full and clear consent in all cases whenever possible, in order to save himself annoyance and expensive litigation. This presupposes, of course, that the patient is an adult and in good mental health. In the case of lunatics, the surgeon should first have the person legally declared such, if time permits, and then obtain the consent of those in legal charge. If the urgency of the case does not permit such delay, the consent of those directly in control of the lunatic and also the consent of the latter, if possible, should be secured. As regards minor children, the consent of both parent and child should be had, if possible. In the case of a child under the age of fourteen, the parents' consent is especially necessary to protect the surgeon against litigation. Over the age of fourteen, the consent of the child alone would appear to be sufficient. Finally, the fact holds that in all cases of sudden and critical emergency the law will justify the surgeon's act, on the assumption that consent to the operation implies consent to measures for the relief of any condition arising from it and demanding immediate action.

The Physician's Sunday.

To the mass of the public the personal life of the physician is a little-thought-of and usually not-at-all-considered element. It is but natural that when sickness or physical disaster enters a household its members should regard the matter only from their own standpoint and easily overlook the fact that the medical attendant on whose judgment and skill they are relying deserves and requires time for rest and recreation. Sundays and holidays usually bring but little change into the daily program of the practitioner, who is obliged early in his career to accustom himself to a routine of exacting work with but few interruptions for relaxation. Sunday is on the European continent regarded more as an opportunity for recreation and less as an occasion for the expression of devotion than is the case in this country, and the German physicians are beginning to chafe under the restrictions to the enjoyment of family life imposed by the conditions under which medical practice is at present conducted. At a recent meeting of the Medical Society of Frankfurt a. M., Dr. Arnold Eiermann presented for ratification by the members a plan intended to secure for the city's medical men the desired opportunity of enjoying a weekly excursion with their families unclouded by the ordinarily ever-present fear of some emergency arising in their absence. The proposal was made to divide the city into seventeen districts, corresponding to the police divisions, and that the physicians of each section, one at a time, should take turns in being on duty in their districts on Sundays and holidays. The others would be at liberty to leave the city. The name of the physician in charge

would always be obtainable at the police station, and the lists for the entire city would be printed in all the newspapers. Of the specialists, only one in each branch would be required to be on call, except in surgery and gynecology, which would need two available representatives. The physicians on duty would be obligated promptly to mail to the attending physician a printed form filled in so as briefly to furnish the most important features of any calls made on strange patients. The outline of this plan was published in the *Münchener medizinische Wochenschrift*, November 28, 1905, and it is stated that it was accepted by a unanimous vote of the society. That the details of such an arrangement have not been found insurmountable is shown by the fact that a despatch to *The Sun*, dated January 6, announces the inauguration of the plan on January 14, so that after that date the life of the Frankfort physician will be much less arduous than before. While the project in the form proposed would probably not be feasible in this country, the advantages it offers are self-evident and it would be very desirable if some analogous scheme of mutual help could be universally introduced.

The California Board of Medical Examiners.

One of the periodical outbursts against the California State Board of Medical Examiners has recently taken place at Los Angeles. A physician who lost two sons in a battle with the board threatens suit on the ground that his boys were "plucked" through malice against the College of Physicians and Surgeons, from which they were graduated in June. It is charged that the president of the board shows a dislike for the name of this institution, and has expressed a determination to prevent any graduate of the College of Physicians and Surgeons of either Los Angeles or San Francisco from receiving a license to practise, though he had to sacrifice other candidates to do so. Another physician charges unfairness, and calls the president a trickster, supporting the charge with several specifications, but this physician also has felt a wound, for he himself failed to pass the examination in bacteriology before the board. Several of the most prominent members of the Los Angeles profession have come to the rescue of the president of the board in just as emphatic language as that used by the disgruntled ones. It must be admitted that the standard set by the California board is a high one, but it should be maintained, for the State is a Mecca of the quacks of Christendom. A review of the questions submitted at any examination shows that they are selected in every branch with remarkable skill, both with a view to fairness and as a test of the knowledge of the applicant. Unfortunately, the president of the board is said to have made a custom of submitting two questions at the close of each test which are particularly obnoxious to even the best bacteriologists, one requiring the diagnosis of a culture tube, the other the naming of a stained specimen of bacteria, without any information as to the preparation of either, each question counting ten per cent. in the final average. Possibly he has been indiscreet in some of his remarks, but the evidence against him comes from unfortunate candidates, many of whom prove themselves incapable of answering the simplest questions in almost any branch.

Harvey Society Lecture.—The fifth lecture in the Harvey Society course will be delivered at the New York Academy of Medicine on Saturday, January 20, at 8.30 P.M., by Dr. W. H. Park. The subject of the lecture will be, "A Critical Study of Serum Therapy." The lectures are free to the profession, and all interested are invited to attend.

News of the Week.

Health Statistics of Illinois.—According to the report of the Illinois State Board of Health, 65,000 deaths occurred in the State of Illinois in 1905. In the same period there were approximately 150,000 births, making a net increase of 85,000 in the State's population. Births of males exceeded females by fully 6,000. The statistics show that consumption continues to cause more deaths than any other disease, with pneumonia and heart disease second and third. The annual report shows that there are more than ten thousand physicians licensed to practise in the State, and the Board examined and licensed 850 physicians in 1905. Under the act of the last General Assembly providing that the State Board of Health shall license all embalmers, 1,700 embalmers have been examined and received certificates. The inspection and supervision of lodging houses in Chicago have had the effect of abolishing all basement lodgings, of doing away with all double-deck and treble deck bunks, and of securing far better sanitary conditions.

To Help the Blind.—The New York State Association for Promoting the Interests of the Blind, is an organization which developed from a movement begun three years ago for the purpose of collecting tickets for musical and dramatic performances and distributing them to the blind who could not otherwise afford them. The originators of this plan came personally in contact with the blind and were impressed with the fact that, either for lack of training or opportunity for work, many of them who were able bodied, were forced to be dependent for their support, partially or entirely, on the State, on the City, or on private philanthropy. Therefore a society similar to that in Massachusetts, was created, and in addition to distributing tickets the organization sends visitors to the blind in their homes, where they give practical suggestions to help those willing and able to work, and bring cheer and courage wherever possible. The Employment Bureau, using the information gathered by the visitors, will try to find remunerative occupations for some blind people in their homes, for others in handicraft shops for the blind—in factories for the seeing, and for some in mercantile and professional pursuits. Contributions may be sent to Miss Winifred Holt, 44 East Seventy-Eighth street, New York. The association will hold its first public meeting in this city, on March 29, 1906. Mr. Clemens (Mark Twain) will preside and the Hon. Joseph H. Choate and Miss Helen Keller will speak.

Autopsy Dispute.—The occurrence of misunderstandings in regard to autopsies on hospital patients gives rise to frequent disputes between hospital authorities and the friends of patients. The District Attorney has been called upon to investigate a recent instance of this sort in which it is alleged that a post-mortem examination was made at an uptown hospital without due permission from the relatives of the deceased. The fact that the abdominal viscera were retained and excelsior substituted for them is apparently considered the chief grievance.

Painless Death for Incurables.—The advocates of euthanasia have received a distinguished recruit in the person of Dr. Charles Elliot Norton of Cambridge, well known as a man of letters. In an open letter addressed to Miss Anne S. Hall of Cincinnati, who at a recent meeting of the American Humane Association presented a resolution

calling for approval of the practice of ending the life of the hopelessly insane, incurably diseased, or the victims of accidents, Dr. Norton speaks in very strong terms in favor of such a course. Prof. Norton, it should be remembered, is not a doctor of medicine, his doctorates—Litt.D., LL.D., and D.C.L.—being honorary merely, and adding no weight to the expression of these murderous ideas.

Chicago Schools to Be under Sanitary Rules.—Children affected with tuberculosis henceforth will be put in separate buildings. The Public School Board of Chicago will cooperate with the Health Department in fighting the disease. The plan contemplates the organization of a large corps of trained nurses to visit the homes of school children from which illness has been reported; the examination of children before permitting them to return to school from homes in which there has been contagion; to secure enforcement of the law calling for the placarding of the houses in which there is contagion; to give special attention to the teaching of sanitation and health laws in the schools of the congested districts, and to bring to the notice of the proper charitable organizations all families found to be in need of help.

Striking Physicians.—According to the London *Express* the entire staff of medical men attached to the Exeter Dispensary have decided to strike. Insults, they declare have been heaped on them and "the profession of medicine degraded by the base calumnies of the committee." The trouble has arisen from a proposal by the committee to appoint a paid medical officer. The incident recalls the story told of a similar attempt in Italy a score of years ago which was very neatly squelched by the government. In 1886 the medical staff of the hospitals of Rome decided to strike on a certain day. When the day arrived each physician received from the Ministry of War a commission in the army, with orders to report for service to general officers who had simultaneously been appointed to take charge of the various hospitals. In these circumstances a strike would have been "mutiny." There was no mutiny among the new members of the Italian army's medical staff.

The Yerkes Hospital.—From statements made by Mrs. C. T. Yerkes, it appears not unlikely that an effort will be made to begin the erection of the hospital provided for in her husband's will at a much earlier date than was the testator's intention. The will directs that the work should not commence until after the death of Mrs Yerkes, as she has a life interest in the residuary estate, but Mrs. Yerkes has expressed the desire to have the hospital built under her own supervision.

The Home Treatment of Consumptives.—Attention has repeatedly been called in the columns of the MEDICAL RECORD to the undesirability of sending impecunious consumptives long distances from home for treatment. The Committee on the Prevention of Tuberculosis of the Charity Organization Society has sent to a very large number of physicians a letter emphasizing this fact and discouraging the practice of recommending "the country" or the "West" to the poor consumptive. The letter of the Committee states that experience has taught us that, difficult as it may be for a poor man to recover from tuberculosis in this city, he is better off here among his friends and relatives, where there are more adequate hospital and dispensary facilities, than he is far from home, where he is thrown entirely upon his own resources and where the great number of consumptives willing to work at the lowest wages make the finding of employment, especially of suitable employment, almost impossible. Favorable results from climate can hardly be looked for unless at least $10 per week can be spent for board and lodging. The stranger, who has spent a large part of his savings on railroad fare, soon finds himself without work, living in the poorest rooms, eating the scantiest and cheapest food. The practice of advising the removal to other climates thus defeats its own aims and casts upon the charity of other communities a burden which they should not and cannot sustain. The cooperation of the medical profession is, therefore, invited to prevent persons suffering from tuberculosis from being sent to other States unless they are physically able to work and have secured in advance a definite assurance of the opportunity to perform work of a proper character at wages sufficient for their suitable support or they have at their disposal at least $250 in addition to railroad fare.

Steamboat Whistling.—In response to the strenuous objections made by Mrs. Rice and other residents along the city's various waterfronts, the National Board of Steam Navigation, comprising the owners or managers of all the ferryboats and nearly all the tugboats in the harbor, has passed a resolution directing its members to instruct the masters and pilots of their steam craft to blow their whistles only when absolutely necessary to conform with the law.

"Archives of Pediatrics."—With the close of the year 1905 Dr. Walter Lester Carr, who for five years has been editor of the *Archives of Pediatrics*, retires from official connection with that journal. Dr. Carr's successful editorial management will render the work of his successor no easy matter, but we doubt not that under the guidance of the new editor, Dr. L. E. La Fetra, the *Archives* will maintain its established reputation as the leader among the journals devoted to the diseases of children.

Cook County Hospital Growth.—The warden of this institution, Mr. Chas. J. Happel, in his annual report, shows that the institution had more than 100 patients each day in excess of the daily average of last year. The daily average of patients in the County Hospital is 917; the daily average of patients in the detention hospital, 17, making the daily average for both 934 patients. Deaths in the County Hospital were 1,776; deaths in the Detention Hospital, 12; total, 1,786 for the year.

Vapor Anesthesia.—A conference of the interne anesthetists of the Brooklyn Hospitals was invited to assemble at the Long Island College Hospital on December 19, by the anesthetists of that institution. Dr. Bull, the house anesthetist introduced Dr. J. T. Gwathmey, who presented his new vapor inhaler. The interest of the demonstration was increased by the offer of Dr. A. F. Erdmann to submit to a narcosis by means of the inhaler. This was done, and the "patient" afterwards testified to the entire absence of unpleasant sensations. The meeting in January is to be held in the Bushwick Hospital, under the direction of Dr. Woolsey, the consulting anesthetist.

Annual Report of Dunning (Ill.) Institutions.—The superintendent of these institutions, Dr. V. H. Podstata, in his annual report shows a decided increase in the insane population over the previous year. Notwithstanding the fact that 57 patients in the year have been transferred to

various State institutions, the total population of insane patients increased over 200. At present there are at the Dunning Insane Asylum 1,840 patients. There are now about 80 more patients at the consumptive hospital than there were last year, the population now being 170 patients.

San Bernardino County (Cal.) Medical Society.—The annual session of this society was held at Arrowhead Hot Springs on December 13, 1905. The following officers were elected for the ensuing year: *President*, Dr. Thos. M. Blythe of Redlands; *Vice-Presidents*, Drs. Jos. A. Champion of Colton and Chas. E. Ide of Redlands; *Secretary*, Dr. D. C. Strong of San Bernardino; *Treasurer*, Dr. John H. Evans of Highlands.

College of Physicians of Philadelphia.—At a stated meeting held January 3, the following officers were elected for the ensuing year: *President*, Dr. Arthur V. Meigs; *Vice-President*, Dr. James Tyson; *Treasurer*, Dr. Richard H. Harte; *Secretary*, Dr. Thomas R. Neilson; *Honorary Librarian*, Dr. Frederick P. Henry.

Diphtheria Spread by Pencils.—An investigation by the Kansas State Board of Health disclosed that an epidemic of diphtheria in a small town was caused by public ownership of lead pencils. The school board buys pencils for the pupils, and these are gathered up each night and distributed in the morning. One child contracted diphtheria and in a few days the disease was communicated to fifty pupils by means of the pencils. The State board ordered the pencils destroyed and the system abolished.

Tuberculosis Exhibition in Boston.—The tuberculosis exhibition, of which the New York collection of material formed the nucleus, was held in Boston, December 29 to January 7, and excited much popular interest. It will be transferred to Philadelphia and will be opened there on January 22.

Health Conditions in Chicago.—The death rate of Chicago for 1905 will be less than 14 per 1,000 of population, a considerable gain over the figures of previous years. In 1873 the average age of those dying was fifteen years, but now it is over thirty-two years.

New York Neurological Society.—At the annual meeting, held on January 2, 1906, the following officers were elected for the ensuing year: *President*, Dr. Joseph Fraenkel; *Vice-Presidents*, Drs. Adolf Meyer and J. Ramsay Hunt; *Recording Secretary*, Dr. Edwin G. Zabriskie; *Corresponding Secretary*, Dr. F. K. Hallock; *Treasurer*, Dr. G. M. Hammond; *Councillors*, Drs. M. Allen Starr, Charles L. Dana, Joseph Collins, J. Arthur Booth, and William M. Leszynsky.

Western Surgical and Gynecological Association.—At the fifteenth annual meeting of this society, held in Kansas City, Mo., December 28 and 29, 1905, under the presidency of Dr. H. D. Niles of Salt Lake City, the following officers were elected: *President*, Dr. Malcolm L. Harris of Chicago; *Vice-Presidents*, Drs. A. L. Wright of Carroll, Iowa, and C. Lester Hall of Kansas City, Mo.; *Secretary and Treasurer*, Dr. Arthur T. Mann of Minneapolis. Salt Lake City was selected as the place for holding the next annual meeting, in December, 1906.

The Canadian Method of Dealing with Dangerous "Christian Healers."—A Dowieite leader at Toronto and Dowie's representative in Canada was sentenced, on January 8, by Judge McCrimmon, senior judge of the county of Ontario, to six months with hard labor in the Central Prison, Toronto, for "aiding, counseling and abetting one Marshall Harmon, of Victoria Corners, township of Brock, in neglect in securing medical assistance during his wife's last illness."

South Texas District Medical Association.—At the close of a two days' session at Beaumont, Texas, the following officers were elected for this association: *President*, Dr. D. S. Wier of Beaumont; *Vice-Presidents*, Drs. P. G. Swearingen of Center, and Jordan of Liberty; *Secretary and Treasurer*, Dr. A. A. Nelson of Nocogdoches. Houston was selected as the place for the next meeting, which will be held in June, 1906.

North Texas Medical Society.—At the fiftieth annual convention of this society in Dallas, which ended December 13, the following officers were elected: *President*, Dr. Joe Becton, Greenville; *Vice-President*, Dr. J. F. Corry, Rockwall; *Secretary*, Dr. H. L. Moore, Van Alstyne; *Treasurer*, Dr. C. A. Gray, Bonham. The next semi-annual meeting will be held at Denison, in June, 1906.

Dr. William Osler is now in Baltimore, and, according to an unconfirmed report in the *New York Times*, wishes to return there to live. The report says that it is the belief of many medical men of Baltimore that he will resign the Regius Professorship of Medicine at Oxford and return to his old chair at the Johns Hopkins.

Yellow Fever is now said by the sanitary authorities of Havana to be extinct in that city.

Obituary Notes.—Dr. W. E. Hemphill of Asheville, N. C., died of appendicitis on December 24, after an operation. Dr. Hemphill was thirty-five years old and had been in practice since 1896. He was coroner of Buncombe County.

Dr. J. M. Ely of New Palestine, Indiana, died on December 14, at the age of eighty-four years. He was born in Nashville, Tenn., and had practised medicine for over sixty years.

Dr. John C. Campbell of Nebraska City, Neb., died on December 12, at Asheville, N. C. He was born near Lexington, Ky., December 22, 1814, and lived there eighteen years. He attended Miami University, coming to Burlington, Iowa, in 1836. In 1840 he graduated in medicine and practised in several towns in Iowa, finally going to Nebraska City in 1854.

Dr. C. L. Stewart of Detroit, Mich., died of appendicitis on December 25. Dr. Stewart was a graduate of the Detroit College of Medicine, thirty-eight years old, and for the past four years had been milk inspector for the Board of Health.

Dr. James L. Harriman of Hudson, Mass., one of the best known physicians of Middlesex county, died on December 29, at the age of seventy-two years. He was graduated from Bowdoin College in 1857, and served through the Civil War as surgeon of the 13th Massachusetts regiment.

Dr. Putnam Fulkerson of Lexington, Mo., died on December 16, after a short illness. He was born at Abingdon, Va., and was in his eightieth year. He had lived in Missouri since 1845 and for fifty-nine years had practised medicine.

Dr. Francis Rowan Webb of Chicago, Ill., is dead of pneumonia. Dr. Webb was born in Chicago in 1851. He was educated in the Chicago schools and afterwards at Rush Medical College. He had a general practice until a few years ago, when he gave it up to devote himself to pathology.

Dr. George Kassen of Cincinnati died on December 11. He was a native of Germany and received his medical education at Wurzburg, and at the Miami Medical College. He had a

large practice among the German residents of Cincinnati.

Dr. James W. Holland of Westfield, Mass., died on December 30 of nephritis, on his thirty-eighth birthday. He was graduated from the medical department of the University of Pennsylvania in 1894, and immediately returned to his home town and began the practice of medicine. He was elected as a member of the Board of Health and also appointed town physician. In July, 1900, he was appointed surgeon of the United States Army and assigned to duty in the Philippines. After two years he returned to Westfield and was appointed associate medical examiner for the western district of Hampden County.

Dr. Charles E. Wentz died at New Providence, Lancaster County, Pa., on January 3, at the age of twenty-eight years. He was a son of Dr. Wm. Wentz and a brother of Dr. Frank Wentz. He was a graduate of the Medico-Chirurgical College of Philadelphia.

Dr. Henry C. Bowen of Cleveland, O., died on December 13, in his eighty-seventh year. Dr. Bowen came to Cleveland in 1841 from Fayetteville, N. C., where he was born, and in 1853 was graduated from the Cleveland Homeopathic Medical College. He continued practising until four years ago, when, because of failing health, he retired from active life.

Dr. Horace M. Nash of Worcester, Mass., died on December 24, at the age of sixty-one years after an illness of only a few hours. Dr. Nash had practised in Worcester five years, and previous to that he practised for twenty years in South Lancaster. He was born in Bath, Me., and in 1876 graduated from the University of Vermont. He began practising in Manchester, N. H.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HOSPITAL SUNDAY FUND AND ANTIVIVISECTIONISTS—TREATMENT OF TUBERCOLOSIS WITH T. R.—SEAMEN'S HOSPITAL—GENERAL COUNCIL'S WARNING—MITCHELL BANKS LECTURE.

London, December 22, 1905.

There was a large attendance at the Mansion House on Monday when the Lord Mayor presided over the annual meeting of the Hospital Sunday Fund. It transpired during the proceedings that the unusually large assembly was the result of a canvas made by the society of antivivisectionists which owns as leader Mr. Stephen Coleridge. The feeling elicited by the exposure of his pettifogging trickery was not exactly unanimous, but the condemnation after he had vainly moved an amendment and asserted that large sums were diverted from the sick poor to the schools extended far beyond the Mansion House and is evidently enlightening the public.

Indeed, in a letter to the *Times* one of the faddists declares that "hundreds" of those who voted at the meeting were not constituents of the fund. This seems an apt illustration of the methods of Mr. Coleridge and his clique. Surely an active canvass to pack the meeting with the antis is a sufficient proof of the absurdity of the plea. It was shown at the meeting circulars were sent to the clergy of London asking them to entrust their tickets of admission to Mr. Coleridge's Society. A considerable number of clerics were present at the meeting, many, no doubt, attracted by the circulars and canvass. But in spite of all, Mr. Coleridge's proposal was rejected by an almost unanimous vote, but not until one speaker had told him to his face that his talk about the sick poor was simply cant, his real object being merely to push his agitation, in support of which he was ready to sacrifice the interests of the patients about whom he professed such concern.

Archdeacon Wilberforce naturally put in another appearance as an antivivo. He subscribed, he declared, to every word said by Mr. Coleridge, and then held out a threat which must have shocked many of those present. He actually said he held at present a considerable sum from a hospital Sunday collection and if Mr. Colridge's amendment was not carried he would not apply it to the fund. By what casuistry he justifies himself in not handing over the money to the fund on behalf of which it was collected is not for honest men to say.

He ought not to have retained it so long, and unless it is forthwith sent to the fund some one should undertake to show him that his conduct looks like that of a fraudulent trustee.

The treatment of tuberculosis by means of the new tuberculin has been fully discussed of late—two evenings at the Medico-Chi. being largely devoted to it and producing some important papers and details of research. Dr. A. E. Wright discussed the general principles of bacterial vaccines. He classed infections as local and systemic. In the former immunization was not present and the protective power of the blood was below normal. In the latter immunization occurred and the protective power fluctuated. In localized infection this protective power should be raised and the anti-bacterial lymph brought into contact with the organisms in the lesion. In the systemic infection, as in pyrexial tuberculosis, there is constantly recurring autoinfection, and the object is to arrest this if possible.

A paper by Drs. David Lawson and Struthers Stewart contained tables showing comparisons between the opsonic index of the blood of healthy persons and those with pulmonary tuberculosis and some who had recovered. They attributed value to these differences, both in respect to the diagnosis and treatment, and thought tuberculin increased the proportion of cures and tended to prevent relapses.

Dr. Bulloch read a paper giving the results of his experience with tuberculin R. Of eleven severe localized cases five were apparently cured, four improved much, in one the treatment could not be tolerated, and in one death took place in spite of it.

Mr. John G. Pardoe read a paper on Tuberculin R. in urinary cases—chiefly those of primary tubercle of the bladder or those in which the condition of that viscus is the main feature and, as far as can be judged, the primary infection. He thought injections of all kinds into the bladder injurious and the less the organ is subjected to instrumentation the better. When the cystoscope is required the greatest care is needed to prevent septic infections, for "sepis is to a tuberculous bladder as fire to tow." As Harry Fenwick has shown, T. R. is dangerous where both ureters are affected, therefore the cystoscope must be used before commencing the treatmnt. Total suppression by blocking of the ureters has occurred from neglect of this warning. T. R. must therefore never be employed unless there are, on at least one side, both a clear orifice and a free flow. Of twenty-one cases treated Mr. Pardoe reported five seemed to be cured, but remembering the tendency to relapse he contented himself to call them apparent cures and proposed to give their later histories in a future paper. Tuberculosis of the urinary system has such long periods of latentcy that a year more's respite cannot be called a cure. Mr. Pardoe said his experience of other treatment has been so disappointing that he did not think it optimistic to state that the results with injections of T. R. are at least as good as those by any other method. Before he used it he had little hope of getting any improvement. Now he thinks there is hope of cure in some cases and of great improvement in more.

Sir R. D. Powell (President), compared the positive and negative phases produced by active ulceration with the effects of injections of serum. In many cases discharged from sanatoriums the opsonic index had been low. He thought this index might indicate the amount of exercise a patient should take, for if it were high the flushing of the lesion by exercise would be good; if low, harm would probably be done. He anticipated a time when a clinical index would be discovered, for it is impracticable to make opsonic observations in the general run of cases. I must confess to some satisfaction at this admission by so great an authority as Sir Douglas, for it seems to me pretty clear that the bacteriological skill required to estimate opsonic reactions, to say nothing of the time consumed, precludes the general employment of this method, and after all there seems at present something hypothetical about opsonins. Not that I would speak disrespectfully of them any more than I would of the equator. But I have a sort of notion—prejudice if you like—that careful clinical observation of the effects of treatment must continue to furnish important information, if it cannot be as exactly measured as some of the laboratory researches.

But to return to the discussion—Dr. G. W. Ross found in one hundred cases in a consumption hospital the opsonic index was above normal in fifty-one per cent.; in eleven per cent. it was below normal. Of thirty advanced cases twenty-five showed a fluctuation in the index at different times. As a rule the index rose with the temperature, fell on confinement to bed, and rose on taking exercise. In

acute illness a low index was against its being tuberculous. He expected good results from the treatment.

Dr. Whitfield had had improvement in some skin cases —one of lupus was slightly better, two of scrofuloderma had done very well, as had two of erythema induratum.

Dr. Emery did not consider the index was always in proportion to the opsonins, but that the organisms varied in the facility with which they were taken up. He had seen cases improve, and in small doses the T. R. would not be injurious with a low index. He suggested the possibility of preparing an opsonic serum for use in rapid infections in which vaccines were inadmissible.

Dr. B. Harris advocated the use of very small doses. Better results were thereby obtained. In case of lupus of years' standing, by rest in bed, followed by T. R., the nodules rapidly cleared up.

Dr. Bulloch said some apparently unsuitable cases of phthisis had improved.

Dr. Lawson said sanatorium patients should not be discharged with a low index.

The Seaman's Hospital Society is taking another step in advance—proposing to establish a new school of clinical medicine—and several medical and surgical leaders have agreed to assist. Other hospitals will join, some have already done so. I am amused to see in a morning newspaper an account of this new departure, in which the reporter informs the readers that the new school will enable qualified men to learn clinical medicine at home, instead of having to go to the continent or to the United States to finish up their knowledge.

The notice of the General Medical Council concerning advertising, canvassing and such like has appeared in all the journals, and offenders will, in future, scarcely venture to plead ignorance of the views of the Council.

Mr. Edgcombe Venning, F.R.C.S., received a knighthood among those recommended by the outgoing ministry.

Mr. Reginald Harrison went to Liverpool, and delivered, on Monday the first Mitchell Banks lecture in the university, which he did so much to establish and which seeks thus to perpetuate his memory. Besides this lectureship, founded in memory of the great surgeon, a new outpatient department of the infirmary was built with the subscriptions which came in for the memorial as soon as it was proposed.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

PHOTOGRAPHS OF PROJECTILES—GASTRIC PERISTALSIS—HEMATOGENOUS LUPUS VULGARIS—SPONTANEOUS COMBUSTION—RETAINED TESTICLE—LUPUS CARCINOMA.

VIENNA, December 26, 1905.

THE next to the last meeting of the Association of Physicians was held in the lecture room of the First Surgical Clinic of Councillor von Eiselsberg in the Allgemeine Krankenhaus.

At von Eiselsberg's request the room had been completely renovated and newly equipped with modern appliances as compensation to Eiselsberg for not having responded to the call to the Berlin clinic. By means of the skiopticon numerous surgical pictures were demonstrated. An especially interesting series of photographs represented projectiles in motion and were made under the auspices of the Prussian Department of Education. The Prussian infantry projectile of the model of 1898 was photographed by the aid of electric apparatus with an exposure of one millionth of a second. At short distances terrible explosive effects are produced, which are made visible in series of photographs taken after the projectile has left the tissues. Numerous aspects of modern surgery were presented by the aid of *x*-ray pictures, and then von Eiselsberg demonstrated the new aseptic operating room which is probably the most complete product of modern skill in this direction.

Dr. Kaufmann has presented the results of interesting observations on gastric peristalsis. It has been generally accepted that the stomach is divided into a gastric and a pyloric portion by a circular constriction. Kaufmann instituted experiments in order to ascertain whether this division into two portions during peristalsis does really take place. He introduced a glass tube into the esophagus of a dog that had been narcotized with chloral and morphine, and inserted another into the pylorus. Water was then allowed to flow into the stomach. As long as the organ remained at rest the water flowed freely through the pylorus, but if the stomach was subjected to irritation, active waves were set up which occluded the pyloric antrum so that the outflow of the water filling the fundus was completely checked. In other words a second sphincter was formed in the stomach, dividing the cavity of the fundus from that of the pylorus. A model was demonstrated to illustrate the movements of the stomach during peristalsis. If one end of a flexible tube is held still and the other is twisted about its longitudinal axis both the ends will be approximated and two cavities will be separated from each other. How should the muscle fibers of the stomach be arranged in order to bring about such a rotation? They should run diagonally over the surface of the organ, and Kaufmann by the following experiment showed that they caused rotation and an approximation of the two extremities of the viscus. While the stomach was at rest he inserted into it long surgical needles to the ends of which straws were fastened; these were parallel to each other. On irritating the stomach the upper needles were twisted toward the head of the animal and the lower ones in the opposite direction until the angle between the two finally was almost ninety degrees, thus proving that the two portions of the stomach are shut off from each other by a constriction of this type.

Dr. Török of Budapest has described one of the rare cases of embolic hematogenous lupus vulgaris. The patient was a boy of two years who had had measles a year and a half before. A short time afterward the present eruption appeared and the number of cutaneous lesions increased rapidly so that within four months it had almost attained its present appearance. Since then new foci have appeared, but only in very limited numbers. A fungous gonitis has also developed on the left side. The foci, which are 157 in number, are mostly localized on the upper and lower extremities, though a few are seen on the face. The trunk and scalp are free from them, the surface of the infiltrated areas varies from the size of a bean to that of a twenty-five cent piece, and they occupy the superficial portions or the entire thickness of the epidermis; they are round, brownish or brighter red in color, soft in consistency, and in places are covered with fine scales. On the hands and feet they are either eroded or covered with wartlike proliferations of the epidermis. On admission these areas were covered with thick scabs. Such cases are observed very rarely, but the embolic nature of the disease is demonstrated in the present instance through the appearance of the foci in a relatively short time and their localization on the extremities and on the face, which are the situations of predilection for emboli. It appears that the embolic origin of tuberculosis of the skin when the matter is carefully investigated will be found to be more frequent than is usually believed. On another occasion, Török saw a child of eight months whose middle finger of the right hand, and right foot, exhibited a spina ventosa of tuberculous origin, while on the left labium majus there was a submucous infiltration the size of an almond and involving the entire thickness of the skin, surrounded by several apparently follicular suppurative foci. The mother of the child died of tuberculosis after its birth. A third case was that of a four year old boy who two years ago after measles developed on his neck an ulcerated area which is now occupied by a lupus patch the size of a silver dollar. The same patient also developed at the same time a periostitis of the index finger of the right hand, which still persists.

Dr. Karl Albecker has recently observed a curious case of burning which in all of its details suggests the instances of spontaneous combustion spoken of in the older textbooks, and proves that our understanding of the combustibility of the human body is very deficient. The body of a beggar woman seventy-two years of age who had been excessively alcoholic was found one morning completely charred and shriveled to the size of a child's body. Nearly all the soft parts were converted into carbon and ashes, even some of the bones were friable and incinerated. There was no evidence of a conflagration in the place where the body was found. According to experimental evidence an enormous amount of fuel would have to be consumed in order to bring about such complete combustion of the soft parts, including even the large bones. As this could be excluded it seems most rational to accept the old view that the fat of the body surface melts and saturates the clothing, and that this then maintains the flame like a wick saturated with oil.

Dr. Drucker reports a case of abnormal development of the testicle. In a young man of sixteen years the descent of the right testicle began in the thirteenth year; before the twelfth year abdominal cryptorchismus was present, but shortly afterward the patient noticed a hard body in the right inguinal canal. The testicle stuck in the inguinal canal for some time, but in the course of several months the organ succeeded in completing its descent. The abnormality can be detected at the first glance, for the localization of the testicle is unnatural and it is markedly smaller than its fellow. In addition it is hard, less elastic, there is less testicular sensitiveness, and retrograde changes are already going on. At night, after a more or less protracted stay in the recumbent position the gland returns to the inguinal canal, showing that the communication between the scrotum and the inguinal canal is still free, but a hernia is not present. On the other hand, there is a hydrocele of the cord, communicating with the abdominal cavity. By the application of firm pressure a complete

cure may be expected if the channel of communication is of small diameter.

Dr. Huber has described a case of lupus carcinoma occurring in a thirty-year-old charwoman. The affection had persisted for sixteen years. The lupus originated in the nasal cavity and from there spread over the entire face. A lesion of the left cheek is said to have been present for four months, and began at the left angle of the mouth. For five years ectropion has been present. The entire face is occupied by an uninterrupted lupus surface which later ally extends to the ears, almost reaches the scalp above, and downwards encroaches on the neck. In consequence of this there has been cicatricial contraction of the upper and lower eyelids, destruction of the alæ of the nose, and of the nasal septum. On the left cheek is a painful, nodular swelling the size of the palm of the hand covered with offensive shreds and deep red proliferations. The mass exhibits a great tendency to spread. The patient is emaciated, very anemic, and cachetic. On the trunk there is an abortive scrofulous lichen. The submaxillary glands are not palpalable even on the side on which the carcinoma is situated. A part of the carcinomatous area was extirpated and the histological examination confirmed the diagnosis of lupus carcinoma.

Progress of Medical Science.

Boston Medical and Surgical Journal, December 28, 1905.

The Muscle-Splitting or McBurney Incision in Acute Appendicitis, With or Without Abscess: the Course and Result in 75 Consecutive Cases.—L. R. G. Crandon and D. D. Scannell present summarized histories of this series of cases. They claim for the muscle-splitting operation the following advantages: (1) In most cases it is directly over the seat of the disease. (2) It is worth the care to enlarge it properly since even after prolonged drainage we can practically assure the patient that he will have no hernia. From the moment the patient leaves the operating table every movement involving contraction of the abdominal muscles tends to bring together the splits in these muscles and thus close the gridiron; (3) because of this tendency of the wounds to come together, stitches are of almost no advantage, and the surgeon is, therefore, never tempted to omit the safeguard of temporary drainage in doubtful cases. The authors find in the records of the Boston City Hospital for the past twenty-five years notes of 25 hernias through appendectomy scars. Of these 17 occurred through the old-fashioned direct oblique incision, 5 through the right rectus incision, but none through a muscle-splitting incision. The authors follow the technic here described. The skin incision is so made that its middle is about three quarters of the distance from the navel to the antero-superior spine. The incision is nearly transverse—that is, it bisects the angle made by the external and internal oblique muscles as they cross each other. Fibers of the external oblique aponeurosis are recognized, a nick is made with the knife between two fibers and is enlarged by tearing, either with the knife handle or with the fingers. This wound is then held open with retractors. Thick muscle-fibers of the internal oblique are now seen running nearly at right angles to the external oblique. A nick between fibers, as before, is followed by the tearing open of this muscle, as well as the transversalis beneath it, and the properitoneal fat with the two fingers. After good retraction to the full depths of the wound, the peritoneum is lifted between two forceps, nicked and slit open transversely with blunt scissors.

Boston Medical and Surgical Journal, January 4, 1906.

The Physical Aspect of American Football.—E. H. Nichols and H. B. Smith have analyzed the physical injuries sustained by Harvard Football players during the last season, and present several excellent photographs showing injuries received and methods of treatment adopted. The paper is a most valuable one and will doubtless become a classic in the medical history of the game. The authors present the following conclusions: (1) The number, severity, and permanence of the injuries which are received in playing football are very much greater than generally is credited or believed. (2) The greater number of the injuries come in the "pile" and not in the open plays, although serious injuries are received in the open. (3) The number of injuries is inherent in the game itself, and is not due especially to close competition, as is shown by the fact that the proportion of injuries received in games and in practice is about the same. (4) A large percentage of the injuries is unavoidable. (5) The percentage of injuries is incomparably greater in football than in any other of the major sports. (6) The game does not develop the best type of men physically, because too great prominence is given to weight without corresponding nervous energy. (7) Constant medical supervision of the game where large numbers of men are engaged is a necessity and not a luxury, although it is a question if a game, requiring the constant attendance of two trained surgeons, is played under desirable conditions. (8) The percentage of injury is much too great for any mere sport. (9) Leaving out all other objections to the game, ethical and practical, the conditions under which the game is played should be so modified as to diminish to a very great degree the number of injuries.

Puerperal Septicemia.—The histories of two cases are detailed by E. H. Stevens. Both recovered, one being treated by curetting and weak formalin injections and the other, whilst presenting a general septic condition, by antistreptococcus serum. The author summarizes the various methods of treatment as laid down by current text-books. Personally he prefers the long curette followed by the wiping out, by means of a long forceps, of the uterine cavity. He does not see how the advice to use the fingers for this purpose is sound, as a uterus which is from six to ten inches in depth cannot be explored without the introduction of the hand into the vagina, a procedure which to his own mind is vastly more dangerous and less satisfactory than the use of the curette. Fortunately, the milder or putrid type of puerperal sepsis is the most common, and prompt intervention will prevent the disease from assuming its more malignant form.

New York Medical Journal, January 6, 1906.

Water as a Local Anesthetic.—J. A. Wyeth has become convinced that the Schleich method of anesthetic by the infiltration of weak cocaine solutions is due more to the fluid itself than the contained salt. He gives the history of two cases, both men, with small tumors on the back. In both removal was painlessly done under water anesthesia, which acts by pressure on the end organs of the sensory nerves, destroying their sensibility. Ten minims of sterile water were used, the needle resting in the substance of and not below the skin. This procedure was repeated in the same continued linear direction until a sufficient length of anesthetized skin was produced. The needle was then thrust between the capsule of the tumor and the subcutaneous aureolar tissue and the water freely injected so as to lift the skin from the tumor, which was separated also by a similar manipulation from the underlying connective tissue.

The Strenuous Life of School Girls.—W. P. Northrup utters a protest against the forcing methods of modern pedagogy. Each spring there is a resulting crop of neurasthenic girls, worn out by school work. The girls are all anxious to be at the head of their respective classes, overstudy, hurry their meals, or go without breakfast altogether and naturally soon become wrecks. Teachers have little mercy on their pupils, who are goaded to tasks far beyond their powers, and the worst of it all lies in the fact that all this strenuous endeavor is made just at a time when the girl is becoming a woman and entering on her menstrual life. As contributing to unstable nerves, there comes a sequence of impaired digestion, imperfect evacuation of the lower bowel, and an autotoxemia, with all of its injurious effects on the system at large, and especially the nerves. The author renews his plea for the establishment of roof-gardens on city houses. Children must be made to go to bed early. Indiscreet remarks should not be made at the breakfast table by the parents. We should instruct teachers as to the absolute necessity of fresh, cool, circulating air in the schoolroom, and help the girls by kind advice and proper supervision throughout the school year. We must reckon with their ambition, foster it and not kill; guide it and not thwart it, and work together to aid the child to begin and to end its year aright.

The Vicious Circle after Gastroenterostomy.—Under this title J. B. Deaver includes all those cases which suffer from persistent vomiting after the operation referred to. It may be due either to the passage of the contents of the afferent loop into the stomach, or that of the contents of the efferent loop, commonly called "intestinal regurgitation." It is impossible to say in a given case which of the two faults exists. His personal experience embraces five cases in which there was left a long loop of jejunum. All were operated on for the relief of the "vicious circle." In three of them an enteroenterostomy relieved the condition entirely; in one an enteroenterostomy with tying off of the pylorus corrected the condition; and in the fifth it was necessary to do four operations; the first consisted in relieving adhesions at the site of the gastroenterostomy anastomosis, which was followed by temporary relief; a second operation consisted in an enteroanastomosis; a third in the relief of adhesions, and a fourth in tying off of the pylorus. This patient recovered. The author advises that in every gastroenterostomy there should be included an enteroanastomosis between the afferent and efferent loops, thus making sure that no obstruction exists to the afferent loop at the gastricanastomosis. He has abandoned the

Murphy button and employs now the simple suture for both gastric and intestinal anastomoses.

The Difference in the Behavior of Dust from that of Bacteria in the Tonsillar Crypts.—J. Wright notes that there is good presumptive clinical evidence that pathogenic bacteria, which in a state of equilibrium are harmless dwellers in the tonsillar crypts, are under certain conditions absorbed through the tonsillar epithelium. There is fair experimental evidence that pathogenic bacteria of foreign origin, in vast numbers and unmodified by the cellular environment of the tonsillar crypt when blown into the throat of an animal unaccustomed to them, pass through the tonsillar epithelium. In the first instance we must presuppose some antecedent change, some nerve shock, some systemic cause allowing of penetration of the epithelium; in the second, that the foreign pathogenic bacteria, in unusual numbers, overpower the bacteriolytic or other protective influence, normally repelling them. An excellent colored plate in the author's paper shows how carmine granules pass through the tonsillar epithelium from without, while the bacteria remains on the surface. The author has undertaken a series of experiments to determine why the duct or granules pass while germs do not. The granules seem to pass through the viscous layer of bacteria, and then through the epithelium, without carrying any of the bacteria with them. The normal equilibrium existing in the crypt prevents the passing of the bacteria. They may be in the crypt even for a long time, but do not penetrate its epithelium. The viscosity of the bacterium is evidently one of its defensive and offensive properties of a biomechanical nature as distinguished from its biochemical products, the toxine and resulting endotoxine. Evidently also this is the mechanism which combats those auxiliary forces, such as dropping secretions, pharyngeal peristalsis, waving cilia deglutition, etc., by means of which the granules are effectually, and the bacteria ineffectually, kept on the move. Hence we note a tendency to a balancing of the mechanical forces habitual to the tonsillar environment. This equilibrium may be upset by a wound, which carries the germs deep beneath the surface, just as a virulent germ from without or a nervous shock from within may produce a similar result.

Axillary and Pectoral Cicatrices Following the Removal of the Breast, Axillary Glands, and Connective Tissue for Malignant or Other Diseases.—In an illustrated paper, J. B. Murphy summarizes as undesirable sequellæ following mammary amputations and axillary dissections. (1) Fixation of arm to chest with more or less limitation of motion; (2) venous stasis in the arm and forearm with edema; (3) lymphedema of the arm and forearm; (4) neuralgia in either or both; and (5) sensitive retracting scars. The experience of various surgeons is collated with reference to these respective points, and several photographs are presented showing results attained in personal cases. The author describes his own method of operating. When the wound has been closed the arm is dressed at right angles to the body. It is held in this position by an axillary cast extending over the side of the chest and out over the arm to the elbow (figured in the paper). The position is not uncomfortable as one would at first imagine. In his experience the patient suffers less pain than when the arm rests against the pectoral wall. This cast also supports the bar of the axillary triangle and approximates it to the apex. It immobilizes the structure during the process of repair. It can be removed at the end of ten days, when the stitches are taken out. The evil results of fixation are due in a great degree to binding the arm to the chest wall immediately after operation. If a dead space be permitted to exist in the axilla after operation, the cicatrical contraction of its wall will shortly set in and draw the structures in the line of least resistance to fill the space. When the floor of the axilla is a long way from the apex the line of adhesion or contraction is between the ribs and the humerus. This can only be avoided by approximating the base and the apex of the triangle in the days immediately following the operation.

American Medicine, January 6, 1906.

Prognosis in Tuberculosis.—Lawrence F. Flick says the prognosis in tuberculosis depends: (a) On the virulence of the tubercle bacillus; (b) on the dose; (c) on the resistance of the host; (d) on the coexistence of other microorganisms; (e) on the amount of tissue which has been destroyed; (f) on the duration of the disease; (g) on complications arising from toxemias; (h) on age; (i) on race; (j) on social condition; (k) on environment; (l) on financial resources; (m) on temperament; and (n) on character. In forecasting the future of a tuberculous subject the physician should weigh carefully all matters bearing upon the case, and even then should be guarded in his opinion. He should bear in mind that the tendency is always toward recovery, but that there are many impediments in the way of recovery. Restoration to physical health is comparatively easy, but the establishment of a condition of absolute sterility from the tubercle bacillus is difficult. The price of permanent recovery is constant and eternal vigilance and the pursuit of that kind of life which is necessary for recovery. Prognosis should, therefore, always be guarded and conditional. We may assure the patient that he will be restored to physical health and will remain well so long as he takes proper care of himself, but we should impress it upon him that his good health will only continue so long as he does take good care of himself.

Tuberculosis of the Thoracic Duct and Acute Miliary Tuberculosis.—Warfield T. Longcope reports a series of cases which show that the thoracic duct is of great importance as a channel for the spread of tubercle bacilli through the body from the various groups of lymph nodes. Undoubtedly, tuberculosis of the veins and arteries is also to be reckoned as a factor in the rapid dissemination of tubercle bacilli through the body, but is subsidiary in importance to tuberculosis of the thoracic duct and its tributaries. From a study of the cases, Dr. Longcope concludes: Tuberculosis of the thoracic duct is of great frequency in cases of acute generalized tuberculosis. The lesions in the duct from which tubercle bacilli are swept in great numbers through the lymph to the general circulation form the starting point for the generalized acute process. In certain cases of acute generalized tuberculosis, tubercle bacilli may be found in the lymph from the duct, though the duct itself is not the seat of tuberculosis. In a small percentage of cases of subacute generalized tuberculosis the duct may also be affected.

Feeding the Baby.—Ward B. Hoag says the mother's breast, when good, gives ideal results. If well-fed, the baby is good natured, comfortable, has firm muscles, a stable nervous system, the bones are normally developed and he shows a regular increase in weight. Marked deviation in diet, for any considerable period, from that the baby has a right to demand, is bound to produce errors in nutrition. Feeding the baby is not a mechanical process only—simply filling the stomach. Proper growth and development demand definite nutrition. The ability of babies to assimilate food varies; each case presents a personal equation which must be considered. In every questionable case examine the mother's milk for proteid and fat by means of the lactometer and graduated cylinder. Modify the mother's milk by diet and exercise and by giving water to the baby at nursing time. For bottle feeding, good dairy milk and not "one cow's milk," should form the basis of the food. Set "formulas" are an abomination. Begin with the weakest dilution of cow's milk, and increase as the baby assimilates, rather than upset his digestion with a so-called "rational formula" as a starter. Cereal gruels are used successfully in health and disease as diluents of cow's milk. Cane sugar should be used in preference to milk sugar. In making working formulas, the amount of nutrition the baby receives must be known definitely. Alkalies should not be added regularly to the food; rather secure good milk and have it well prepared and kept. Sterilization or pasteurization should be dependent on quality of milk and time of year. Difficult feeding cases are usually the result of bad management. Quantity at feeding and interval of feeding, should be definitely advised. Stomach washing should be employed to promote assimilation.

Priapism in Leukemia.—P. L. Gunckel reports a case in which this distressing symptom occurred. He maintains that the changes which take place in the corpuscular elements in leukemic blood conduce to this condition, and the consequent leucocytosis produces certain changes in the blood-vessels that are concerned in the mechanism of an erection. Of how much importance mechanical pressure by enlarged glands along the course of the nerves, or by pressure upon the veins, may be as a contributing cause in this condition, is not known at the present time.

Journal of the American Medical Association, January 6, 1906.

Diet in Nephritis.—F. C. Shattuck lays down the following as the leading principles pertaining to the dietetic treatment of nephritis: 1. Such control as we may have to-day of nephritis lies in the diet and mode of life rather than in drugs. 2. Such drugs as are useful are so in their effect on the general organism and the heart rather than on the kidneys directly. 3. In all cases of nephritis the main aim is to spare the kidneys unnecessary work, remembering that the urinary system is but one, of the many, making up the body. 4. In acute nephritis, as well as in the acute exacerbations of the chronic forms, Doctors, Diet and Quiet should work together. Starvation for a few days, regulated by the intensity of the process and the strength of the patient, is the keynote here. 5. In the chronic forms the aim is to lighten and to lengthen life. Especially in the contracted form of kidney disease, many years of life and comfort may depend on the physician's skill in adapting sound principles to the particular case and

in securing the cooperation of the patient in persistently carrying out the directions given. Dietary restriction should, in the main, be quantitative rather than qualitative. Alcohol in moderation is not necessarily a poison and may be an aid to digestion. 6. The excess of proteid, not proteid itself, is harmful to the chronically sick kidney. 7. A varied diet is more likely, than a monotonous one, to promote the making of good blood and improving the general nutrition, and that of the myocardium in particular. 8. The amount of albumin is in itself no guide as to the extent of dietry restriction. Shattuck remarks the advisability of a relatively dry diet in dropsical cases, proportioned to the degree of dropsy. In cases of contracted kidney, even without dropsy, he thinks physicians have erred in forcing water, and that the main service von Noorden has rendered is in advocating the limitation of liquids.

Albuminuria in Nephritis and Bright's Disease.—A. Stengel calls attention to the fact that albuminuria is by no means always indicative of permanent nephritis or Bright's disease, unless it is considerable in amount and more or less constant in occurrence. He states that the nature of the accompanying tube casts must not be too greatly relied on to determine the seriousness of the renal lesion, and he states particularly that the occasional or even the frequent appearance of hyaline casts must not be regarded with too much apprehension. Modern methods of centrifugation increase the likelihood of finding casts. Even the definite hyaline cast, as distinguished from the insignificant cylindroids of the mildest grades of renal irritation, is also so frequent in cases of arteriosclerosis, cardiac, or hepatic disease and in gouty conditions, without serious kidney disorder that its significance is comparatively trivial without general corroborative clinical symptoms. He does not underestimate the importance of urinary symptoms, but thinks that the meaning of a trace of albumin is often exaggerated, and that in case of suspected renal disease, frequent examinations of the urine are required and its constant or fluctuating condition should be taken into account.

Cylindruria.—C. P. Emerson says that casts occur wherever albumin might or does occur, but one may be present without the other. It is safe to say that it is the cells that are at fault. The lesion causing cylindruria may be very slight and temporary, some slight disorder of circulation or malnutrition of cells, as renal cells are among the most sensitive in the body. There may be a good index of the present condition of the cell, whether just irritated or totally destroyed, but they give no clue to the underlying conditions. It would seem indeed that the cells of a normal kidney could give a more lively demonstration of their disturbed condition by a vigorous output of casts than could those of a diseased kidney. The latter seems to be able to become accustomed to its condition and gives out no casts. While casts and albumin do not always run roughly parallel, the former are of much importance in following a case of renal disease. Their merely temporary appearance, no matter how alarming in number and variety, means a transient and probably not serious disturbance; their continuance for days, weeks, or months, no matter how few, means chronic nephritis, and for them to remain two years means an incurable case. In nephritis a diminishing number, including fine granular and hyaline casts, means a subsidence of the acute process, while the reappearance of the coarsely granular, epithelial, and bloody casts means a flare up. That they precede albumin in certain early cases of nephritis remains to be proved. In scarlet fever, the casts may outlast the albumin which ceases with the temperature, but in some cases there seems to be only cylindruria from the first and this ceases with the fever. In typhoid, pure cylindruria is not uncommon, and when albumin occurs, casts may become more numerous after its disappearance. Phosphorus poisoning may produce only casts and these abundant epithelial with the cells at all stages of fatty degeneration and fatty casts. Casts also occur in various acute infections, in the cancerous cachexia, in diseases of the central nervous system, in various lung diseases as severe bronchitis and pneumonia, and in empyema. In conclusion Emerson emphasizes the fact that the casts alone are no index to the anatomic renal condition. They are often most marked in non-nephritic conditions, and in the most serious disorders they may be lacking. The more normal the cells the more readily do they form casts when disturbed; in chronic conditions there may be few or none. The duration of their occurrence is important and a case may be well followed by the casts. Epithelial pus and blood casts are more common and of less significance than is generally supposed.

Disorders from Eyestrain.—O. A. Griffin regrets the lack of appreciation of the importance of eyestrain by so many members of the medical profession. The silence of so many of the text-books on internal and nervous disorders is another unfortunate fact, and accounts in part for their common neglect by the practitioner. For the sake of brevity he groups the usual symptoms of eyestrain under the three heads of phenomena of (a) muscular asthenopia; (b) conjunctival and retinal irritation; (c) defective vision. Sensations of dizziness and nausea frequently result from these conditions, though they may also be caused by astigmatism, especially when the axes are at oblique angles. Aside from the direct symptoms of orbital muscular fatigue, congestion and lacrymation, and asthenopia, constant or accentuated by work, the systemic reflex symptoms are of still greater importance, and it is to these that he specially directs attention. A muscular or refractive defect that in one person with ample reserve power may cause few or no disturbances, in another may seriously impair the vital functions, the causal ocular weakness being altogether unrecognized. Thus the ophthalmologist frequently meets cases of chronic headache, gastric disorders, nervous exhaustion, epilepsy, chorea, etc., that have resisted medical treatment but receive permanent relief by the correction of an ocular defect. To illustrate his statements he gives histories of a number of cases of chronic headaches, insomnia, gastric disturbances, neurasthenia, and other nervous symptoms thus relieved in his practice. He notes an increasing interest in the subject as an encouraging indication, but states that there is yet room for improvement, both here and abroad.

The Lancet, December 23, 1905.

Note on the Therapeutics of Unguentum Hydrargyri in a Case of Tuberculosis.—J. T. C. Nash reports the case of a woman, forty-five years of age, who suffered from pulmonary tuberculosis with advanced lesion in both lungs. She also had rectal hemorrhages, obstinate constipation, retroverted uterus, Jacksonian epilepsy of the extensors of the right arm and leg, constant headache and frequent paroxysms of intense agony round the left Rolandic fissure with inclination of the head to the left. It was thought that the symptoms might be due to either anemia or to tuberculosis invasion. The above symptoms, which where marked and severe, after resisting treatment by aperients, iron, and iodide of potassium for many days, were rapidly and remarkably dispelled by the inunction of strong mercurial ointment well rubbed into the groin till the patient was salivated. The nervous symptoms never recurred but the mercurial sequelæ—such as salivation, soreness of the mouth, loosening of the teeth, and loss of hair—caused some discomfort for a time. The remarkable effect of mercury is noteworthy. The severe nervous symptoms quite cleared up. The tuberculous mischief in the lungs became quiescent. Eighteen months later the patient had put on flesh. Ten years later the patient was in better health than formerly. Apart from the complete relief which followed the administration of mercury there was no evidence of syphilis.

The Surgical Treatment of Tuberculous Glands in the Mesentery.—Five cases are detailed by E. M. Corner. Operation was done in all, four permanently recovering and in one, death resulted later from miliary tuberculosis. Ages ranged from six to forty-one years. The author then discusses the relation of tuberculous peritonitis to the cases of caseous mesenteric glands which are suitable for operation. The former disease is recognized in four forms: (1) a dry form frequently with adhesions, (2) a wet form with ascitis, (3) an ulcerative form in which caseous foci are found among adherent coils of intestines, and (4) a suppurative form which is simply one of the former with the addition of pyogenic organisms. Tuberculous mesenteric glands are always found in association with all four forms, but may occur alone. In the former association they are distributed, perhaps scantily, over a large area, but do not form the large movable masses existing in the cases here considered. The latter are the result of tuberculous enteritis and not of peritonitis. The movable palpable masses of caseous mesenteric glands are probably produced in these ways. The palpable tumors of tuberculous peritonitis are formed by adherent coils of intestine or omentum which may contain a caseous focus or not. These tumors are only exceptionally movable. The mobility or fixity of an abdominal tumor becomes a matter of the greatest importance and it is most advisable that the distinction between these two kinds of tuberculous tumors should be made, as the prognosis and treatment are very different. If a caseous focus of tuberculous peritonitis is opened, as it must be occasionally, the results are often extremely unsatisfactory, the patient often ending his life in pain and misery with a fecal fistula, while if suitable cases of tuberculosis of the mesenteric glands are selected for operation gratifying results may be expected.

Some Remarks on the Prevention of Appendicitis.—W. J. Tyson regards the presence of the bacillus coli communis in the bowel as the *sine qua non* of the disease,

but there must be some morbid enteric condition to excite its activity. For an appendicitis there must be some lesion of the appendix to allow the escape of the bacillus, and the latter must be in a state of virulency. Tyson believes that the most prominent cause is constipation. Fecal masses often exist in the various flexures of the bowel even where there is a daily evacuation, and the patient is conscious of no discomfort. As contributing to this the author notes defective masticating teeth, the enormous amount of iced foods now consumed, too quick eating of meals, lack of rest after them, irregularity of eating, etc. All these tend to the lodgment of either fecal masses or of undigested material in the bowel, and these latter furnish the starting point for subsequent trouble. For the relief of the foregoing, the author regards the modern spa treatment with its copious and systematic ingestion of fluid as most advantageous.

Raw Meat Alimentation in Tuberculosis.—R. W. Philip records the results of a series of observations. He found that the exhibition of raw meat was followed by a marked increase in nitrogen retention, even with a diminished intake. Intestinal metabolism was improved, there was a rapid increase in hemoglobin, while digestive leucocytosis (lymphocytosis) was increased, sometimes to more than double that occurring in relation to cooked meat. The following recipes are given for the actual preparation of the meat: (1) Pounded raw meat; that is, finely minced or bruised beef slightly seasoned with salt, served natural, cold or gently warmed throughout, say from a quarter to half a pound, three times daily. The meat should be perfectly fresh; (2) beef juice prepared as follows: extract half a pound of *fresh* meat in half a pint of cold water plus half a teaspoonful of salt for from one and a half to two hours at 35° C. Express the liquid through a cloth. Or the juice may be expressed from the meat directly without the addition of water with more powerful pressure. The meat juice must be freshly prepared for use on each occasion. (3) Raw meat soup prepared as follows: Take half a pound of finely minced *fresh* meat and mix in a bowl with sufficient milk to produce a thick uniform paste. Immediately before serving add half a pint of milk at 60° C.; or the soup may be made in a similar fashion with stock of beef or chicken, or veal, in place of milk.

Ventral Fixation of the Uterus by a New Method.—The operation devised by W. G. Richardson was devised for patients with severe forms of prolapse with cystocele and rectocele, with or without perineal rupture. He finds that often the ordinary perineorrhaphy or colporrhaphy are insufficient owing to a general laxity of the pelvic tissues. Ventral fixation cannot always be relied on, far as usually performed it has for its main object the formation of adhesions between the peritoneal surfaces of the uterus and of the anterior abdominal wall. In course of time these adhesions may disappear, or they may stretch, leaving a dangerous band in the peritoneal cavity. Hence also the uterus again prolapses. There is also associated with the usual method the immediate danger of hemorrhage. The author's method is described in too full detail to be summarized here, and the description must be read in the original paper by those interested. Advantages claimed for it are (1) It is a simple procedure with a minimum amount of bleeding and shock. (2) It can be done rapidly. (3) There is no fear of hemorrhage from needle punctures of the uterus. (4) Patients usually have very little pain as compared with that following the usual methods. They can move in bed and can lie without dragging pain, on either side. (5) There are no sutures to be removed. (6) There is no danger of formation of long bands of adhesions. (7) The uterus is permanently held in excellent position.

British Medical Journal, December 23, 1905.

Remarks on the Value of the Sigmoidoscope in the Diagnosis Between Primary and Secondary Colitis.—P. Lockhart Mummery, in his discussion of colitis, states that, in addition to the information obtained from a microscopic examination of the stools, there should be, whenever possible, a report on the chemical and microscopical characters. The diagnosis of this disease rests upon an examination of the abdomen and an examination of the bowel. A careful digital or bimanual examination of the rectum is necessary in order to exclude any rectal cause for the symptoms which exist. This examination may be made by means of the electric sigmoidoscope. The writer believes that a careful examination of the pelvic colon with this instrument ought always to be made in cases in which symptoms of colitis are present. Cases in which a tumor is situated high up in the bowel can be separated from those in which the cause of the colitis is different. An examination with the sigmoidoscope may also reveal the presence of ulceration. By means of this instrument an exact diagnosis may be made instead of the more or less guess-work method which had to be followed before its introduction. A diagnosis of colitis, which is based entirely upon the symptoms, may be utterly fallacious.

Some Observations on Puerperal Eclampsia.—Reginald Dunlop has recently studied eight cases of eclampsia besides analyzing forty-two others. Forty-two of these fifty cases occurred before the birth of the child. Four of these were during the expulsive stage. The writer calls attention to two clinical types: those occurring in pregnancy and early labor and those occurring during the second stage. In the first class it is probable that the patient has been in the pre-eclamptic condition for some time and the slight additional irritation of the first pains of labor is sufficient to determine reflexly convulsions which were already impending. In the second type, the toxemia may not have been well marked and the strong stimulus of the expulsive pains in the second stage is required to bring about the loss of balance of the cortical centers. The writer believes that if such a case be immediately chloroformed and delivered by forceps the patient will probably have few succeeding convulsions or none. To apply the same treatment, however, to a patient whose labor has not begun or is in an early stage, is adding another risk which is not only useless, but harmful treatment. In these fifty cases edema was present in thirty. But the writer does not consider this symptom a criterion of the imminence of convulsions. One of the most important of the prodromal symptoms is pain in the epigastrium. Epigastric pain was present in six of the writer's eight cases. He describes in one of his cases a clonic spasm which continued for eight minutes by the clock. He is certain that during the whole period of spasm the movements were quite continuous and regular and that there was no interval at any time long enough to allow of natural breathing. He believes that there is nothing to prevent our acceptance of the reports of cases having very long convulsions lasting even twenty minutes. In all of his cases a very rapid involution of the uterus took place, the fundus reaching the brim of the pelvis in one case on the fourth day of the puerperium. The writer emphasizes the importance of saline infusion in the treatment of these cases. In cases, however, in which there is much edema, marked cyanosis with high arterial tension, or much pulmonary congestion, this method should be practised to a moderate extent only.

Remarks on a Case of Detachment of the Retina.—James A. Craig relates the history of this case. Examination of the affected eye showed that the field of vision was defective below, from a point 20 degrees from the fixation point to the periphery. Central vision was unaffected, the patient reading with full correction 6/6. Examination of the fundus revealed the presence of a clearly marked detachment of the retina in the upper quadrant. In his treatment, Craig proved the inefficiency of subconjunctival injections even in conjunction with rigid dorsal decubitus. He then performed evacuation of the subretinal fluid by scleral puncture. The immediate effect was excellent, but in four days the retina again became detached with return of the subjective phenomena. After these procedures had not met with success, the galvanocautery was applied over the seat of operation with the intention of setting up enough adhesive inflammation of the parts to fasten down the retina. After the second trial by this method no signs of detachment again occurred although it is now twenty months since the termination of treatment.

Berliner klinische Wochenschrift, December 18, 1905.

Cryptorchidism.—Katzenstein considers the pathology and treatment of this deformity, which is said to occur in about 30 per cent. of newborn children and in about one per thousand of adults. In spite of its relative infrequency it is stated that over 14,000 individuals were excused on this account from military duty in the Austrain army during the years 1870–1882. In regard to the almost invariably observed imperfect development of the ectopic organ the author expresses the opinion that it is the abdominal situation of the gland which leads to its degeneration, and not a congenital defect. The well-known predisposition of the retained testicle to carcinoma is explained by the author on the ground of its lack of function. In view of the great probability of malignant disease developing in misplaced testicles, the author recommends operative correction of the abnormality in all cases in which a cure has not been effected by massage before the eighth to the tenth year. If a hernia accompanies the retention of the testicle operation is indicated at any age. The statistics of the operations for this condition described by various authors do not present a very encouraging proportion of successful results. Katzenstein describes a new method by means of which he secured a perfect cure in fifteen operations performed on ten different patients. Th

essential step in the procedure consists in the fact that the testicle, after having been freed by careful dissection of the inguinal canal, is drawn down from its position into the scrotum by means of a long dressing forceps carried through an incision made in the lowest part of the scrotum. The gland is then sutured to a small flap of skin which is dissected up from the inside of the thigh and is also stitched to the edges of the scrotal wound. After the vas has been sufficiently stretched by this constant traction, which usually requires at least three weeks, the connecting bridge of skin is cut through and the gland set free from its attachment to the thigh.

A Case of Detachment of the Retina Cured by Operation.—Cohn, in discussing the treatment of detachment of the retina speaks highly of the value of darkness, depletive treatment, and local blood-letting. For the latter purpose the artificial leech of Heurteloup has, he says, fallen into undeserved disrepute, for it is prompt in action, is clean, and readily extracts twenty to thirty grams of blood. Diaphoretics are also of value although subcutaneous injections of pilocarpine are no longer used by the author on account of their weakening effect. In recent times many cures by operation have been reported, Uhthoff, for example, records 8 per cent. of successful results in 337 cases. The author urges repeated sclerotomies as long as any perception of light remains, together with compression, jaborandi, rest in bed and purgatives, and recounts the history of a patient treated in this way twenty-three years ago who has remained cured ever since.

Münchener medizinische Wochenschrift, December 19, 1905.

The Etiology of Eclampsia.—Liepmann publishes the results of a very extensive series of animal experiments undertaken with eclamptic placentas. The material was minced, dried, finely powdered and injected peritoneally into rabbits. As a result of these observations the author comes to the conclusion that the placenta in eclampsia contains a poison not present in the normal structure. This poison is apparently the toxin of the disease, for the more of it the organism has absorbed, as shown by a large number of convulsions, the less of it is to be found in the placenta. On the other hand, the placenta is richer in poison the less of it has entered the maternal circulation. Apparently the chorionic epithelium plays an important part in the formation of this poison, and the placenta therefore appears to be both the site of formation and of distribution of the toxin. The toxin shows a pronounced affinity for the cerebral cells, which are paralyzed by its action and neutralize it. In addition, the poison injures the renal parenchyma, but the liver substance may also be attacked, with the formation of necrotic foci. The injury to the kidney is always a secondary consequence of the poisoning, and if albuminuria already exists it may be markedly increased by the toxin. Both theoretical and practical considerations lead to the conclusion that the best treatment for eclampsia consists in emptying the uterus as promptly as possible, for the expectant plans have given much less satisfactory results. Venesection and intravenous infusion of salt solution are valuable adjuvants, but sudorific treatment by hot packs is directly injurious. In coma or with superficial respiration artificial respiration is of great value; chloroform and narcotics should be used as sparingly as possible. The best results were obtained by chloral hydrate given in 2-grain doses per rectum.

The X-Ray Treatment of Carcinoma of the Esophagus.—Wendel says that although some hope of treating this dire condition surgically is offered by Sauerbruch's development of methods for gaining operative access to the intrathoracic viscera, this method has as yet hardly gotten beyond the experimental stage. So far the best results have been obtained by the use of radium and the *x*-ray. As radium is difficult to procure at present the author tried the *x*-ray in a case of advanced carcinoma of the thoracic portion of the esophagus. The patient was extremely cachectic and could swallow even fluids only with great difficulty. The tumor was ulcerated and had produced an impassable stricture. The *x*-ray was applied through an esophagoscope, carried down to the stenosis. At the same time subcutaneous injections of quinine and sodium arsenate were given. After eight treatments the patient had gained in weight, was able to swallow well-masticated solid food, and no ulceration could be seen. He was then discharged to return at the end of four weeks. Although the result obtained in this case is inconclusive as far as permanency is concerned, the effect of the rays was so favorable that the author urges a further application of the method, and suggests that inoperable carcinomata of the rectum may also be made accessible to the rays through the proctoscope.

Deutsche medizinische Wochenschrift, December 21, 1905.

Dry Iodine Catgut.—Herhold praises very highly the quality of catgut prepared according to the Claudius iodine method, but states that in common with other authors he has found that the material loses greatly in strength on prolonged sojourn in the iodine solution. He describes culture experiments with catgut dried after two weeks soaking in the iodine solution, and agrees with Moschewitz that the material is not only safe *per se*, but is also very difficult to infect. Bits of dry iodine catgut were dipped in pus and laid in agar Petrit dishes. Although some bacterial growth followed, a clear zone all around the catgut remained free from colonies. The author, therefore, considers that the material can safely be used in this form, and describes two types of container in which it may be securely and conveniently stored. Culture tests were also made on catgut that had been soaked in the iodine solution for only three days, and it was found that sterility was secured, so that the author states that in emergencies this length of time is sufficient to obtain safe suture material, though for routine use the ordinary method of preparation is preferable.

The Choice of Operation in Inguinal Hernia.—Baratynski believes that greater individualization is necessary in the choice of methods for the radical cure of inguinal hernia. At present there are two competing operations, that of Bassini and that of Kocher. It is the chief object of the former to effect a reinforcement of the weak abdominal wall, and of the latter to obliterate the peritoneal funnel which forms the starting point of the intestinal protrusion. Kocher's method, accordingly, is not adapted for instances in which there is a serious defect of the muscular structures about the inguinal canal, as it does not offer a very resistant obstacle to relapse. On the other hand when the hernia is still in its earlier stages, if the inguinal canal is not dilated and has an oblique course with fairly normal muscular walls, the Bassini operation involves an unnecessary degree of traumatism in the division of the external oblique and dissection of the cord which it requires. The author believes that before the operation great pains should be taken to ascertain as nearly as possible the anatomical conditions present, and that then the choice of the method to be followed should be directed by the following considerations. If the inguinal region has undergone but little change and the canal is narrow and slanting, conditions that are usually present in the ruptures of children, Kocher's method is to be preferred. In some hernias of medium severity the choice of operation must be governed by the degree of mobility of the peritoneum and the extent of the diastasis between the deep layers of the abdominal muscles and Poupart's ligament. If the peritoneum is redundant and freely movable Kocher's method is indicated; if there is much of a gap between the muscles and Poupart's ligament, Bassini's operation should be done. The latter procedure is also the best in those cases of inguinal hernia in which the inguinal region is markedly abnormal and the canal is dilated.

A Method for Staining Bacteria in Sections.—Saathoff describes the following procedure which he says affords a very simple and rapid method for demonstrating bacteria in sections of tissue. The following formula is given as the most satisfactory: methyl green .15; pyronin .5; 96 per cent. alcohol 5.; glycerin 20.; 2 per cent. carbolic acid, enough to make one hundred parts; filter The sections are put into this solution for two to four minutes and are then washed in tap water until the greenish tinge changes to a purplish one; they are then washed for a few seconds in absolute alcohol which removes the excess of pyronin, and are then cleared in xylol. Oil of origanum should not be used as a clearing agent, as it causes further decolonization of the sections. Protoplasm is stained reddish, and all bacteria including those that are gram negative take a deep red color; the nuclear network is stained blue. If the sections are thick or difficult to stain it is advisable to dilute the stain and let it act for a much longer time. The stain also serves very well to demonstrate intracellular bacteria in smear preparations of exudates.

American Journal of the Medical Sciences, December, 1905.

A Case of Congenital Hepatoptosis, Showing a Mesohepar.—Thomas Wood Clarke and David H. Dolley give a description of this unusual case The point of special interest in its clinical history is the total absence of the accepted etiological factors in floating liver. The patient had never been pregnant, had had no accident, and had not been a heavy worker. Her abdominal walls were not especially lax. Autopsy findings were required to demonstrate this as a case of congenital hepatoptosis. The liver was displaced,

lying entirely on the right side. It had two lobes, an upper, corresponding to the left, and a lower, corresponding to the right. Limited to the upper margin of the upper lobe there was a double reflection of peritoneum to the diaphragm. The liver itself did not touch the diaphragm, and the mesohepar thus formed was thirteen mm. in length. The two peritoneal reflections were united only at their free edges. The lower lobe had no ligamentous attachment. The right lateral and coronary ligaments were entirely lacking. The fissure of the vena cava crossed the left posterior upper extremity of the upper lobe. The writers present the following conclusions: The abnormal position of the liver, with its limited mobility, its atypical shape, the absence of the coronary and right lateral ligaments, the abnormal origin of the left lateral ligament, which assumed the function of the coronary ligament, and of the suspensory and round ligaments, the shifting of the fissure of the vena cava from one lobe to the other, though the course of the vessel was normal, together with other variations, leave no doubt as to the embryonic origin of the condition. Syphilis signs, which were noted in this case, were merely a coincidence. This case must be considered as unique, as a careful review of the literature for the past fifteen years shows no identical one. Although this case does not prove that a mesohepar is the cause of hepatoptosis it does prove Meissner's hypothesis that such a condition may exist.

The Relation of the Lesions of the Gasserian and Posterior Root Ganglia to Herpes, Occurring in Pneumonia and Cerebrospinal Meningitis.—William Travis Howard has been much interested in this subject and has recently examined at autopsy two cases of cerebrospinal meningitis and one case of pneumonia with herpes. In all three of these cases definite lesions were found in the sensory ganglia supplying the herpetic areas. He declares that the cases which he reports furnish additional proof to support the position that the ordinary herpes zoster as well as the herpes of pneumonia and cerebrospinal meningitis is a pathological condition dependent upon definite lesions of certain sensory ganglia, which may be caused by a variety of agents acting in different ways. There is a complete correspondence between the situation of the herpetic lesions and the ganglionic changes. In each case the distribution of the herpes was limited to areas of skin or mucous membrane supplied by the ganglia, which were the seat of the degenerative inflammatory lesions. In those cases with herpes of areas supplied by nerves from the Gasserian ganglion this relation is even more precise. The herpes is dependent upon the ganglionic lesions, and apparently does not vary with causes of the latter. The ganglionic changes in the cases of herpes complicating pneumonia and cerebrospinal meningitis studied by the author are identical with those described by Head and Campbell in their acute cases of so-called spontaneous herpes zoster. In the herpes of meningitis the ganglion changes are probably commonly due to an extension of the inflammatory process along the nerve roots to the ganglia. In pneumonia the matrices morbi are apparently brought to the ganglia by the circulation.

The Nature and the Lesions of Cirrhosis of the Liver, with Special Reference to the Regeneration and Rearrangement of the Liver Parenchyma.—A. O. J. Kelly says in regard to the nature of cirrhosis that it is a chronic focal or localized recrudescing degeneration and partial destruction of the liver parenchyma attended by marked regenerative phenomena on the part of the liver cells leading to the complete transformation of the architecture of the liver and followed by fibrosis. It is not a primary interstitial hepatitis, the changes in the connective tissue being altogether secondary in importance and sequence, probably in large part a replacement fibrosis to fill up potential lacunae left by degenerated liver cells, and probably in some cases at least partly inflammatory. The continuous degeneration and regeneration ultimately lead to a complete change in the architecture of the liver. A specially important factor is the changed circulatory condition both capillary and venous. There is reason to believe that an organ like the liver, although considerably damaged, might be able to establish functional sufficiency were the etiological factor, whatever it might be, corrected or removed earlier than the disease is usually recognized at the present time.

Fatal Obliterating Endophlebitis of the Hepatic Veins.—Alfred F. Hess believes that no case of this disease has been correctly diagnosed. These cases have generally been confused with cirrhosis of the liver. There are present the typical signs of cirrhosis of the liver; ascites with dilated abdominal veins, sometimes a caput medusae, very slight or no icterus, a palpable liver in the early stages, and a palpable spleen. When, however, there is an absence of all etiological cause for a cirrhosis, attention should be directed to the fact, and other features pointing to the disease under discussion should be looked for. If the patient is very young, as is often the case, suspicion should be awakened that one may not be dealing with an ordinary cirrhosis. An important differential diagnostic point is the occurrence of pain over the hepatic area, or localized in the upper abdomen, which is one of the most constant and earliest symptoms of endophlebitis, but exceptional in cirrhosis. The patient with chronic endophlebitis generally states that the swelling of the abdomen has shown itself within a few weeks or even a few days. The writer lays stress upon the importance of post-mortem examination of opening the hepatic part of the vena cava, and examining the ostia of the hepatic veins.

Chronic Anterior Poliomyelitis. George A. Moleen and William G. Spiller describe the case of a man thirty-seven years old, probably syphilitic, who was afflicted with sudden paralysis of the group of muscles innervated by the left peroneal nerve. Complete loss of faradic irritability followed in a week, and this was succeeded by rapid wasting and slight diminution in size of the entire leg. The deep reflexes were present and increased, but not excessively, and in that spinal segment represented by the absolute atrophy they were lost. The symptoms were confined to the left lower extremity and were without change for three months. No fibrillary tremor, sensory disturbance, hand weakness, nor cranial nerve symptoms were present. One year later there was slight general emaciation, complete wasting of the thenar and hypothenar eminences, and, to a less extent, of the interossei muscles; atrophy and paresis of the tongue and pharynx, fibrillation throughout the body, including the tongue, and tendon reflexes still moderately increased. There were no marked electrical changes except in absolutely wasted muscles, and no bladder, bowel, nor sensory disturbances. The patient was becoming more emotional and the illness ended in death. The important alterations in this case discovered at autopsy consisted of the disappearance of many of the nerve cells of the anterior horns of the spinal cord and motor cranial nerves in the medulla oblongata, of the anterior roots of the lumbar and sacral regions, and of the motor nerves of the medulla oblongata, and numerous small hemorrhages in the gray matter, especially in that of the spinal cord. The writers think that this case is one that may properly be regarded as one of poliomyelitis. They believe that the commencement in one lower limb, the paralysis preceding the atrophy, the comparatively rapid development of the symptoms, the absence of sensory disturbances and the pathological findings justify this diagnosis.

Myoclonus Multiplex: With Report of a Case.—D'Orsay Hecht in describing the treatment of this case states that chloral in ten-grain doses by the mouth had a quick sedative action where all other drugs failed, and twenty grains subdued the contractions for several hours. Better than all these in its sedative action was whiskey in one-ounce doses. Given alone it would steady the patient in about thirty minutes and make walking, writing and eating an easy matter. Alcohol added to any of the drugs mentioned acted beneficially when the drug alone proved useless. The whiskey or chloral or both proved to be the only successful agents at the writer's disposal for allaying the myospasms.

Infectious Arthritis: A Bacteriological Contribution to the Differentiation of the "Rheumatic" Affections.—Roades Fayerweather mentions three facts of importance which are to be deduced from the work done in the line of animal experimentation. There is a well established difference displayed by various animals, both among themselves and as compared with man, in their reactions to many organisms. Greater resistance in general is shown by animals as compared with man, more particularly in the case of organisms of slight pathogenicity. A variety of entirely distinct organisms can produce in the joints of animals changes which are indistinguishable clinically or pathologically. The exact reproduction in animals of the lesions in human joints is not to be expected. The writer, as a result of his work, states that evidence from the bacteriological study of acute articular rheumatism shows that the results of the observations of this affection are more at variance than in the less investigated field of infectious polyarthritis chronica villosa. The evidence is in favor of a varied bacterial origin. There is no evidence bacteriologically to show that there is any essential difference between acute articular rheumatism and infectious polyarthritis chronica villosa. The difference in the subsequent course of the two conditions is apparently due to differences in the infecting organisms and in the degree of disturbance they are capable of provoking.

Hematoma of the Sternomastoid Muscle.—J. L. Manasses reports a case in a male child aged two months. There was an irregular enlargement of the right sternomastoid, beginning about 3 cm. from the mastoid attachment. Under daily massage with hot oil the tumor decreased perceptibly and five months later could scarcely be noticed.—*American Medicine.*

Book Reviews.

Biographic Clinics. Volume III. Essays Concerning the Influence of Visual Function, Pathologic and Physiologic, Upon the Health of Patients. By George M. Gould, M.D., Editor of *American Medicine*, Author of "An Illustrated Dictionary of Medicine, Biology, Etc.," "Borderland Studies," "The Meaning and the Method of Life," etc., Philadelphia: P. Blakiston's Son & Co., 1905.

It cannot be gainsaid that Dr. Gould has done no inconsiderable service to the ophthalmologist and to humanity at large by the production of his series of works entitled "Biographic Clinics," chiefly because of his insistence on the influence of errors of refraction in the production of a multitude of symptoms due to disturbances of the central and sympathetic nervous systems. One who carefully reads these volumes, however, must be impressed by the fact that the statements are not always strictly correct and not always just to other writers.

Volume III. is the latest of the series issued. It is a book of 516 pages, containing some thirty-one illustrations. It consists largely of a collection of papers which the author has read before learned societies and which have appeared in medical journals.

Chapter I. is termed "The New Ophthalmology and Its Relation to General Medicine, Biology, and Sociology." According to the argument, the "new ophthalmology" is the study of and the correction of refraction for the relief of "eye-strain." The chapter contains much that is excellent, also not a few expressions that are extravagant. The following are some of the statements in point: "With the exception of *relatively few cases* (italics reviewer's) due to trauma, infections, malnutrition, etc., conjunctivitis and keratitis are of eye-strain origin." . . . "As to iritis and glaucoma, did any skilled refractionist ever see the disease appear in eyes which for years previously had been fitted with right correcting lenses?" . . . "Concerning retinal and choroidal diseases, it is also a truism that they are usually caused by the ciliary strain of uncorrected ametropia" (pages 35-36).

Chapter II., "The Life Tragedy of John Addington Symonds," and Chapter III., "Taine's Ill-Health," are commendable biographical studies. Then follow a chapter by Simeon Snell on "Eye-Strain as a Cause of Headache and Other Neuroses," first published in the *Lancet*, and a chapter by C. Ernest Pronger, read before the Harrogate (Eng.) Medical Society, entitled "Slight Errors of Refraction and Their Influence on the Nervous System." Both of these papers are moderate in tone and present an excellent exposition of the subjects indicated by their titles.

Chapter IV., "The History and Etiology of Migraine," discloses a wide knowledge of the views of various writers on migraine, shows the great divergence of opinion regarding the definition of the affection, and contends, with truth, that a very large percentage of the headaches that are described as migraine are the result of eye-strain due to errors of refraction.

Then follow two chapters, one, "The Optic and Ocular Factors in the Etiology of the Scoliosis of School Children," the other, "Visual Function the Cause of Slanted Handwriting, Etc.," both of which show a careful study of the questions involved and ingenious arguments in support of the writer's contention. Chapters on "Dextrality and Sinistrality" and on "The Pathological Results of Dextrocularity and Sinistrocularity" follow. These conditions are discussed in an interesting and ingenious manner.

A chapter is devoted to the consideration of "Subnormal Accommodation," followed by one entitled "The Reception of Medical Discoveries." The latter occupies fifty-two pages. In this the author reviews the difficulties and trials of those who have discovered new truths and have endeavored to obtain their acceptance by civilized humanity, finds fault with that scepticism which is really rational conservatism, and calls his confrères to account for not accepting his statements without question. The argument presented in the text of this volume is, however, in the main correct.

Surgical Aspects of Digestive Disorders. By J. G. Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital, etc., in association with A. K. Stone, M.D., Physician to Out-Patients, Massachusetts General Hospital, etc. New York: The Macmillan Company, 1905.

It is frankly stated by the authors in their introduction to this volume that its purpose is to present an estimate of what surgery may accomplish in the diseases of the abdominal digestive organs, excluding here any consideration of the mouth, pharynx, and esophagus. There has been a flood of controversy on this subject, and yet there are but few definite conclusions on hand which may aid the decisions of the practitioner who is more inclined toward medicine than surgery. Particular interest attaches to this book because it is written in combination by a surgeon and an internist. Its component facts are viewed, however, from different, but not from opposing, points of view. The end result is very satisfactory and the book constitutes an interesting and noteworthy effort to contract the gulf which is assumed by many to exist between the two great divisions of medical science. The views which have been agreed upon by the authors, do not savor of extreme radicalism nor is their character dogmatic. The discussion of the subject matter is based on the belief that the duodenum is the central chamber of the digestive apparatus, from both the anatomical and the physiological standpoints, and its diseases are therefore closely associated with those of the neighboring and related organs. The latter assumption may likewise be applied to the other abdominal viscera, so that a broad view of digestive disturbances must take in a consideration of all the abdominal organs. The authors claim, and rightly, that digestive disorders cannot be handled as is done in most textbooks, on an individual anatomical basis, for by this means the involved questions relating to abdominal disease cannot be fully appreciated. The book is written in a pleasing manner, it is sensible and interesting, and will repay being taken into the library of either the surgeon or the general practitioner. It can be especially recommended to the latter for reference in those cases where a doubt may exist as to the propriety of more radical treatment of some obscure and obstinate digestive complaint, and the arguments presented by the writers may help to turn the balance in favor of a possible surgical intervention before this step would be taken too late to do any good.

Gallstones and their Surgical Treatment. By B. G. A. Moynihan, M.S. (London), F.R.C.S. Fully Illustrated. Philadelphia, New York and London: W. B. Saunders and Company, 1905.

Diseases of the gall-bladder, with especial reference to cholelithiasis, are now receiving a degree of attention comparable with that accorded to the equally important subject of appendicitis during recent years. A considerable number of well-known surgeons have devoted themselves to the study of this condition and at the present time quite well defined data are at hand regarding the diagnosis and treatment of gallstone disease. There is no doubt, moreover, that in the future surgical treatment will be adopted more frequently and in an earlier stage of the disease than has hitherto been customary. The great and increasing importance of the subject is therefore believed by the writer to constitute a sufficient warrant for the publication of this large work of over 375 pages. The author has been closely identified with the development of this branch of surgery and is as well known in this country as in England. He bases his book on a course of lectures delivered at the Medical Graduates' College in London and includes a detailed account of the etiology, pathology, clinical manifestations, and operative treatment. The latter is considered in a separate chapter at the end of the book, and presents the most approved methods of procedure now adopted. The book is thoroughly well constructed in every way, the text is concise and therefore easily read, the illustrations are good and largely original. The carefully detailed accounts of the early clinical manifestations of gallstone disease will render the book of especial value to the general practitioner and may influence him to resort to surgical treatment at such an early period of the disease that the patient's chances will be largely improved for a final cure.

International Clinics, a quarterly, by leading members of the Medical Profession throughout the World. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, U. S. A. With the collaboration of Wm. Osler, M.D., John M. Musser, M.D., James Stewart, M.D., and others, with regular correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels, and Carlsbad. Volume III. Fifteenth Series, 1905. Philadelphia and London: J. B. Lippincott Company 1905.

This set of books is becoming more and more valuable as a library of reference. Almost every subject receives attention in the course of a few years, and it might be well for the editors to give out soon a concise index of subjects covered since the issue of Vol. I. Dr. Johnston of Pittsburg has the first contribution under the department of "treatment" upon the uses of the *x*-ray. It is freely illustrated and gives the results of personal experience in treating cancer and other diseases. The next interesting article is on the practical subject of the "musculotonic and diuretic action of formic acid and the formiates" by Henry Huchard of Paris. This is followed by one on opotherapeutic treatment of renal insufficiency by Teissier of Paris. In the surgical section we have, among others, a long article on fractures of the patella, by Wright of the Long Island College Hospital. Paraffin injections by Broeckaert, ethyl chloride anesthesia, with full bibliography, by Luke of Edinburgh, and many other articles of interest complete the volume.

Society Reports.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, December 11, 1905.

THE PRESIDENT, DR. THOMAS E. SATTERTHWAITE, IN THE CHAIR.

Symposium on Pneumonia.—Dr. SATTERTHWAITE, in opening the discussion of this subject, said we were approaching the period when pneumonia promised to be rife in all our cities. We knew that the disease, at times, appeared to take on the character of a dangerous epidemic. In a western city, last season, it had carried off more victims than tuberculosis: in another city where about a thousand cases had occurred, the mortality was upward of 50 per cent. The speaker raised the question of whether or not pneumonia should be a notifiable disease. For many years there had been evidence that it might be, under certain conditions, a contagious disease, but to what extent was it contagious, and under what conditions should pneumonia patients be quarantined? In that connection it would be interesting to know how far this contagious character was observed in the rural districts, or in scattered settlements. Other questions that suggested themselves were, had we to deal with one or several etiological factors? What was the relation borne by pneumonia to occupation, the season of the year, age, and social conditions? Was the disease self-limited? If not, what were the remedial agencies especially applicable to the different forms of the disease?

1. **The Prophylaxis of Pneumonia.**—Dr. JAMES M. ANDERS of Philadelphia discussed this phase of the subject. His conclusions were as follows: 1. Certain degenerative lesions, especially of the cardiovascular system and the kidneys, had shown an increased incidence during the last two decades, and these were found to be associated or antecedent conditions in many cases of pneumonia. Hence, they were probably potent predisposing factors. 2. The indoor conditions during the cold season favored multiplication and propagation of the pneumococcus, and at the same time tended to diminish resistance to infection by the specific organism. 3. The aged were peculiarly susceptible to pneumococcus infection; hence, their bodies should be kept as strong and healthy as possible, especially during the pneumonia season. 4. To overcome the predominating factors of individual predisposition, special attention must be paid to the subject of ventilation, to appropriate clothing, and to the avoidance of agencies that caused degeneration of the heart, vascular system, and kidneys, such as alcohol, social excesses, an over-strenuous business or professional life, and the like. 5. The sputum was the principal source of infection, and should be thoroughly disinfected as soon as it was expectorated, and then destroyed by burning. Public expectoration should be restricted in every possible manner. 6. A large proportion of the general populace harbored the pneumococcus in the nasopharynx, and this was especially true in families and institutions in which cases of pneumonia had occurred: hence, thorough cleanliness and systematic disinfection of those chambers should be carried out during the pneumonia season, more particularly in the case of persons more or less exposed to the virus of the disease. 7. Means to prevent dust from accumulating, and its daily removal from the home and the city streets were imperatively demanded. 8. Public health authorities should be given full executive power to carry out rules and regulations relative to pneumonia, looking to the prevention of its spread, as in the case of other infectious and contagious diseases; they should also carry on a campaign of public education. 9. Measures of prophylaxis must accord with intelligent public opinion before they could be rendered wholly efficient, either by municipal or private authority.

2. **Some Questions in Diagnosis.**—Dr. REYNOLD WEBB WILCOX said the mortality of pneumonia had been markedly reduced during the past six years, practically to five per cent. in private practice, and in order to reduce it still further, an early recognition of the disease was necessary. Supposing, for example, the physician was called to see a robust individual with a chill, or an old person who complained of sudden unaccountable weakness, or a child with a convulsion, followed by pain in the abdomen, or a patient who complained of soreness on one side of the chest or the other, how soon would it be possible for him to determine whether or not he was dealing with a case of acute infectious pneumonia? The temperature, or an examination of the sputum would not help him, nor could he expect to find the classical physical signs at that stage of the disease. In making the diagnosis, he would have to depend largely on minor conditions. A careful examination of the affected side of the chest would show that the pause normally occurring after expiration was shortened, with increased vocal resonance, particularly of the whispered voice, perhaps, over a small area. The affected lung had lost some of its normal elasticity. The heart sounds might be found to be transmitted over a large area, or there might be an accentuation of the pulmonic second sound. Within forty-eight hours the typical signs of pneumonia can be easily distinguished.

In dealing with a long-continued pneumonia, the diagnosis could often be established by the more modern methods of investigation, rather than by the older rules laid down in the text-books, which might be regarded more or less in the light of traditions that had been handed down to us. In differentiating between long-continued pneumonia and typhoid fever, the diminution of the chlorides in the urine on the one hand, and the results of the Widal reaction on the other would often clear up a doubtful case. The speaker also called attention to the fact that in certain cases of cerebrospinal meningitis, the force of the disease seemed to expend itself on the lungs, according to observations which he had made and the results he had reported in 1887. In such cases the low pulse rate, in connection with a high temperature curve; the results of lumbar puncture; the presence of Kernig's sign, and other local symptoms would help clear up the diagnosis. In these cases the difficulties are found in hereditary text-books rather than in actual practice, provided the patient is carefully examined and the results of all methods of examination carefully weighed.

3. **The Present Treatment of Pneumonia as Exemplified by the Routine Treatment of the Disease in Four of the Large New York Hospitals.**—Dr. HENRY P. LOOMIS read this paper. After referring to the fact that pneumonia to-day occupied first place in mortality statistics as the cause of death, Dr. Loomis said that in our large metropolitan hospitals we might look more than anywhere else for the most advanced methods of treatment, as there every new suggestion in therapeutics was tried, weighed, discarded, or adopted. Accurate statistics were kept, thus furnishing data for approximately reliable and impartial conclusions, and all under the critical eye of the young and enthusiastic members of the house staff, who, before their two years were up, were well able to determine the treatment producing uniformly the best results. For the purpose of comparison, the speaker said he had selected the Presbyterian, Roosevelt, New York, and Bellevue Hospitals. He was surprised to find, after investigation, what a uniformity there was in the treatment of pneumonia in these different hospitals. This was not seen in the case of any other disease, with possibly the exception of acute rheumatism. The treatment, briefly outlined, was as follows: Upon admission, the patient was usually given calomel, in small, repeated doses, followed by a saline the following morning. Local applications to the chest were usually restricted to those cases in which there was intense pain and distress. No local applications were made as a routine practice. An exclusive milk diet was adopted during the height of the disease, giving the milk plain or modified. The treatment of the temperature varied somewhat in the four institutions above named. A temperature of 104 and

over was not regarded necessarily as an indication for special treatment, unless it was accompanied by nervous symptoms, marked restlessness, or delirium. Then, at the Presbyterian Hospital, it was treated by the cold pack to the anterior portion of the chest; at the New York, the temperature was controlled by alcohol sponging, or, if that proved ineffective, by the cold pack; at Bellevue, sponging with tepid water (from 80° to 85°) was employed, and at Roosevelt, alcohol sponges or anterior packs. The New York and the Presbyterian Hospitals were the only ones in which tub baths were given in pneumonia, and then only in cases of toxemic pyrexia or in alcoholic cases, with nervous symptoms. Codeine was used to control the cough, ordinarily, in doses of one-quarter to one grain every four hours. Occasionally, heroin, in one-twelfth grain doses, was given, and at times morphine. For the insomnia, which was often a distressing symptom, the drugs most used were trional, veronal, and codeine. Pulmonary edema was treated by hypodermic injections of adrenalin; also by atropine, cupping, and stimulation. Oxygen was not given as much as formerly in any of the hospitals, its use being restricted to cases of dyspnea and cyanosis. The oxygen tank seemed to still hold its place as the actual forerunner of the end. The three cardiac stimulants which were used in all the hospitals were alcohol, strychnia, and digitalis. Of these, alcohol occupied the first place, and most reliance was placed upon it. The indications for these cardiac stimulants of course varied in different cases. At none of the hospitals, with the exception of Roosevelt, was digitalis used to any extent. Nitroglycerin was only used occasionally. At Roosevelt they were using saline injections into the rectum, especially in alcoholic cases and where nutrition was failing. Eight ounces of a normal saline solution were introduced into the rectum through a funnel attached to the end of a catheter. These injections were given once in four hours; they were well retained, and he had been informed by the staff that in many cases markedly beneficial results were obtained. In conclusion, Dr. Loomis said he wished to emphasize the three following points: 1. A plea for the more general use of morphine hypodermically in the early stage of the invasion of pneumonia, a stage which in very many cases was accompanied by not only the shock to the nervous system from a sudden and overwhelming toxemia, but by distressing pain, often amounting to the agony of a pleurisy. 2. If any criticism could be offered of our treatment of pneumonia during the past few years, it was along the line of the injudicious and often unwarranted use of alcohol. 3. The last, and possibly the most important point was that more patients were damaged than helped by the promiscuous drugging which was still too prevalent.

4. **The Treatment of Pneumonia.**—By Dr. Hobart A. Hare of Philadelphia. The chief point in Dr. Hare's paper consisted in his urging that remedies be administered in pneumonia only when very definite and clear indications for their use were present. In many instances, spurred by the anxiety of friends, the physician was inclined to give medicines continually throughout the entire course of an attack of croupous pneumonia, forgetting that remedies which were powerful enough to do good, might, under certain circumstances, be powerful enough to do harm. Further, it should be recognized that our means of treatment could not be curative, but were directed to the support of the system and the regulation of its functions until the disease had run its course. In many instances, rapidly acting, but fleeting circulatory stimulants, such as Hoffman's anodyne and the aromatic spirit of ammonia were all that were needed to bridge over temporary periods of depression. Such remedies were not advantageous when used for a long period of time, as they lost their effects and were apt to disorder the stomach. If digitalis was employed, it should always be a preparation that had been physiologically tested, as specimens of digitalis often varied greatly in their physiological activity. Of the remedies that were used for the purpose of combating collapse and circulatory failure, strychnine and atropine undoubtedly ranked highest, the latter being particularly valuable in those cases in which there was a gaseous pulse, with relaxed blood-vessels. Digitalis often failed, because the heart muscle had undergone degeneration as a result of the toxemia, or because the high temperature of the disease prevented it from exercising its physiological properties. Mild alkaline diuretics, for the purpose of flushing the kidneys, were useful. The writer emphasized the necessity of avoiding medication excepting in the presence of very direct indications for the use of certain drugs. On the other hand, he advocated the free administration of remedies which were indicated to meet special conditions arising in the course of the disease. While on the one hand the physician should not be too active, it was an equally great mistake to be unduly passive in the presence of such a grave illness. Nitroglycerin, which was often used in pneumonia as a cardiac stimulant, was always abused under such circumstances, since it was a circulatory relaxant and never active as a true stimulant. This was a point overlooked by many of the profession. The only indication for the employment of nitroglycerin in pneumonia was when the arterial tension was unduly high, and the heart was therefore called upon to do an excessive amount of work.

5. **The Rôle of Saline Solution in the Treatment of Pneumonia.**—By Dr. J. Madison Taylor of Philadelphia. (See p. 48.)

Dr. Andrew H. Smith suggested the following concept of an average case of pneumonia: Granted that the patient, to begin with, was one of the multitude who had pneumococci on the mucous surface of the air-tubes, and, granted that the conditions had become favorable for their development, a peculiar, specific irritation would be set up, in response to which a peculiar fibrinous exudation would take place into the air-cell. This exudate would constitute a culture-medium exactly fitted for the growth of the parasite, which would immediately begin its multiplication, and the formation of its appropriate toxin. This toxin, being taken up into the blood, would produce systemic effects proportional to its amount and virulence. The exuded material constantly increasing in amount would overflow into adjacent cells and adjacent lobules, carrying the infection with it, until a sufficient area was involved to give rise to appreciable physical signs. The advent of those signs would be earlier in proportion as the observer was a competent auscultator, and was thorough in his examinations. The proportion of toxin in the exudate would increase until the latter became unfitted to act longer as a culture medium, when the further growth of the parasite in that immediate locality would cease. Meanwhile the pressure of the exudate, aided by the coagulating effect of the toxin, would have brought about arrest of circulation in the capillaries derived from the pulmonary artery, and the functions of the part would be completely suspended. The nutrition of the tissues, however, would continue to be provided for by the nutrient capillaries derived from the bronchial arteries, and, having the greater power of the left ventricle behind them, gangrene would be averted. So long as fresh areas of lung were being invaded, so long would the systemic disturbance continue; but when the formation of toxin in the zone last invaded had ceased, there would be a cessation of the general toxic phenomena, and a fall of temperature, marking the crisis. There was evidence going to prove that the crisis was hastened by the formation of an antitoxin in the infected tissue as a secondary process. As soon as the active process in a given location had ceased, a process of repair was set up, in which the nutrient vessels and the absorbents were the principal agents. As the result of this process, the exudate became liquefied and was removed, partly by expectoration, but mostly by absorption. As this was accomplished, the circulation through the functional vessels was resumed, and the part was restored to its normal condition.

Dr. William H. Thompson said that in considering the

mortality statistics of pneumonia in hospital practice, the fact should be kept in mind that many of these patients were not taken to the hospital until after they had been seriously ill for several days. He recalled cases where death occurred within two or three hours after the patient's admission. Another factor that should not be lost sight of, both in connection with the mortality statistics of pneumonia and other infectious diseases that prevailed in epidemic form, was the stage of the epidemic. A striking illustration of this was observed at Roosevelt Hospital during the last epidemic of cerebrospinal meningitis. Of sixteen patients admitted to the hospital during the height of the epidemic, all died but two; of the next series of sixteen, admitted during the abatement of the epidemic, all recovered but two. In all of these the treatment had been practically the same. Dr. Thomson called attention to the fact that on account of the weakened condition of the heart in pneumonia, the strictest instructions should be given to keep the patient perfectly quiet; he should not be raised for the purpose of examining the chest, as even a change of posture might produce cyanosis. The speaker expressed his conviction that the treatment of pneumonia to-day was not as good as it was fifty years ago in the results it gave. We were still compelled to treat the disease symptomatically. We were not giving the antidote to the poison, and until we found that, we could go on talking forever about this, that, or the other line of treatment.

Dr. Beverley Robinson said he had certain fixed notions in regard to pneumonia, but that he would restrict himself to one or two points. In regard to the prophylaxis of the disease he agreed substantially with Dr. Anders. The mortality statistics quoted by Dr. Loomis, which he had obtained from the records of four of the large hospitals in this city, did not furnish a fair indication of the death rate of pneumonia in private practice. It was a well-known fact that many of these patients were not transferred to the hospital until the third or fourth or fifth day of their illness, at a critical stage, and their fright and alarm at being taken away from home helped to overwhelm the much weakened heart. The patient's surroundings and manner and condition of life also had much bearing upon the prognosis, and arterial changes were very common among hospital patients. In a certain number of cases of pneumonia the toxemia was so overwhelming that a fatal outcome was rapid and certain. Others, because of their vitality, or because the toxemia was of a milder form, would recover with the aid of little or no medication, or in spite of all medication. Dr. Robinson said that when a stimulant was indicated in these cases he favored alcohol in the shape of brandy or whiskey, and he emphasized the fact that it should be of the best quality obtainable. Clinically, he believed that alcoholic stimulants deserved a high place in the treatment of pneumonia, and one for which, under certain conditions, there was no substitute. He also placed much reliance upon the proper use of creosote inhalations, not only in the treatment of pneumonia itself, but as a prophylactic measure in severe colds, with threatening pneumonia. Digitalis was also of value in some cases.

Dr. George B. Fowler summarized the result of his experience in the treatment of pneumonia as follows: At the outset, when the patient seems to be getting along well, do little or nothing, excepting to make him comfortable by the use of a hot water bag or bottles, and perhaps, to ease his mind, giving him a mixture of ammonium and the spiritus mindereri. When the time came to allay pain, morphine was given. As cardiac stimulants, when the necessity arose for them, alcohol and strychnia, and sometimes digitalis, was prescribed. We had no specific, no antidote for the disease, and until one was found we had to follow the result of our experience.

Nominations for Officers.—The following nominations for officers for the ensuing years were made: *President*, Dr. Thomas E. Satterthwaite; *Vice-President*, Dr. Ransford E. Van Gieson of the Borough of Brooklyn; *Recording Secretary*, Dr. P. Brynberg Porter; *Chairman for Borough of Manhattan*, Dr. J. Blake White; *Member of the Executive Council*, Dr. Reynold Webb Wilcox.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held November 21, 1905.

Dr. Charles H. Lewis in the Chair.

Carcinoma of the Pancreas with Diabetic Symptoms.—Dr. Lewis A. Conner made this clinical report. The patient was a male, 65 years of age, and was admitted to the New York Hospital September 9 and died October 5. Two months prior to admission he began to lose appetite, strength, and flesh, and was obstinately constipated. No special increase in the amount of urine passed was noticed, although he felt quite thirsty. One month before admission he began to have severe pain in the abdomen, which had been present much of the time since. At the beginning of his illness he weighed 297 pounds; on admission he weighed 178 pounds. After admission the temperature was normal for a few days and then ranged between 99° and 101° up to death. Examination of the blood showed the number of leucocytes to be 30,000. The amount of urine varied from 19 to 64 ounces a day throughout the illness. The first few examinations showed the specific gravity to be from 1.034 to 1.041. There was a trace of albumin, a few casts, 4 per cent. to 5 per cent. of sugar, and a negative reaction for the acetone bodies. On September 16, on rigid diabetic diet, the sugar dropped to 0.7 per cent. On September 22, although the diet was a mixed one, the sugar entirely disappeared and remained absent until death. The patient appeared drowsy and weak, but there were still no evidences of acetonuria. Slight jaundice was present. The liver dullness extended a short distance below the free border of the ribs and the abdomen was still very full despite the loss in weight. On October 2, the jaundice became much deeper, and the liver could be distinctly felt extending to four fingers below the free border and at its edge a small, hard, and irregular nodule could be felt. Just below this was felt and seen a smooth, rounded, elastic mass as large as an orange, which was evidently the distended gall-bladder. In the region of the pancreas neither tumor mass nor tenderness could be made out. Until this date the stools had been constipated and dark colored; then they became clay-colored and contained a large quantity of fat and showed traces of blood. The patient grew rapidly worse and died three days later. The autopsy revealed a large cancerous mass, the size of a large orange, occupying the head of the pancreas, which had ulcerated through the duodenal wall at one point and which had caused complete obstruction of the lower end of the common bile duct and pancreatic duct. Separated from the tumor by a small area of apparently normal pancreatic tissue was a second tumor as large as a small lemon; this occupied the tail of the pancreas. All the bile passages were much distended. The increase in the size of the liver was due chiefly to the distension of its ducts. Several small metastases were scattered through the organ, but otherwise the body was free from secondary deposits. The kidneys showed evidences of chronic interstitial nephritis. The microscopical examination of the mass showed it to be carcinoma which in places conformed to the medullary type but in others contained much fibrous tissue.

The clinical course of this case illustrated in a very striking way the two stages described some years ago by Miralié, *i.e.* an early or glycosuric stage in which the symptoms were those of a severe diabetes plus severe abdominal pain, and a second or terminal stage marked by disappearance of the glycosuria, intense jaundice and great enlargement of the gall-bladder. The reason of the disappearance of the glycosuria in such cases was obscure and difficult to explain.

A Case of Typhoid Fever Complicated by Mesenteric Thrombosis, with Symptoms Simulating Perforation.—Dr.

William L. Baner made this clinical report. The patient was a man, 27 years old, weighing 200 pounds, a pronounced alcoholic, who entered St. Vincent's Hospital on September 27, suffering from typhoid fever and about to enter the third week of that disease. On admission he had a low, muttering delirium, temperature 104°, pulse 110, and respirations 28. The spleen was palpable, abdomen not greatly distended, and the characteristic eruption was noted. A positive Widal reaction was obtained 1-40, and the leucocyte count was 6,000. The patient was given an initial dose of calomel, hot turpentine stupes were applied to abdomen, and the rectal tube was used to relieve flatus. Sponge baths were ordered at 90° when temperature was above 103°. One pint of milk was allowed in twenty-four hours and water given freely. For four days following admission the patient was delirious, with temperature above 104°, reducible about one and a half degrees by bath. With only one pint of milk allowed daily, the casein indigestion was several times shown by curds in the stools, causing temporary withdrawal of the milk. On sixteenth day of disease the administration of half an ounce of castor oil was followed by a large constipated movement, resulting in lessened tympany and temperature and an improved general condition. The ordinary course of the disease until the thirty-second day was followed. In the afternoon of that day the patient complained of sudden tearing pain in the epigastrium, which he said "ripped up" into his lung so he "could not breathe." The temperature was 101°, pulse 110 and rather weak, respirations 32. The fingers were slightly cyanotic and the patient appeared anxious. Following this pain the patient broke into a profuse sweat. Seven hours after the onset of the pain the temperature was 102.6°, pulse 132 and weaker, and the patient was very restless, very thirsty and complained of pain in epigastrium. The leucocytes numbered 20,000. The abdomen was flaccid except for a slight rigidity of the right rectus. The liver dullness was two inches below the free border. The patient was operated on that same night by Dr. J. J. Higgins. A portion of the lower jejunum and upper ileum was found to be purplish and distended with lusterless serosa. There were no constricting bands or mesenteric twistings. About eighteen inches of the affected gut were resected and a Murphy button inserted, and the wound closed without drainage. Patient died same night. Autopsy was not allowed. The pathologist reported that he was unable to actually demonstrate thrombus or other pathological findings in the specimen as submitted, but that the most probable cause of the condition was thrombosis by one of the small intestinal branches of the superior mesenteric artery. The only other possible explanation was a localized paresis of the gut. There were numerous ulcerations in the portion of the intestine removed, some of them so deep that the base resembled tissue paper. In view of the condition of the gut as found at operation and the absence of constriction or twisting, and in view of the sudden pain and the symptoms, it would seem that a diagnosis of thrombosis was reasonably certain.

Dr. Henry W. Berg said that recently he had seen in cases of thrombosis occurring in typhoid fever Widal's reaction in dilutions of 1-180, 1-240 and 1-100. The percentage of agglutins must have been high indeed. Clots were encouraged by higher agglutinating power.

Obstruction of the Pylorus.—Dr. Robert H. Halsey read this paper (see p. 53).

Dr. Edward Quintard said that whenever one met with cases in which an obstruction in the stomach was supposed to exist it was very important to determine the cause of that obstruction because it had such an important bearing upon the question of medical or surgical treatment. In cases of so-called supersecretion washing out the stomach would often cause the condition to disappear entirely. When these retention symptoms were cleared up by frequent washing out of the stomach this hypersecretion would cease. In one case, where there were 1,500 c.c. in the morning (remnants being found two days after meal), the thorough cleansing of stomach, and placing the patient in bed, resulted in marked improvement with an apparent normal gastric juice. He was interested especially in what was said regarding lactic acid and sarcinæ, and it was astonishing how many men to-day held firm to the belief that the presence of lactic acid was a sure sign of malignant difficulty. It was not so at all. Again, it was interesting to note that one may meet with cases in which there are symptoms of obstruction in the stomach and yet the obstruction itself may be distant from that organ. He referred to recurrent intermittent stenosis of the stomach, which was accompanied by a chronic gastritis, which might come on gradually or acutely, and the patient might or might not complain of gastric symptoms. The patient might complain that periodically he had attacks of burning pains, vomiting almost uncontrollable at times, and even water could not be retained. Some of these patients did not vomit more than half the quantity ingested, while others vomited from 1,500 to 1,800 c.c. The functional signs varied greatly. The pylorus became unusually congested, inflamed, swollen, and there was a temporary stenosis of that pylorus. After the vomiting and because the patient could not take food, the tumefaction at the pylorus went down and the opening became normal, or sufficiently patulous for food to pass through. Such patients should be placed in bed and fed per rectum for a day or so, the stomach should be washed out and then these patients will get along all right and require no surgical interference whatsoever.

Dr. S. Suzuki, Surgeon-General, Imperial Japanese Navy, referred to the stomachs of the Japanese, especially the lower classes, and said that with the obstruction there was always dilatation. In many of the lower classes it was found that dilatation occurred without any obstruction at all and this appeared to be more common in Japan than elsewhere, and he believed it to be due to the amount of food that they ingested, that was to say, the volume of the food, but not particularly the weight. The lower classes indulged freely in barley, rice, vegetables, radishes, potato, etc.; as a result there was a large bolus of food which tended to dilate the stomach. He believed that the volume of that organ among Japanese was larger than among the Americans or Europeans. He had seen many post-mortem examinations in which it was noted that the stomachs were from three to four times larger than normal. He referred to a case of syphilis of the stomach, the only one he had seen, which gave symptoms of pyloric obstruction; the antisyphilitic treatment relieved the symptoms. This he believed to be among the rarest of diseases. Pyloric obstruction must be given a fair trial under medical treatment before surgical procedures were adopted. To-day opening the abdomen was not a dangerous procedure if proper precautions were taken, and, therefore, he said he would be inclined to open the abdomen and see exactly what he was dealing with. If an organic obstruction was found which was removable, he would remove it; if this was not deemed advisable, close the abdomen and the patient will have suffered no harm.

Dr. Max Einhorn said that many clinicians thought that continuous hypersecretion did not exist except as the result of organic lesions. There were cases, however, in which continuous hypersecretion was really of a neurotic type and no organic lesions would be found. Pyloric obstruction could be diagnosed before stomach dilatation set in. The important point was, whether the stomach was able to push on the food. In the neurotic type of continuous hypersecretion he said that one always found a more or less large, or considerable, amount of fluid, but without food in the fasting condition of the organ. If such a patient worried a great deal the hypersecretion would continue and instead of two or three ounces being present there would be as much as four, five, or six. These cases were always more or less amenable to treatment. The nervous state of the patient should be allayed, alkalies should be given, electricity could be used with advantage, the treatment being directed more to the nervous condition of the

patient than to the stomach itself. Continuous hypersecretion due to organic lesions was more frequent and in more than one-half of the cases there would be found a benign obstruction of the pylorus; in such cases the hypersecretion was always mixed with the retained food; in such a stomach in the fasting condition would be found a great deal of gastric juice as well as food.

A Clinical Study of Grocco's Paravertebral Triangle.—Dr. Austin W. Hollis presented this paper. He said that Grocco's triangle was a paravertebral patch of dullness situated at the base of the chest posteriorly on the side opposite a pleural effusion; its base was at the level of the twelfth rib and varied in size to 10 centimeters in length, its vertical side corresponding to the median line and usually reached to the level of the fluid. It might be obtained when the patient was in the erect posture or in lying on the normal side, but it should disappear when lying on the side which contained the fluid. The cause of this phenomenon was uncertain. Luigi Ferrannini, from the discovery of a radioscopic shadow of its site, concluded that it was due to local pulmonary condensation caused by a displaced heart. Ewart adduced the theory that fluid in contact with the spinal column on one side would transmit a dull note to the opposite side through the medium of the spinous and transverse processes of the vertebral column and heads of the ribs. Dr. Hollis, from his own observations, regarded this theory as the correct one. At the New York Dispensary and in the wards of St. Luke's Hospital during the past three months he said he had made a careful study of all unilateral pleural effusions and unilateral basic pneumonia to determine the presence or absence of this paravertebral patch of dullness. It appeared from this report of eighteen cases that Grocco's triangle was present in just one-half of the cases. The cases were all serous effusions and included almost every variety in the amount of fluid. In one example with about as small amount of fluid as was possible to recognize, there was no suggestion of the triangle. In two cases with the left chest full of fluid, it was found in one and absent in the other. In the case in which it was found the degree of dullness over the triangle was rather variable. The height of the triangle was as a rule lower than the level of the fluid. In one case, with the chest full of fluid, the apex of the triangle was at the seventh dorsal spine. When the patient was placed on the side of the fluid the dull triangle as a rule gave place to good pulmonary resonance, but this was not invariably so, for in two cases the note remained dull. When the patient was placed on the sound side the dullness was never intensified; on the contrary, it usually became less marked, and in one case the resonance became normal. In six cases of unilateral basic lobar pneumonia, Grocco's triangle was twice found. The dull area seemed as distinct and as well defined as it had been in any of the cases of effusion. The triangle was also found in a case of tuberculous consolidation with thickened pleura at one base. The triangle disappeared when the patient was placed on the affected side. From this series of cases, if their observations had been correct, it would appear to be established that the absence of Grocco's triangle had no value in ruling out the presence of fluid on the opposite side. The presence of the sign might be strong presumptive evidence of fluid on the other side, but that was all. Ewart himself noted a case of right lumbar abscess which produced the sign rather low down, and led him to make the wrong diagnosis of emypema. In one of their cases of pneumonia the very marked presence of the sign made them think of fluid. Whether the sign was also present in free pleural effusions he had not been able to determine; but as fluid seldom collected in a purely unconfined manner it did not seem likely that the disappearance of the dullness when lying on the side of the fluid was necessarily due to the shifting of fluid but might be due to the compensatory emphysema of position, or from intensified resonance caused by the presence of gas in the stomach or colon. The explanation of the absence of the sign in a large percentage of pleural effusion probably lay in the manner in which the fluid collected. If adhesions held the lung against the vertebral column, Grocco's triangle was not likely to be found. Its absence in unilateral basic pneumonia might be due to incompleteness of the consolidation or to the absence of a marked fibrinous exudate in the pleural cavity. The presence of the sign in pneumonia and tuberculous consolidation would seem much against the theory of displaced heart and pulmonary condensation as its cause. The study of this sign had been of great interest to him. He thought that it had been overlooked by most of them because in an ordinary examination they usually percussed at least two or three inches from the spinal column.

Dr. Lewis A. Conner said that Baduel and Siciliano had shown that when the pleural cavaties of cadavers were injected with gelatin to simulate large effusions, and the abdomens were injected to keep the diaphragm in place, by freezing the bodies and making cross sections of the chest, it would be found that there was a considerable displacement of the posterior mediastinum towards the normal side. In his own searches for this sign he had been disappointed in a majority of the cases. He referred to a case seen at the New York Hospital, a very large hydrothorax of the right side, which seemed to fulfil every requirement for the sign; yet not a trace of dullness on the normal side could be elicited.

Dr. J. E. Traub referred to a case he saw fourteen years ago. The patient was a man, 39 years old, and was seen in the second or third day of a pneumonia, the lower two-thirds of the right lung being invaded. He found an area of dullness—not only dullness, but actual flatness. He concluded that it was the result of a marked congestion of the pleura, possibly effusion. A needle was introduced, which withdrew serum filled with blood, three and a half to four and a half ounces being withdrawn. Dr. Robinson, who saw the case with him, remarked that on the left side there was an area of slight dullness close to the spinal column. This case he thought was apropos of the cases under discussion.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, Held in Louisville, Ky., December 12, 13, and 14, 1905.

(*Continued from page 38.*)

Surgical Treatment of Cancer of the Head and Neck, with a Summary of a Hundred and Twenty-eight Operations.—Dr. George W. Crile of Cleveland, Ohio, in a paper on this subject, presented general conclusions to the effect that since the head and neck presented an exposed field, cancer here, unlike that of the stomach, the intestines, or even the breast, might be recognized at its very beginning; that every case was at some time curable by complete excision; that the field of regional metastasis was exceptionally accessible; that cancer rarely penetrated beyond the extraordinary lymphatic collar of the neck; that the growth tended to remain here localized, and that by freely utilizing all the modern resources of surgery, and by applying the same comprehensive block dissection, as in the radical operation for breast cancer, the final outcome in the surgical treatment of cancer of the head and neck should not only be good, but even better than that of almost any other portion of the body.

Wandering or Aberrant Retroperitoneal Fibroid Tumors of Uterine Origin.—Dr. I. S. Stone of Washington, D. C., stated that these tumors must reach the space behind the peritoneum by way of the broad ligament. This route was the only one open and was necessarily followed by every fibroid which escaped into any part of the retroperitoneal space, however remote. After a fibroid became well separated from the uterus, it usually remained in the broad ligament indefinitely, and would always do so unless other tumors developed in the uterus and were forced to follow

directly in the same channel as the one preceding. It would be observed that single tumors were generally found in the broad ligament and the development of others must occur before we could have the variety we were studying. Many subperitoneal tumors were seen, and few indeed had been noticed where the tumor had lost all connection with the uterus. Such growths could not become parasitic, and receive their nutrition from some other source, as did the intraperitoneal wandering or parasitic tumors. He had no experience with a single wandering tumor behind the peritoneum which had entirely lost its uterine connections, and believed such development an impossibility for the reason mentioned above that a *vis a tergo* must exist. The movement of these tumors was therefore directly opposite to that of the intraperitoneal variety, for the latter must have either movable organs to assist in their progress, or else traction, a result of adhesive contact, must aid in the lifting or elevation of them upward in the abdominal cavity. Dr. Stone reported two cases illustrating the variety he described in his paper. Both of these had grown to very large proportions. In the first, the largest tumor was very high in the abdomen, and was entirely separate from all former uterine connections, even in its blood supply. The presence of a large wedge-shaped middle portion was sufficient proof of the mode of development. It had forced other growths both upwards and downwards, acting as a wedge between the two. In the second case the central portion of the specimen was made up of many small tumors which had appeared to force the larger growths in opposite directions, as in the first case. The largest growth was highest, and was completely separated from the uterus and the tumors below, except by a small amount of connective tissue and by its anterior peritoneal cover. The pelvic tumors in both of these cases were firmly impacted, and in the second case it was impossible to release the specimen without injury to deep and unseen vessels which resulted in fatal hemorrhage. The first patient made a fairly satisfactory recovery, and was able to attend to her duties as housekeeper.

Goiter, with a Report of 182 Operations Upon the Thyroid.—Dr. Charles H. Mayo of Rochester, Minn., said that surgery of the thyroid was increasing. Operations were as satisfactory as any made, giving relief with brief disability. In fifty years the mortality had fallen from 40 per cent. to less than 3 per cent., Kocher's being 2 per cent. Accessory glands, like branchial cysts, were more often found in the lines of hypoblastic inversion. The lymphatics served as ducts. Total extirpation was followed by cachexia in from 50 to 70 per cent. of cases. Graves's disease was probably due to an over- or perverted secretion, the gland showing a general or local condition of cell activity. The great majority of enlargements in young people responded to medication. Part of the benefit obtained in the removal of the sympathetic was from cutting the lymph channels draining the thyroid. During the past seventeen years the Mayos had operated upon 182 thyroids, with 9 deaths. Of these 57 were cases of well-marked Graves's disease, with seven deaths in all, and but one in the last twenty-three. Of these patients 50 per cent. made an early recovery; 25 per cent. did so after several months. The remainder were improved, but had occasional relapses of a temporary nature. Among the remaining 125 operations representing cysts, colloids, parenchymatous tumors, and five cancers, there were but 2 deaths, one from pneumonia, the other from tracheal collapse on the third day following extirpation of a carcinomatous goiter. Cocaine was used in 13 cases, but ether anesthesia preceded by morphine and atropine was the rule. The head was maintained in the high position. The incision was usually transverse. Parenchymatous enlargements and some colloids were extirpated; cysts and encapsulated growths were enucleated. Saline solution was freely given after operation.

The Diagnosis of Renal Calculus.—Dr. Guy Leroy Hunner of Baltimore took up the subject from the general relationships, first considering the various other maladies of the kidney from which nephrolithiasis must be differentiated, and then discussed the diseases of other organs which might mislead the diagnostician. The Röntgen ray and the wax-tipped bougie were considered invaluable aids in the diagnosis of renal calculus, but they both failed at times, and the importance of the urine examination in all suspected kidney cases was emphasized. Several cases were reported to illustrate the difficulties of diagnosis.

Requirements and Qualifications for a Successful Career in Surgery.—The president, Dr. Lewis C. Bosher of Richmond, selected this subject for his address, and said, among other things, that to the recent graduate in medicine no department of his chosen profession appealed with the same force as did surgery. While a student he had been impressed by the brilliancy of the results secured by his professors before his very eyes; at the meetings of the Alumni the clinics in surgery were crowded, while those in other branches were usually either slimly attended or else attended as a compliment to the individual holding them rather than from actual interest in the subject. In most medical colleges the prominence of the professors of surgery in all faculty affairs was well known; while, considering the more material side of the question, he had little trouble in ascertaining that it was no unusual thing for a surgeon to secure for a single operation, occupying but an hour or two, or even less, a fee greater than the entire collections of the general practitioner for a week's steady work, with broken rest and with cares and responsibilities innumerable. On leaving college, if he entered into hospital service, these facts were impressed on him with even greater force, and, later on, having himself entered the ranks of struggling practitioners, the same lessons were borne in upon him with increasing emphasis. Little wonder was it, then, that so many young medical men, bearing all these things in mind, decided that they, too, would enter this alluring field, where they believed they would effect such marvelous results in brilliant cures, in abundant pecuniary reward, in the homage of their fellowmen, and, if moved by even higher motives, in the actual good they might do to suffering humanity. Dr. Bosher called attention to the importance of an academic education. Many a man had attained success in surgery without this advantage, but we were dealing with the rule, not the exception. This academic education should be truly liberal, both in quantity and quality, and should include as many as possible of studies of a scientific nature, especially biology, physics, and chemistry. Of these three branches physics would prove of the greatest use to the surgeon, while biology and chemistry were branches of more actual value to the general practitioner. It was incumbent upon teachers and practitioners of surgery to make it plain to the public that there was a material difference between the trained surgeon and the novice. This education would enable the public to discriminate in a wholesome manner and would ultimately have the effect of rendering it apparent to the candidate for surgical practice that he must properly equip himself before he could stand before the world as a representative of the great surgical art.

Traumatism of the Ureter and Pelvis of the Kidney.—Dr. Rufus B. Hall of Cincinnati, Ohio, read a paper on this subject, in which he reported two cases, and said that the ultimate results were so satisfactory that he hoped they might be of sufficient interest to warrant their recital in detail. The exact location of the injury was not determined in either case. The first patient was a girl, nine years of age; the second, a lad, seventeen years of age. In reviewing the history of the first case, he was inclined to believe that there was a free rent either in the pelvis of the kidney or in the ureter. In the second there was a narrow opening either in the ureter or the pelvis of the kidney, from which urine leaked very slowly at first. In this case rupture had taken place evidently on September 10. It was more than ten days later before urine was extravasated to

make a palpable tumor so that it could be outlined. On November 1 the tumor appeared to be not larger than the boy's head. Both patients were relieved by operation, with drainage.

Aneurysm Treated by Suture Inside the Sac.—Dr. F. W. Parham of New Orleans, La., read a paper on this subject in which he reported two cases treated after the method of Matas. One was an idiopathic aneurysm of the popliteal artery; the other, an aneurysm of the second and third portions of the left subclavian. The popliteal aneurysm was treated by suture, inside the sac, of proximal and distal openings separately, and continuous suture of the groove of the artery intervening. In the subclavian case only the proximal opening was sutured, the distal bleeding being controlled by ligatures. Both patients recovered. The advantages of this procedure were: (1) The practicability of laying open and inspecting the interior of the sac. (2) The possibility of applying a constrictor, clamp, or temporary ligature to the proximal side of the tumor. In the second case reported, the suture was employed because the proximal ligature failed to stop the bleeding completely. The operation of suture within the sac was to be preferred to ligature, because, first, every possible bit of artery was saved except that actually forming the sac of the aneurysm. Second, suture accomplished simple approximation of the intima, and did not cut through as might happen with ligature of an atheromatous artery. Third, all collateral bleeding in the sac was stopped by direct suture of the vessel mouths within the sac, and packing of the sac became unnecessary. Fourth, hence there was no disruption of the outside vascular (collateral) connections of the sac wall, already much relieved by the emptying of the sac. The reconstruction of the artery was to be attempted only in certain cases, as in aortic aneurysm, where suture of the proximal opening would, like ligature, probably be fatal, and in other aneurysms where from swelling and lymphangitis, as in Morris' case, the danger of gangrene was too great to risk any interference with the nutrient stream. In such case reconstruction of the artery might be preferred for two reasons: (1) Because even a temporary continuance of the main stream would be a great advantage until the subsidence of edema consequent upon the evacuation of the sac should have somewhat relieved the stress upon the collateral vessels; and (2) because, as remarked by Matas, and shown in Dana's case, it was feasible at a secondary operation to open the sac again and close the arterial opening. In abdominal aneurysms the method of Matas offered some hope of cure.

Varicosity of the Syphenous Veins with Resulting Varicose Ulcer.—Dr. Robert Carothers of Cincinnati, O., mentioned the operations most commonly employed for the relief of this condition, and among them reference was made to the Schede operation and the Trendelenburg, but he said complete excision of the internal saphenous vein was undoubtedly the most satisfactory operation to be employed, but until the ingenious invention by Charles H. Mayo of two instruments which subcutaneously strip the vein, it was an operation requiring a long incision, tedious dissection, and considerable time for its performance. This operation, as advised by Dr. Mayo, was, that after making a small incision in the upper third of the thigh over the saphenous vein, the vein was located, tied in two places, cut between the ligatures, and the distal end threaded into the enucleator, which was pushed under the skin along the course of the vein for about six to eight inches, where another small opening was made on the instrument and the vein taken out; then the instrument was drawn out from the first opening, the vein was rethreaded into the instrument, which was again pushed under the skin for another six or eight inches, another small incision onto the instrument allowed the vein to be drawn out, which was again ligated and removed. The lateral branches were torn off, and, as a rule, closed themselves. This operation was very quickly and easily performed, but was not without danger from hemorrhage or sepsis. He had twice done this operation and the immediate results were satisfactory. His cases were too recent to say what would be the ultimate result. They were old cases with large, troublesome ulcers treated by skin grafting. The patients were able to leave the hospital in less than three weeks, wearing an elastic porous bandage for support, and were now, at the end of about eight weeks, both at work as housewives. In one case in which there was a troublesome eczema, after an effort for one week to relieve the same, he again followed the advice of Dr. Mayo, sealing the eczematous area with compound tincture of benzoin, until the skin wound had healed.

The Dangers in Scopolamine-Morphine Anesthesia.—Dr. Horace J. Whitacre of Cincinnati, O., read a paper with this title, in which he based his conclusions upon observations made in forty cases of anesthesia induced by this method, upon animal experimentation, and upon a review of all deaths that have been reported in the literature up to the present time: "(1) Scopolamine-morphine narcosis is not devoid of danger. (2) The use of scopalamine-morphine alone for surgical narcosis is not justifiable, and in my experience is not practicable. (3) A single dose two hours before operation lessens the discomforts attendant upon the operative procedure to a high degree, and may obtain a definite place in surgical practice. (4) Four deaths have occurred in a series of twenty-four hundred collected cases which have been so definitely related to the use of this method of narcosis that they are probably scopolamine deaths; this, however, in the absence of autopsy demonstration. (5) These deaths have been reported as occurring with a type picture of alkaloid poisoning and heart failure has been given as the direct cause of death. (6) A fatty degeneration of the liver and kidney has been produced by repeated doses of scopolamine alone, and of the scopolamine-morphine combination, in animals. (7) This method of producing or assisting narcosis cannot yet be recommended for use in general practice, in spite of the great advantage it seems to offer."

Scopolamine-Morphine-Ethyl Chloride-Ether Anesthesia.—Dr. H. A. Royster of Raleigh, N. C., said that of all the combinations suggested for aiding and abetting these agents, that which formed the subject of his paper commended itself to him, because he believed, first, that ether was our safest general anesthetic; second, that ethyl chloride secured the pleasantest primary narcosis; third, that the preliminary use of scopolamine with morphine increased the patient's mental resisting power and lessened the quantity of ether. In his opinion there could be no question of the superiority of ethyl chloride over nitrous oxide gas as a preliminary to ether anesthesia. Its action was more certain and constant and equally agreeable, and he could not help feeling that it was safer. His experience in regard to the combination of morphine and scopolamine was confined solely to the use of these drugs prior to the administration of ether. Of those who had investigated scopolamine, some stated that it was isomeric with hyoscine, others that the effect of the combination was due largely to morphine, still others that the drug was dangerous and uncertain in its action. Its most marked effects were in quieting the nerves and fears, the promotion of an easy courage in beginning the anesthetic, and a prolongation of the restful sleep afterwards. Clinical tests had led him to conclude that scopolamine was not identical with hyoscine, that it did something more than morphine alone, and that it was safe in proper doses. He sounded a note of warning in regard to the use of scopolamine, however, inasmuch as several deaths had followed its employment.

Overlapping the Aponeuroses in the Closure of Wounds of the Abdominal Wall.—Dr. Charles P. Noble of Philadelphia recommended a method of overlapping the aponeuroses which he had used with the utmost satisfaction for nine years, in the closure of all wounds of the abdominal wall, including the Alexander operation, inguinal and umbilical herniæ, diastasis of the recti muscles, appendectomy, and nephrorrhaphy. In but a single case did he know of

a post-operative hernia when the abdominal wound had been closed by this method. When drainage was employed through the abdominal wound, the method was not applicable. The technique of the operation was illustrated by several drawings which demonstrated the method clearly. He closed his article by describing the methods of overlapping the fasciæ employed by Lucas-Championnière and E. Wyllys Andrews in the operation for inguinal hernia.

The Early Diagnosis and Radical Cure of Careinoma of the Prostate, with a Report of Forty Cases.—Dr. Hugh H. Young of Baltimore presented these conclusions, which were drawn from this study of forty cases: Carcinoma of the prostate was more frequent than was usually supposed —occurring in about 10 per cent. of the cases of prostatic enlargement, as shown also by Albarran. It might begin as an isolated nodule in an otherwise benign hypertrophy, or a prostatic enlargement which had for many years furnished the symptoms and signs of benign hypertrophy might suddenly become malignant. Marked induration, if only an intralobular nodule, in one or both lobes of the prostate in men past fifty years of age, should be viewed with suspicion, especially if the cystoscope showed little intravesicular prostatic outgrowth, and pain and tenderness were present. The posterior surface of the prostate should be exposed as for an ordinary prostatectomy, and if the operator was unable to make a positive diagnosis of malignancy, longitudinal incisions should be made on each side of the urethra, as in prostatectomy, and a piece of tissue excised for frozen sections, which could be prepared in about six minutes and examined by the operator at once. If the disease was malignant the incisions might be cauterized and closed, and the radical operation performed. Cancer of the prostate remained for a long time within the confines of the lobes, the urethra, bladder, and especially the posterior capsule of the prostate remaining inviolate for a considerable period. Extraprostatic invasion nearly always occurred, first, along the ejaculatory ducts into the space immediately above the prostate between the seminal vesicles and the bladder, and beneath the fascia of Denonvilliers. Thence the disease gradually invaded the inferior surface of the trigone and the lymphatics leading toward the lateral walls of the pelvis, but involvement of the pelvic glands occurred late, and often the disease attacked by metastasis the osseous system without first invading the glands. Cure could be expected only by radical measures, and the routine removal of the seminal vesicles, vasa deferentia, and most of the vesical trigone with the entire prostate, as carried out in four cases by the author and fully described by the illustrations, was shown to be necessary by the forty cases, including eight autopsies and ten operations. The four cases in which the radical operation was done demonstrated its simplicity, effectiveness, and the remarkably satisfactory functional results furnished.

(*To be continued.*)

Chicago Medical Society.

At a meeting held November 29, 1905, Dr. Ramon Guiteras of New York read a paper, by invitation, entitled "Etiology, Diagnosis, and Treatment of Perinephritic Abscess." He emphasized the following conclusions: (1) Many more cases of perinephritic abscess were due to suppurative renal disease than was generally supposed. (2) Traumatism, exposure, and similar influences to which perinephritic abscess was attributed were not so important as many observers had claimed; they were vaguely given as causes when they were simply coincidences, or the active cause of rupture of already existing abscesses of the kidney or neighboring structures. (3) It was important, though difficult, to determine the source and course of the pus; therefore, during the operation the surgeon should try to determine whether the kidney was the source by all the latest methods of modern diagnosis, and if not, what tissue was the source. It was important to discover the route taken by the pus, as it indicated where counter-incisions should be made; and the further treatment of the complications of the case. (4) The elements of success in operations for perinephritic abscess might be summed up as: (a) Early operation, incision, and evacuation before the pus had time to burrow extensively; (b) thorough exploration without timidity, opening the kidney and exploring the ureter, if need be; (c) thorough drainage down the deepest part of the sac by means of large rubber drains of gauze, the drain being kept in place until a well-formed sinus existed down the deepest part of the cavity; (d) secondary nephrotomy or nephrectomy, if indicated at the time of the operation, later. (5) Nephrectomies were exceedingly dangerous in these cases, and it was better to perform nephrotomy or to content oneself with opening the abscess cavity even though a sinus resulted. Dr. G. W. Holden of Denver discussed the "Sanatorium Treatment of Tuberculosis in Colorado," with especial reference to the Agnes Memorial Sanatorium, with which he was connected. His report covered but one year, the first of the institution's existence. He said forced feeding was not essential nor desirable to obtain results; he preferred to depend upon an abundance of good food served in the three regular meals in conjunction with the careful regulation of the diet of the patient. Constant attention was paid to assimilation and elimination. Dr. Arnold C. Klebs analyzed "Behring's New Tuberculosis Remedy." Only a few essential conclusions could be drawn from the ambiguous wording of Behring's address at the recent International Tuberculosis Congress. He said that Behring had, by certain chemical methods, isolated from the body of the tubercle bacillus a substance which he called TC. This substance constituted the life principle of the tubercle bacillus, and had, when introduced into the cell body, protective and curative properties, distinctly superior to those exerted by his bovovaccine (living tubercle bacilli). Dr. Klebs saw in Behring's adoption of the theory of the presence of a *matière vaccinante* in the body of the bacillus a decided change in Behring's opinion and a vindication of Edwin Klebs' persistent adherence to and proof of this hypothesis. He believed that Behring's new method followed in general the same lines as those established by his method of cattle immunization, with the exception that there the TC representing the life principle of the bacillus was introduced instead of, as here, the living attenuated bacillus itself. Behring's hypothesis of a cellular immunity, different from the antitoxic immunity, was then analyzed in the light of recent and older investigations on the effects of infective and toxic agents on the normal cell life. He did not think that in this direction Behring had discovered anything essentially new, but had adopted the theories of Metchnikoff and other investigators. Dr. J. W. Pettit of Ottawa, Ill., discussed the "Economic Aspect of the Modern Treatment of Tuberculosis," saying that it was primarily based upon life in the open air. To meet this demand the radical departure from the conventional plan of hospital construction was necessary. He strongly advocated the use of tents and referred to the success that had attended efforts directed toward the treatment of this disease at the Ottawa Tent Colony. Since the tent was practicable in a cold climate, it should be used more extensively. It fulfilled the conditions most perfectly from a scientific standpoint. A tent was an ideal method of housing tuberculous patients in a mild climate. The cost of food was the most expensive item in the treatment of tuberculosis, and any attempt to cheapen this feature by cutting down the quantity or cheapening the quality would tend to nullify the treatment just to the extent to which this was done. The psychical element must be also considered. This made it necessary to provide certain forms of amusement and recreation, which added somewhat to the expense.

For fifteen years no suicide of a Jew was recorded in the seven great districts that comprise the most populous part of central London. But of late there have been several cases.

Pathological Society of Philadelphia.

At a stated meeting held December 28 Dr. A. G. Ellis presented a communication entitled "Congenital Malformation of the Heart" and he exhibited a series of illustrative specimens, including perforate auricular septum, perforate ventricular septum, transposition of aorta and pulmonary, persistence of ductus arteriosus, stenosis of the pulmonary artery. Dr. Canby Robinson exhibited specimens of "Aneurysm of the Heart." The one represented a saccular dilatation of the wall of the left ventricle resulting from obstruction of the coronary artery, while the other took the form of a dissecting aneurysm. Dr. J. C. da Costa, Jr., read a paper entitled "Iodophilia: A Study of One Hundred Cases." Observations were made on a series of patients suffering from a variety of acute febrile disturbances, and in general the morbid condition was found in association with states dependent upon some form of toxemia or other and not in any way related to leucocytosis. Dr. H. M. Snyder read a paper entitled "Eosinophilia in Amebic Dysentery," reporting a case of dysentery in which amebæ were found in the intestinal discharges, together with eosinophile leucocytes, which also were found in the blood in considerable number. The lesions in the rectum were disclosed with the aid of the proctoscope. Dr. D. Riesman exhibited specimens of contracted kidneys, with hypertrophy of the heart and constricted aorta and edema of the lungs together with subpleural extravasations of blood. The patient had died suddenly from pulmonary edema of rapid development. Drs. E. R. Butt and C. J. Hunt reported a "Case of Puerperal Sepsis with Tricuspid Endocarditis." The patient was a young woman who had suffered an abortion with infection and secondary invasion of the endocardium of the right side of the heart.

Philadelphia County Medical Society.

At a stated meeting held December 13 a symposium was held on "Disorders of the Circulatory Apparatus." Dr. Alfred Stengel read a paper entitled "Arteriosclerosis as a General Disease." He divided the affection into three stages, a primary stage difficult of recognition, with vague and indefinite symptoms referable to the circulatory apparatus; an intermediate stage, with obvious physical signs and clearly defined symptoms; and a terminal stage, attended with infections and a fatal issue. He recognized also thoracic, abdominal, cerebrospinal, and other types of the disorder. The greatest care is required not to mistake the general disorder for that of a viscus or tissue. Dr. Wm. H. Welch of Baltimore presented a communication entitled "The Relations Between Cardiac and Renal Disease and Arteriosclerosis." He pointed out the connection between these three groups of affections, and he dwelt upon their frequent origin from common causes. On the other hand any one may have an individual origin and perhaps lead to the development of the others. Dr. Judson Daland read a paper entitled "Myocarditis Independent of Arteriosclerosis." He dealt with the various forms of inflammation and degeneration of the myocardium arising from a multiplicity of causes, but not rarely associated also with changes in the walls of the blood-vessels. Dr. H. A. Hare read a paper entitled "Remarks on Cardiovascular Disease, with Reference to Treatment." The discussion was participated in by Drs. J. C. Wilson, G. E. de Schweinitz, W. B. Stanton, J. H. Musser, S. Solis-Cohen, and A. O. J. Kelly.

The Supporters of Quacks and Medical Heretics.—Our "educated" or "literary" classes are as much the natural prey of every charlatan as minnows are the natural prey of a pike. We have seen the wife of an English ambassador energetically supporting the pretensions of one of the worst of the tribe of cancer quacks. We have seen an English prime minister declaring the efficacy of vaccination to be an open question.—*The Lancet.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending December 30, 1905.

	Cases	Deaths
Measles	798	12
Diphtheria and Croup	388	38
Scarlet Fever	183	6
Smallpox	..	..
Chickenpox	117	.....
Tuberculosis	365	163
Typhoid Fever	45	7
Cerebrospinal Meningitis	36	16
Typhus Fever	.....	.....
Yellow Fever	.....	.....
Cholera	.....	.. ..
Totals	1,932	242

Mosquito Bites.—Schill, after trying many different agents, found that bicarbonate of sodium and thymol were the most effective remedies to relieve the irritation of mosquito bites. The first is either applied directly to the bite, moistened with enough water to form a paste, or is painted on in a saturated solution. The thymol is applied to the face, neck, and hands in 50 per cent. alcoholic solution, and is very effective in keeping the insects away.—*Schweizer Wochenschrift für Chemie und Pharmacie.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ended January 6, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, San Francisco	Dec 16–23	3	..
Florida, Jacksonville	Dec. 23–30	5	..
Kentucky, Covington	Dec. 23–30	1	..
Louisiana, New Orleans	Dec. 23–30	6	..
Shreveport	Dec. 23–30	1	..
Maryland, Baltimore	Dec. 23–30	11	..
Missouri, St. Louis	Dec. 23–30	1	..
New York, Niagara Falls	Dec. 23–30	1	..
Ohio, Dayton	Dec. 23–30	1	..
Pennsylvania, Lancaster	Dec. 2–9	1	..
Wisconsin, Milwaukee	Dec. 2–9	1	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Nov. 11–18	2	..
Chile, Antofagasta	Nov. 12–26	42	9
Coquimbo	Nov. 9–23	15	4
Iquique	Nov. 26–Dec. 2	10	6
Valparaiso	Nov. 15–22	100	25
China, Shanghai	Nov. 30	Present.	
France, Paris	Dec. 2–16	48	5
Gibraltar	Dec. 10–17	1	..
Great Britain and Ireland,			
Drohega	Dec. 2–9	1	..
Hull	Dec. 2–9	3	..
India, Bombay	Nov. 28–Dec. 5	..	1
Calcutta	Nov. 18–25	..	4
Karachi	Nov. 26–Dec. 3	1	..
Madras	Nov. 25–Dec. 1	..	7
Italy, General	Nov. 30–Dec. 14	36	..
Catania	Dec. 7–16	..	1
Mexico, Tuxpam	Dec. 19–26	..	2
Russia, Odessa	Dec. 2–9	12	7
St. Petersburg	Nov. 18–Dec. 2	7	..
Spain, Cadiz	Nov. 1–30		1
Santander	Dec. 10–17	4	..
Seville	Nov. 1–30	..	1

YELLOW FEVER.

Cuba, Habana	Dec. 27–29	2	1
Mexico, Merida	Dec. 17–23	1	1
Panama, Colon	Dec. 7–14	1	..

CHOLERA—INSULAR.

Philippine Islands, Manila	Nov. 11–18	8	10

CHOLERA—FOREIGN.

India, Calcutta	Nov. 18–25	..	86
Madras	Nov. 25–Dec. 1	..	6
Russia, Government of Lomza	Nov. 23–Dec. 6	12	3
Government of Siedlec	Nov. 20–26	7	2

PLAGUE.

Africa, Cape Colony, Port Elizabeth	Nov. 11–18	1	..
China, Hongkong	Nov. 18–25	1	1
Niuschwang	Nov. 30	Present.	
Japan, Formosa	Nov. 1–30	2	2
India, General	Oct. 28–Nov. 4	4356	3090
Bombay	Nov. 28–Dec. 5	..	7
Calcutta	Nov. 18–25	..	22
Peru, Antofagasta	Nov. 12–26	9	5

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 3.
Whole No. 1837.

NEW YORK, JANUARY 20, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

IMMUNIZATION IN TUBERCULOSIS.

WITH ESPECIAL REFERENCE TO THE METHOD OF PROFESSOR VON BEHRING.

BY KARL VON RUCK, M.D.,

ASHEVILLE, N. C.

WHEN Prof. Koch, in 1890, introduced tuberculin, he did not attribute to it an immunizing action; he considered its effect to be due to a specific toxin which he believed caused necrosis and eventual expulsion of tuberculous material. Neither did subsequent experiment with this preparation show any considerable degree of immunizing power, although the temporary protection against second infection in Koch's preliminary animal experiments suggested such an effect.

Prof. Rindfleisch,[1] upon grounds of histological studies, was one of the first to question the necrosing action of tuberculin and concluded that its action was an immunizing one. Petruschky[2] claimed an immunizing action from clinical observations; Hueppe[3] made a similar claim of specific stimulation for the remedy, by which the tissue cells were enabled to destroy the tubercle bacillus; Pfuhl[4] and Bujwid[5] were able only to prolong the life of the experiment animals for longer periods after infection, as compared with the controls. Doenitz[6] and Sattler[7] obtained a protective influence in experimental eye tuberculosis in rabbits; Kitasato[8] actually succeeded in curing tuberculous guinea pigs with tuberculin and found that they were protected against new infection.

The general consensus of opinion, however, was, and continued to be, that the action of tuberculin upon tuberculous tissue is in the nature of an irritant toxin which causes the peculiar reaction phenomena which were considered specific by most authors and which, when within safe limits, tend to healing processes, which were demonstrated by Kromeyer,[9] Doutrelepont,[10] Ziegler,[11] Cheyne[12] and many others.

Efforts at immunization had, however, been made prior to the introduction of tuberculin. In 1883, Babes, Cornil and Leloir used for this purpose attenuated tubercle bacilli for vaccination against lupus; and Cornil and Babes tried to protect rabbits by injection of tuberculous material. Charrin in 1885 tried a method of successive inoculation in guinea pigs, hoping that the virus from the same animals upon second or repeated inoculation would arrest or impede the tuberculous process. In 1887 Daremberg used spinal cord substance from tuberculous animals for protective inoculation, but all these methods proved of no value.

After the introduction of tuberculin by Prof. Koch, various efforts followed to obtain the specific toxin in a purer form, or in larger quantities, than it was believed to be present in his preparation. This led to efforts of its purification, especially by Prof. Koch himself, by Hunter, Klebs, Trudeau and others, and likewise to a study of the action of dead tubercle bacilli, and to the extraction of their bodies with water, glycerin, alkalies, acids, etc., in the hope that these direct extractives would prove of more value than the crude tuberculin with its admixture of pepton, meat extracts, and glycerin from the liquid bouillon cultures.

Hueppe and Scholl[13] were probably the first to extract tubercle bacilli with glycerin, but the extractive so obtained proved of no advantage in their hands. Jeffries[14] used alcohol, ether, benzol, chloroform and later glycerin extracts. Zülzer[15] extracted tubercle bacilli with hot hydrochloric acid solution, obtaining what was supposed to be an alkaloidal principle in the form of a white crystaline salt. Wey[16] extracted them with caustic soda and isolated a protein substance which he called toxomucin. Hammerschlag[17] in his studies during 1888 and up to October, 1890, had already found that cultures of tubercle bacilli contain a toxic albuminous substance, and that from the bodies of tubercle bacilli could be extracted a large amount of fatty substance soluble in alcohol and ether, which exceeded greatly the amount obtainable from the extraction of other bacteria; one of his analyses showed 28.2 per cent.; later de Schweinitz and Dorset[18] obtained as high as 37 per cent., and larger percentages of fats have been claimed since.

In the meanwhile the study of the action of dead tubercle bacilli by Koch,[19] Prudden and Hodenpyl,[20] Strauss and Gamaleia,[21] Abel,[22] Vissmann,[23] Mafucci,[24] and others had brought additional evidence that the bodies of tubercle bacilli contained a specific toxin, but as no one was able to obtain it in an available form, dead tubercle bacilli themselves were used, with the expectation that the living organism would itself extract the toxin, and that thus artificial immunity would occur.

In some instances a certain degree of immunity appears to have been attained, but on the whole the results were unsatisfactory, as were also the experimental trials with dead tubercle bacilli upon guinea pigs in my own laboratory by Prof. Klebs and myself. Apart from the failure of completely protecting the animals against infection, the extremely slow absorption, and the frequently observed necrotic changes and abscess formation at the point of injection of the dead tubercle bacilli appeared to me to exclude their clinical application in man, in which we had further to take into consideration the formation of histological tubercle in the lungs and other organs which had been found to occur in animals, especially when the bacilli were purposely or accidentally introduced into the blood or into the trachea.

By the use of living avian tubercle bacilli, known not to be infectious to man, Trudeau[25] in 1892

succeeded in producing artificial immunity in rabbits to such a degree that subsequent inoculation with human tubercle bacilli into the anterior chamber of the eye did not produce a typical tuberculosis, whereas in the control animals such inoculation led to the destruction of the eye.

De Schweinitz[26] succeeded in the production of unquestionable immunity in guinea pigs by injection of attenuated living tubercle bacilli in 1894, thereby preceding von Behring by many years in the principle of the latter's discovery of bovovaccine, or "Jennerization" for cattle.

Enough has been stated to indicate the status of immunization against tuberculosis at the time when Prof. Koch[27] in April, 1897, introduced tuberculin R. which he had shown to possess a distinct immunizing power that was afterward confirmed by animal experiments of others. Up to this time no one had, to my knowledge, made efforts to liberate the specific toxin contained in tubercle bacilli, except by the various extractions mentioned; Prof. Koch was the first to attempt this by reducing the bacilli into an impalpable powder in an agate mortar, presuming that in this manner it would be present in solution in his tuberculin R. This subsequently was shown to be otherwise, since when tuberculin R. was filtered through porcelain, the filtrate proved inactive and the amorphous powder of tubercle bacilli remained upon the filter. The bacilli were not even as finely broken up as was believed by Prof. Koch, for isolated, perfect specimens and even clumps of adherent bacilli could be shown present on microscopical examination of his preparation. Nevertheless the tubercle bacilli were sufficiently divided by grinding, and the adherent clumps were sufficiently eliminated by centrifuging that no such troubles occurred at the point of injection, as had been witnessed from injection of dead tubercle bacilli not so prepared, and while in its clinical application some authors obtained better results from tuberculin R. others found the preparation less reliable and less certain in its action, indicating at times a cumulative effect by severe and unexpected reactions and complications arising during its use.

Many complained of the inconstancy of its action soon after its introduction, as for instance Woerner,[28] Baudach,[29] De la Camp,[30] Doutrelepont,[31] Herzfeld,[32] Rossmann,[33] Spengler,[34] Van Horn,[35] Jez,[36] Raw and Abrams,[37] and Reinhold.[38]

Another danger from its use was soon shown to exist by Treudeau[39] who found living, virulent tubercle bacilli in the preparation, after I had myself[40] directed the attention of the profession to the probability of such an occurrence.

Trudeau was apparently confirmed by Schroeder[41], and when the new tuberculin emulsion was examined by Thellung[42] and Niessen[43] they again found occasion to enlarge upon this dangerous feature of the remedy, which was impossible to avoid by the method of its preparation from living, virulent bacilli.

I have heretofore stated that Prof. Koch was the first to seek the liberation of the immunizing substance from tubercle bacilli, which he did by powdering them and thereby he at least facilitated their extraction within the tissues after their injection.

The preliminary removal from tubercle bacilli of substances which hinder the liberation of the immunizing toxin, with the specific purpose of rendering the latter readily available for therapeutic use, I believe to have first been resorted to by myself.

While Prof. Koch was engaged in the production of his tuberculin R., I worked in another direction upon the theory that the large quantities of fatty substances contained in the bodies of tubercle bacilli hindered the extraction of the otherwise soluble toxin both in vitro and in the tissues. By this theory, to which I have since referred in an editorial,[44] and again in an article on fever,[45] published in the *Journal of Tuberculosis*, I could account for the but slight degree of immunity which resulted from the use of the various tuberculin preparations and of dead tubercle bacilli, as well as for the failure of natural immunity in the course of the disease.

The occurrence of natural immunity appeared to me to be further prevented by the enclosure of the bacilli in the nonvascular tubercle often caseous or surrounded by connective and fibrous tissue, or both, since under such conditions the absorption of the immunizing substances from tubercle bacilli additionally so protected, would have to be extremely slow and uncertain if it occurred at all.

Once this theory conceived, the further I considered it the more plausible did it appear, and I immediately acted upon it, first washing the tubercle bacilli upon a filter until the filtrate gave no longer a biuret reaction, and then as completely as possible extracting their fats.

Although previously washed with water until nothing more could be extracted I found that after the extraction of the fats, the tubercle bacilli yielded a considerable amount of organic substance when they were now again extracted with distilled water. With this last water extractive, animal experiments had been undertaken and some of them were still in progress when on May 6, 1897, I communicated the result of my work as far as it had progressed, to the American Climatological Association,[46] at Washington, D. C., and there demonstrated the preparation of tubercle bacilli in the various stages of extraction as well as the extractives obtained, including the final extract with distilled water in different degrees of concentration, and likewise the residue of tubercle bacilli which yielded nothing more.

I likewise claimed immunizing power for my preparation upon ground of my animal experiments, inasmuch as the control animals had all died, whereas the animals which after infection were treated with the remedy were all living and progressing favorably.

In a paper read before the Academy of Medicine in Cincinnati, on December 20, 1897,[47] I reported the final outcome of the experiments, showing a complete cure of at least one of the experiment animals, inasmuch as only fibroid nodules were found which microscopic examination proved free from caseation and from tubercle bacilli, and tissues from these nodules implanted had failed to cause infection in guinea pigs.

In these early experiments the doses employed and the duration of the treatment appeared to stand in close relation to the results.

A subsequent series of experiments upon six guinea pigs, with a view of protective inoculation prior to virulent infection, was made in 1898, but the work was not published at the time, because no final autopsies were obtained for reasons to be stated below.

These animals were treated for six weeks with much larger doses than had formerly been employed, and were infected two weeks after the preliminary treatment was completed, together with a like number of controls. The latter all died in the course of four months, and their autopsies showed the usual tuberculous lesions

in glands, liver, spleen, lungs, etc., whereas, the protected animals lived without signs of tuberculosis, and a second infection in September, 1898, again failed to cause evidence of disease. All these six animals were living and apparently in good condition in the spring of 1899, when they were accidentally killed in their kennel by a dog, and were disposed of by a servant, without the facts coming to my knowledge, the accident happening during my absence from home.

Although lacking the absolute proof of autopsies, the results in these animals were nevertheless convincing to me personally, but well aware that the results of animal experiments need to be supplemented clinically, I continued to devote myself to the therapeutic use of the remedy and to its clinical study upon patients.

My efforts in obtaining the immunizing toxin from the bodies of tubercle bacilli by previous removal of substances which hinder or prevent its liberation were, so far as I know, next followed with apparently the same object in view by Prof. von Behring in 1898. In his paper before the Congress for Hygiene and Demography at Lisbon,[48] on April 12, 1898, he described a method, consisting of washing, and the extraction of fats from tubercle bacilli, prior to the final extraction of a toxin in glycerin and water. This latter extraction was, however, accomplished in an autoclave at a temperature of 150° C., a degree of heat which, if it did not actually destroy it, must have seriously modified and injured this toxin, a fact which was admitted by von Lingelsheim,[49] who appears to have done the work under Behring's directions. I am not aware that this preparation has ever been employed in the treat ment of tuberculosis.

Since Prof. Koch introduced tuberculin R. many have continued to experiment with various new and old tuberculin products while others have looked for the best results from the use of animal sera. Among these Maragliano,[50] who has been the chief exponent of serotherapy in tuberculosis, immunized first with tuberculin and later with a watery extract from unprepared tubercle bacilli, which he obtained by heat of between 90° and 100° C. and by subsequent concentration of the filtrate.

As my purpose is more directly concerned with the question of direct immunization, I have no space for a review of the interesting literature on the treatment of human tuberculosis with sera derived from animals.

The efforts to induce immunity in animals from the use of living tubercle bacilli, as those already cited by Trudeau, the success in immunization by de Schweinitz in 1894, or later by von Behring, the experiments by Moeller and Friedmann in immunization with the pseudo-tubercle bacilli of cold-blooded animals, have all added to the interest and understanding of the subject.

New tuberculin preparations have also appeared and much was expected from Buchner's Tuberculo-plasmin,[51] which he obtained from tubercle bacilli under hydraulic pressure of 300 to 400 atmospheres. Hahn,[52] who with Bulling studied this preparation experimentally says in his article on natural immunity,[53] that they could not obtain an unquestionable immunity with this substance.

Vesely[54] made a new modification of the old tuberculin, by leaving out of the culture fluid the beef extract and adding more glycerin, and found this preparation to give him better experimental and clinical results. The modification by Denys,[55] and from which he reported excellent results, consists in the avoidance of heat in his preparation.

Landmann's tuberkulol[56] is an extract of tubercle bacilli from virulent cultures, from which the bacilli are filtered out and extracted with water, normal salt solution and dilute glycerin at 40° C.; the fluid is then decanted and the process repeated at successive higher temperatures of 50° C., 60° C., and so on until 100° C. are reached, when the various extractives are put together and concentrated in a vacuum at 37.2° C. and filtered through porcelain. By this method Landmann believes to have extracted all the specific toxins, for which he claims artificial immunity in animals, and good therapeutic results.

Béraneck[57] introduced a new tuberculin in 1903, which consists of the culture fluid plus the addition of toxins extracted from the bodies of tubercle bacilli. He showed prolongation of life for from one to five months in guinea pigs treated with this preparation; and 60 per cent. of his patients improved, though the majority were in an advanced stage of phthisis.

Terre[58] made a tuberculin from cultures of fish tubercle bacilli which he found less effective than the old tuberculin of Koch, and Sciallero[59] made an oleous extract from tubercle bacilli, with which he experimented on animals, and believed it to have some toxic and immunizing powers.

Of interest as regards the fatty extractives contained in tubercle bacilli is the work of Auclair[60] with ether and chloroform extracts. He claims that the ether extractive causes exudative inflammation in rabbits, which is followed by caseation, whereas the substances extracted with chloroform cause tissue proliferation and eventually fibrosis. Armand-Delille[61] also experimented with these extractives, claiming to have produced pachymeningitis and paraplegia in dogs.

Kressling,[62] who further experimented with tuberculin, found it to diminish the virulence of tubercle bacilli in the organism. Pearson and Gilliland obtained partial immunity in the treatment of tuberculous cows, and Jacob[63] likewise experimented upon cows by injecting tuberculin intratracheally and found evidence of curative action by autopsies. Both of these authors fell short of the results reported by de Schweinitz in 1896, who obtained an actual cure in two cows that received very large doses (one to the total amount of three liters), which were well borne and caused no injurious effect.

While I should be glad to refer to other equally interesting and important invertigations on the subject of immunity in tuberculosis which have appeared since 1897, for want of space I am obliged to omit them in order to reach the consideration of Prof. von Behring's latest communication to the International Congress for Tuberculosis recently held in Paris, and to finally state the clinical results and observations from my own preparation.

Prof. von Behring in his communication to the congress claims to have discovered a method of immunization of man which is certain, rapid and free from danger. He has found that the immunizing, curative substance of the tubercle bacilli is contained in their bodies, and this substance he calls "T. C." It is the same substance which produces immunity in cattle by the application of his bovovaccine and acts by combining with certain living cellular elements.

The T. C. is, however, not directly available from unprepared tubercle bacilli as they exist in bovovaccine and in its use in cattle the animal

organism must first free the immunizing substance by removing from the bacilli certain "accidental" and hindering substances, before it (T. C.) becomes available. This liberation of T. C. by the living organism Behring considers both tedious and dangerous, and to save the human organism this tedious and dangerous process he has devised a method of first preparing the tubercle bacilli outside of the body, by which the accidental and hindering substances are removed.

The latter substances are, according to Behring, composed of three groups, one soluble in water, another soluble in a neutral salt solution (10 per cent. solution of chloride of sodium), and a third soluble in alcohol and ether.

When the tubercle bacilli are freed from these hindering groups of substances by their successive extraction with their respective solvents, there remains a bacillary remnant which when mechanically reduced to an amorphous or impalpable powder and injected subcutaneously, induces immunity, as above set forth.

All this, Prof. von Behring has abundantly proved in his laboratory *in vitro* and by animal experimentation, and he is confident that the preparation will protect the human subject against tuberculous infection. For the present the remedy is to be withheld, for purposes of its further experimental and clinical study, except from certain savants to whom only he will entrust it.

Referring the reader now to my own work, and the preparation of tubercle bacilli for the liberation of their specific toxin as published by me in 1897, it will appear that both the theory and method of von Behring show a remarkable coincidence with my own.

In the light of the experience that I have acquired and communicated, I have no hesitation in agreeing with Prof. von Behring perfectly that the removal of the substances of which he speaks, and especially of the fatty wax-like substances, from tubercle bacilli will make the immunizing substance available to a greater degree than it could be were the powdered bacilli injected in an unprepared state.

If, as Prof. von Behring states, he has proved this *in vitro*, he has most probably also extracted his T. C. from the prepared bacilli as I did myself in 1896, and if, as I have shown, the immunizing substance (von Behring's T. C.) can be obtained in its pure form in solution there are several good clinical reasons why the injection of the bacillary residue, which contains it, should be avoided. These reasons are:

First, that although made available, the organism has still to extract the desired substance from the prepared bacilli, and there being no definite knowledge how much will be extracted, or how long it will take for a certain quantity to become absorbed, as this process may vary in quantity and time and with the individual to be immunized, there is an uncertainty in dosage and the possibility of cumulative effects.

Second, that there can be no absolute guarantee that all the hindering substances have been completely removed, which is especially difficult with regard to the fats, and may on that account lead to variability in the preparation.

Third, that even the completely extracted bacillary residue can still give rise to tubercle formation in the tissues, and although not liable to degeneration and caseation, as are infectious tubercles, such tubercles would by no means be indifferent in effect should they, perchance, form in the brain and spinal cord or their membranes, or in the tunics of the eye, parenchyma of the kidneys, etc. The formation of such tubercles at the point of injection in the subcutaneous tissue would, of course, be indifferent, but in practice we have to consider the possibility of unintentionally puncturing a vein, and of accidentally discharging the amorphous bacillary residue into the general circulation.

Comparing now the method of removal of the substances which hinder the liberation of the immunizing curative toxin (the T. C. of von Behring), with the method followed by me, it will be seen that von Behring introduces a second step, not mentioned in my publication, namely, the extraction with a solution of chloride of sodium.

If the substance extracted by this solution were not soluble in water it could not enter into my preparation, for I extract only the substances soluble in water, as a first step, and the fats thereafter.

I have, however, found that the chloride of sodium extractive is likewise soluble in water, only much less so, and when I have since resorted to the salt solution it has been to save time in the tedious preliminary washing upon a filter or precolator. When after extraction with salt the latter is removed from the solution by dialyzing through an animal membrane and the fluid is concentrated, there is no precipitation of the organic substance it contains, and the physiological action is that of tuberculin in nowise distinguishable from that of substances extracted with water alone and without the aid of a neutral salt. Furthermore, the substances extracted with water alone, and the substance extracted with salt solution appear to give the same chemical reaction, and when the water extraction is carried far enough, a salt solution extracts nothing more.

I hold, therefore, that the extraction with a salt solution is a matter of laboratory expediency only, and not essential in any way to the liberation of the immunizing substance.

I have also reason to believe that the substance removed by water (excepting the ingredients of the culture fluid) and that which is removed by a solution of chloride of sodium have the same origin in a secretion product of the tubercle bacillus. This substance has been called a mucoprotein; it forms and is deposited upon the exterior of tubercle bacilli and causes their adhesion in mass; some of it is dissolved in the culture fluid during the growth of the culture, while some of it is in a state of incomplete solution still adhering to the tubercle bacilli when they are removed from the culture; this part is, therefore, more quickly removed by the first water extraction while the rest goes into watery solution more slowly, and the presence of chloride of sodium hastens its removal.

This mucoprotein is probably the same substance which von Behring seems to have extracted on a former occasion, and which he described in his communication to the Congress on Hygiene and Demography in 1898. Landmann also appears to have extracted it with water, normal salt solution, and glycerin and called it tuberkulol; and Maragliano's watery extract of tubercle bacilli contains mainly the same substance. The extractive with water with or without the presence of a neutral salt is also a specific toxin of tubercle bacilli. From my studies of this substance in its pure form I am by no means prepared to agree with Prof. von Behring that it is an accidental one, or one necessarily hindering the action of the substance which he calls T. C. At all events I have already attained some interesting data by experimentation, and hope that by continuing my studies this toxin will also be found

to have a value in immunization or for certain indications in the actual treatment of tuberculosis.

I believe I have made it sufficiently evident in the preceding pages that if Prof. von Behring's statements before the Congress on Tuberculosis are correct, his discovery, if he has made one, consists in the liberation of the immunizing curative substance which he calls T. C. by the removal of other substances which hinder or prevent this liberation, and that in this respect I have preceded him by a period of over eight years.

The method of preparation followed, as well as the experimental and clinical data published by me can leave no doubt of the fact that my preparation contains the immunizing substance to which Prof. von Behring refers. As additional evidence I may here mention the fact, that under its clinical use specific agglutinins are developed and form in the blood serum of patients, and that these agglutinins increase in amount under its administration.

A study of the bactericidal action of blood serum from man and animals prior to their immunization, and again at periods cerresponding with certain degrees of agglutinating power reached, has been in progress in my laboratory for some time, and when concluded will be duly published.

As to the method of the therapeutic procedure, *i. e.* immunization with the prepared powdered bacilli, or with the solution of the specific toxin which I have followed, I believe my method will not suffer by comparison in the clinical test, with which I have had a long experience and which has met all the expectations that one can reasonably entertain, not only in my own hands, but also in the hands of many other physicians. Some of these have reported to me directly, while others have heretofore published their observations and their results.

For publications and discussions by others on the value of my method I refer the reader to Williams,[64] Sutherland, [65] Baker, [66] Denison, [67] McMaster,[68] Weaver,[69] Durel,[70] Matas,[71] Parham,[72] Pottenger,[73] Briggs,[74] High,[75] and Sawyer,[76] who bear me out in my every claim I have heretofore made and confirm my own results heretofore made public.[77]

For a correct estimate of the value of any specific remedy, we should consider only cases in which the disease exists in an uncomplicated form, and in which it is still in a stage where entire restoration is at least theoretically possible.

If we take therefore only cases in the early stages of tuberculosis, and of beginning phthisis, my bi-annual reports of cases of pulmonary tuberculosis treated at the Winyah Sanitarium show the following results:

	Cases Treated.	Re-covered.	Per cent.
Report of 1899.....	20	20	= 100
" 1901.....	53	49	= 92.5
" 1903.....	53	48	= 90.6
" 1905.....	45	44	= 97.8
	171	161	94.2

This shows for this class a recovery in 161 out of 171 cases, or 94.2 per cent. The other ten cases, which were all improved, left the institution either satisfied that they had attained all they wished, or to continue the treatment at home.

But even in more advanced cases it has been found that immunization is of great value, and that a large percentage can attain a lasting arrestment of, and practically a recovery from, their phthisical processes.

In this class the results were as follows:

	Cases Treated.	Re-covered.	Per cent.
Report of 1899.....	37	27	= 73
" 1901.....	80	51	= 63.8
" 1903.....	139	73	= 52.5
" 1905.....	94	79	= 84
	350	230	65.7

It will thus be seen that two-thirds of all this class still made a recovery, while the report shows that in all but a very few, more or less decided improvement occurred before the patients left the institution.

If we finally consider the cases still further advanced in consumption the results still justify the trials made.

	Cases Treated.	Re-covered.	Per cent.
Report of 1899.....	21	3	= 14.3
" 1901.....	92	20	= 21.7
" 1903.....	117	41	= 35.
" 1905.....	122	32	= 26.1
	352	96	27.3

A still larger number of patients of this class were greatly improved. We have therefore in the far advanced stages still 27.3 per cent. of good results, a ratio which exceeds that obtainable without immunization even for the most favorable class of tuberculous patients.

Concerning the duration of these results after discharge, an inquiry which had been carried on for the last year is still incomplete, but from reports of over 80 per cent. of the patients whose condition has thus far been ascetained, either directly or through their physicians, or again by examination by myself, including a tuberculin test, I can already say that there have been but very few relapses in the cases reported as recovered, and that the number of permanently recovered cases will not appear materially diminished when the inquiry is complete and ready for publication.

The reports referred to above give additional information to the interested student, more particularly by showing also the results in tuberculosis of other parts and organs, especially of the larynx.

I wish now to refer to the work of Prof. von Behring but once more, in order to say that I sincerely hope that when his completed work has been published and when the clinical trials have been made it will appear that he has, after all, advanced the subject of specific treatment of human tuberculosis, and has devised an additional improvement in a method of treatment, for which the first credit must ever belong to Prof. Koch, who is its real discoverer. Those who have followed after him have made but improvements, more or less important, and all that I wish to secure for myself is the recognition of what little I may have contributed toward the progress of the work.

A study of all the various preparations, beginning with old tuberculin, can leave no doubt that most, if not all of them, contained more or less tubercle bacillus toxins, and that, corresponding with the form of this toxin and with the amount contained, and with the absence of admixtures and impurities from external sources or from inert substances of the tubercle bacilli themselves, and according to the avoidance of injurious methods of preparation (chemicals and high degrees of heat), the various tuberculins heretofore introduced showed more or less evidence of value.

The statement made by von Behring at the Con-

gress on Tuberculosis, that until now all the specific remedies introduced have yielded valuable results only in the hands of their authors, is certainly unjustified. On the contrary, and without considering the claims of others, Prof. von Behring owes a better acknowledgment than this to Prof. Koch, especially with reference to the preparation of bovovaccine, which consists of dried-powdered living tubercle bacilli of human origin, which are not infectious for cattle. Inasmuch as Koch's tuberculin R. consists also of finely powdered living tubercle bacilli of human origin, and was introduced long before von Behring introduced his bovovaccine, I cannot well see that von Behring made a new discovery in the preparation, or that his merit can be looked for elsewhere than in the application and exploitation of Koch's labors for the industrial protection of cattle.

Neither von Behring nor I can claim a new discovery of a remedy for human tuberculosis. In the evolution of the labors for perfection of Prof. Koch's work, many other men have contributed directly and indirectly and they are all co-workers in a common purpose and cause that is of the utmost importance, and in the contemplation of which a dispute over claims of precedence is comparatively insignificant.

In the meanwhile it is proper that von Behring's method should have a careful and impartial trial, and if it is correctly stated, there is no difficulty in giving it an immediate one by animal experiments at least, even if von Behring declines to supply the preparation. Any competent bacteriologist can readily produce it himself, and I am myself able to place at the command of those who wish to experiment, the necessary quantities of tubercle bacilli extracted and prepared identically with von Behring's published method, and in a state which I necessarily reach in my own preparation, prior to the final extraction with distilled water.

In conclusion I may venture to express my belief in the approaching realization of Prof. Tyson's prediction,[78] made in 1884, when, in a clinical lecture on pulmonary phthisis, he said: "Consumption is a specific inflammation. Some day we may discover a specific remedy for the specific inflammation of consumption, a remedy which will give us the same power over this disease which we now possess over syphilis."

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A FEW FACTS CONCERNING CANCER OF THE STOMACH.*

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Your President, in arranging for a series of short papers on certain abdominal disturbances, which are of common interest to physician and surgeon, has begun with the stomach, partly, no doubt, because digestive discomforts begin here, but more, perhaps, because there is less accord here than in many other organs as to what should be considered medical and what surgical cases.

The peculiar difficulties in diagnosis explain this lack of accord. The stomach is so situated that palpation is not satisfactory. The border of the ribs protects it so that a mass of considerable size may exist which cannot be felt; and if one waits until the palpable mass exists before making the diagnosis, the growth will have often progressed beyond the favorable stage for treatment.

The most important surgical ailments of the stomach are cancer and ulcer. The ulcer surely has as much surgical importance as the cancer; from the pyloric stenosis which may follow its healing; from the digestive disturbance which may accompany its presence when not healed; from the hemorrhages which sometimes occur; and from perforation which may result in general peritonitis, or in local peritonitis with consequent symptoms. It is difficult, however, even to touch on the important facts about gastric cancer in the time allotted for this paper, and hence I will ask your forbearance and postpone the consideration of the ulcer which was announced on the program.

Without attempting to consider the entire subject of gastric cancer, Iwill ask your attention to four topics concerning it: (1) The frequency of its occurrence; (2) its position as a surgical disease;(3) the customary method of treatment in our city; (4) the possibility of making a diagnosis in the early stages of the disease.

Perhaps the most startling fact concerning gastric cancer is the frequency of its occurrence.

The United States census report for 1900[1] indicates that there were at least 9,000 deaths from cancer of the stomach in the country in that year. In the registration area there were 4,220; this is 65 per cent. more than from appendicitis and materially more than from scarlet fever, measles, or whooping-cough.

A table which gives the records of the registration districts indicates that 31 per cent. of the fatal cancers whose location was recorded were gastric; 16 per cent. were uterine; 13 per cent. were hepatic; 10 per cent. were mammary; 8 per cent. were abdominal; 6 per cent. were of head, neck, or face; and 5 per cent. were of the mouth, tongue, and throat.

*One of the papers read before the New York County Medical Society, December 26, 1905, on "Digestive Disorders and Abdominal Pain from the Standpoint of the Surgeon."

As a matter of fact this estimated frequency of gastric cancer is probably much too small, since it is altogether probable that a part of the cases recorded as located in liver and abdomen were really primarily gastric. It is also probable that many of the 13,484 deaths ascribed to "gastritis," and "diseases of the stomach," were also cancerous.

Statistics indicate that there is a steady increase in the proportion of the population afflicted with cancer, and also that stomach cancers are increasing more rapidly than those located elsewhere. From 1890 to 1900 the ratio of cancer deaths per 1,000 of the total deaths increased from 22 to 28. In 1880 the ratio of breast, uterine, and stomach cancers stood 10, 14, 20, while in 1900 it stood 10, 16, 31.

The vital statistics of our city indicate that conditions here correspond to those in the country at large. The Registrar's report for 1903 shows that in thirty years the death rate from cancer increased from 423 to 642 per million of the population, and that in that period cancer of the stomach, liver, and intestines increased from 40 per cent. to 53 per cent. of the entire cancer mortality, and that mammary and uterine cancer decreased respectively from 13 to 9 per cent., and from 28 to 16.4 per cent.

The *second topic* to which I would ask your attention is generally accepted in theory and rejected in practice. It is that cancer of the stomach is primarily a surgical disease. We know of no internal treatment which is ever curative, but there is a fair proportion of patients who have lived in good health many years after operation. The mortality rate for the operation is no higher than that for many other operations which are more frequently done. Mayo,[2] Kocher,[3] and von Eiselberg[4] report long series of gastric resections or pylorectomies with mortality rates of respectively 14.5, 16.9, 18.7 per cent., and there are at least three series of 25 to 35 cases with a mortality rate of only 4 to 8 per cent.

The details of the technique of this operation have been simplified and perfected by many operators, but particularly by our own countryman, Mayo, who considers it no more difficult than a hysterectomy, and it is now fair to state that with cases fairly well selected the present mortality rate is about 10 per cent.

The permanent results of these operations are also encouraging: Eleven of Mayo's 81 cases were too recent to be of statistical value at the time of his report; 5 failed to live six months; 38 lived six months to a year; 21 lived one to two years; 10 lived two to three years; 4 lived three to four years. Only 16 of the cases were operated upon more than three years ago, hence 25 per cent. of them lived three years, one of whom is alive and well after four years and ten months.

Kocher's statistics refer to 71 patient on whom he had successfully done gastric resection or pylorectomy by various methods for carcinoma. 28.2 per cent. of these patients were living at the time of the report, one of them sixteen and one-quarter years after operation. The average lapse of time since the operation for these 20 living cases was three and three-quarters years; 71.8 per cent. had died from one month to six years after the operation, the average duration of life being a year and a half. We might quote statistics from many of the large European clinics, but these are sufficient for illustration.

A patient, who is here shown, and who has come from the country to be at this meeting,

is an illustration of the good results which may come from the surgical treatment of this condition. He is a man of 54, who is now in good health and working regularly about his farm; he had a pylorectomy for adenocarcinoma August 6, 1902. He had since boyhood suffered from digestive disturbance, with flatulence, pyrosis, and occasional vomiting. For six months or more before operation these symptoms became more marked, and progressive loss of weight and strength was added to them. Dr. George L. Hubbell, of Hobart, N. Y., made the diagnosis of gastric cancer, although no mass could be palpated in the epigastrium. Before operation was done his weakness progressed so as to be alarming. He could, for instance, hardly carry anything from his house to his barn, and when he came to the city and walked up the steps of a house, his dyspnea was so distressing that he looked like a man with a serious cardiac lesion. None was found, however, and after a few days' rest in the hospital, an exploration was done and a large adenocarcinoma was found projecting into the stomach cavity from the posterior wall of the pyloric end of the stomach.

This end of the stomach was, therefore, excised and he made a rapid recovery, left the hospital on the twenty-sixth day, promptly gained 25 pounds in weight, and has been enjoying good health and working as a farmer ever since, a period of three and a half years.

In November of this year the writer showed a similar case to the New York Surgical Society, a young woman, about half of whose stomach he removed in June of this year. She is now in better helath than she has ever known before, has been to Europe in the meantime, and is attending to her ordinary duties. These two cases surely justify much work on the subject; among the writer's list of thirteen operations for carcinoma of the stomach they are the best. Four others, however, were much benefited by gastroenterostomies. In three only exploratory incisions were made. The remaining four, who had very extensive growths, died within a month. The results corresponded to the pathological condition found. Those with circumscribed growths were greatly benefited; those with more diffuse growths were somewhat benefited; those with extensive growths were not benefited.

The *third topic* concerning gastric cancer to which your attention is called is perhaps of local rather than general interest; it relates to the number of gastric cancers in our city which really receive surgical treatment. This number is relatively very small indeed. Cancer of the stomach was given to the Health Department as the cause of death in 1,141 cases last year in Greater New York. A search of the reports and records of 25 of our hospitals for that year indicates that only 98 operations were done in them for that disease. These hospitals treated a total of 89,353 patients in their wards, and comprise all of the general hospitals of which the writer could get records.

Of course some operations for gastric cancer were done outside of these hospitals, and again there is a liability to error in the interpretation of the hospital records, but the ratio of 98 to 1,141 is as 1 to $11\frac{3}{4}$, and making any allowances for error which one may wish, the evidence is overwhelming that the surgical treatment of cancer of the stomach in our city is the exception and not the rule.

The records of the General Memorial Hospital in this city indicate the same thing. As stated before, vital statistics indicate about three stomach cancers to one breast cancer, and about two stomach cancers to one uterine cancer. Yet, in that institution, there have been admitted since its foundation in 1888, 1,018 uterine cancers, 888 breast cancers, and only 72 stomach cancers, and of these 72 only 38 were deemed suitable for even an exploratory operation.

The *fourth topic* concerning gastric cancer relates to the possibility of making a diagnosis while there is still a fair prospect of cure. When the growth is circumscribed and gives early pyloric obstruction, and possibly a palpable tumor, this diagnosis should be made in a large proportion of cases. When, however, there is a diffuse cancerous involvement of the stomach walls, an early diagnosis is not likely to be made. The patient who has the symptoms in an exaggerated form will have severe attacks of vomiting, usually not long after eating. A portion of the vomitus may resemble coffee-grounds. There will also be severe attacks of pain coming at about the same time; in fact, patients sometimes bring on artificial emesis to relieve the pain. Loss of strength and weight will supervene, and a mass will be felt in the epigastrium. Unfortunately the symptoms do not often come in this tell-tale way. Kocher found that the initial symptoms of diminished appetite, pyrosis, and epigastric discomfort often precede the severe vomiting by many months, and that this severe vomiting, which he considers the most important symptom, is not constant. He found it in 73 per cent. of his cases, having existed on an average about seven months before admission to the hospital. It came sometimes after each meal, sometimes daily, sometimes at irregular intervals, in rare instances where great dilatation existed food coming up which had been swallowed days before.

Pain, although less characteristic than the vomiting, is still an important symptom; it is often associated with gastric adhesions. The relief which comes with emesis is apparently due to the quiet which the stomach then has.

Loss of weight and strength eventually comes to all these patients, but not always in time to lead to an early diagnosis.

The presence of a palpable mass is, of course, a most important diagnostic aid, and skill is developed in this palpation, as in other abdominal examinations. Kocher records a palpable tumor in 73.3 per cent. of his cases, and a feeling of resistance in 8.2 per cent. more. Matti[3] quotes Nordmann, Kappeler, and Kronlein as having felt epigastric tumors in, respectively, 89, 96, and 91 per cent. of their cases. In many cases the growth passes by the stage favorable for operation before it is palpable in the epigastrium, but in some instances a nodular, movable growth similar to the second of the writer's cases referred to above may be distinctly palpated while still in the favorable stage for removal.

The chemical examination of the gastric contents is helpful, but may be misleading. The different examinations from the same stomach may differ much, and although absence of hydrochloric and presence of lactic acid may indicate cancer, it does not surely do so; and on the other hand hydrochloric acid may be present and lactic acid absent in a stomach which is the site of cancer.

Exploratory operation has a distinct position in making the diagnosis of this condition.

A small incision of one and a half or two inches between the umbilicus and ensiform cartilage is sufficient for introducing the finger, and is often sufficient to establish the diagnosis; it can be enlarged if further operation or examination is needed. Mayo has his patients out of bed two or three days after such an exploration. Deaver[5] considers an exploration less objectionable in this than in any other class of cases.

Many able medical men are devoting much study to this condition, not only by clinical and laboratory methods, but by attending the operations on their cases and witnessing the conditions *in vivo*; and it is fair to believe that we shall see the same development in diagnosis in these cases which we have seen in other abdominal conditions. Most of us can remember when the diagnosis of appendicitis was usually made on the appearance of a large abscess; the diagnosis of ectopic gestation after a fatal hemorrhage; intussusception, volvulus, and intestinal perforation after the onset of general peritonitis; cholecystitis when abscess formation had occurred; yet in all these conditions a skill in diagnosis has been developed commensurate with the gravity of the conditions, and a similar increase in the ability to deal with gastric cancer may be expected.

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DIGESTIVE DISORDERS AND ABDOMINAL PAIN.

FROM THE STANDPOINT OF THE SURGEON AS TO GALL-BLADDER, PANCREAS, AND GASTRIC ADHESIONS.*

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The field assigned to me for consideration is comprised in an area irregularly pyramidal in shape, the base not exceeding three inches square in the normal human subject, with the apex made by the common biliary duct, head of the pancreas, the duodenal end of the stomach, and the first portion of the duodenum; while in the base, during health, we have the fundus of the gall-bladder, a portion of the lesser curvature of the stomach, etc.

The difficulty of clinically establishing an absolute diagnosis of disease invading one of the structures mentioned as forming the apex of the pyramid, can readily be understood, and therefore it is manifestly important that all aids in the chemistry of digestion and the excreta, be called into play. Unfortunately, from a clinical standpoint, chemistry has not reached that degree of perfection one could wish for when a definite or absolute diagnosis is demanded.

We, as operators, are frequently disheartened by the evidences of new growths presented upon exploration, when the chemical analyses, as at present understood, have pointed to an entirely different condition. As a result of these conflicting chemical conditions, symptomatology must, for the present, be relied upon by us, in urging the patients to accept an abdominal section, which may smatter somewhat of an exploration. But far better be it that such an exploratory examination be made, with its findings, than to wait for a pronounced motorial insufficiency or tumor presence.

*Read before the Medical Society of the County of New York, Tuesday, December 26, 1905.

Digestive Disorders.—Under this term I shall consider, in a differential sense, only the proper transit of food through the gastrointestinal tract, with its proper disintegration for absorption, its fermentation or flatulence production, and finally its exit as effete matter. Transit through the gastrointestinal tract is modified by new growths, diminishing the intestinal lumen either from within or without, and by gastric adhesions. In the latter it is due in all probability, to the adhesions either kinking the pyloric orifice, so as to act mildly as an obstruction, or by producing a gastroptosis, or finally by so involving the musculature of the stomach, as to prevent proper muscular contractions. While in the former condition, whether due to exudate, pus, blood, or new growths, the cause is in the nature of a compression, or internal occlusion of some portion of the stomach or bowel in this pyramidal space.

As a result of motor insufficiency or obstruction, all the symptoms of a pyloric stenosis with its subsequent pathological conditions, may be present. The proper disintegration of food is not markedly modified in the earlier gastric adhesion cases, and a sense of epigastric weight may be elicited. Flatulence is not marked, nor is there ordinarily any evidence of any undigested food in the excreta.

In gall-bladder invasions, owing to increase in size from whatever cause, there may be obstruction by pressure on the duodenum. There is always a history of flatulence and sense of weight in the epigastrium, and occasionally partially digested food contents, and some fat in the stools in addition to those modifications of the excreta due to the absence of bile, especially found in invasions of the common biliary duct.

In pancreatic disease not including malignancy, we are prone to have a gall-bladder or duct history, or a history of sudden onset of pain with subsequent tumor formation, and its pressure symptoms or early demise by a rapid fat necrosis and toxemia, following the onset of pain. In interstitial pancreatitis, more or less flatulence is manifested. The close association of this type with gall-bladder or duct disease, may be accountable for the latter condition. The excreta contain in many instances, globules of fat, and partially digested muscle fiber. It has been observed that liquid fat is expelled after a normal stool, and also that the stools may be much larger than normal, when compared to the amount of food taken.

In addition, as a differential factor in the diseases of these three viscera, the analysis of urine must be taken into consideration. Sugar in the urine has been claimed as a factor in pancreatitis. I have had four cases, in none of which sugar was present at any stage.

Dr. Wm. S. Thayer reports five cases of pancreatitis in the Johns Hopkins Bulletin for November, 1905, in none of which sugar ever appeared at any time, while under his observation. With these nine unselected and consecutive cases, with no sugar in any of them, one is led to question its weight when present.

The presence of lipase in the urine was shown by Hewlett (see Thayer's article) to be a constant factor in all cases of insult to the pancreas,

but to obtain this reaction requires a complex process and a period of over twenty hours of actual preparation. During such a period of time one would lose a brilliant opportunity, in many a case, of saving a life.

Pain.—No pain of any moment is evidenced in the gastric adhesion cases; the patient's only complaint in this regard is a sense of soreness or distension. In gall-bladder disease, the pain varies from practically none, to a pronounced attack of colic requiring large doses of morphia. In the non-inflamed cases, a sense of soreness is described as seated behind the ninth or tenth costal cartilage on the right side, and can always be intensified by digital pressure close to the arch in this region, while in duct stone the pain is deeper seated, and the pressure must assume a more oblique direction, pointing nearer the median line. Pain also in these cases is evidenced in the back, radiating from the right to the left side, also upward to the right or between both shoulder blades.

In pancreatitis of the chronic variety, the pain is of a dull character to a back-splitting type, and is usually assigned to the dorsilumbar region; while in the acute variety the pain is as a rule more intense than in the passage of a biliary calculus, and may be generalized as in acute appendicitis, or as in one case recently seen by me, in which after the subsidence of shock, markedly intense pain was felt, after three-quarters grain of morphine had been given in six hours, only in the left iliac fossa; this may have been due to the free beef broth like fluid in the pelvis, or to the reflection in the sympathetic plexus; while in the second case pain was evident after the first six or eight hours, only in the region of the ninth and tenth costal cartilages of the left side.

Case I.—Gastroduodenal and biliary adhesions, with gastroptosis. A woman thirty-five years old was seen by me on July 3, 1905. Family history negative; operation for appendicitis and ovaritis eight years ago. Following the operation, although she stated that she had had a "catarrh" of the stomach for eight or nine years, she felt perfectly well. In September, 1904, while in the mountains, as a result of taking an excess of spring water, an attack of diarrhea was induced, accompanied by a temperature of 104° to 105°, which lasted for five days. From this time to January, 1905, she has been unable to retain food, claiming that it produced pain and nausea; at the same time admitting no time relationship between the intake of food, and its pain and nausea production. This condition subsided, so that from January to June, 1905, she felt fairly well.

From June to the time I saw her she was again complaining of her former symptoms of nausea, vomiting, and pain. The vomiting, while occurring four or five times a week, was never cumulative, but always the last meal ingested. There is also some pain in the right axillary line below the costal margin upon deep inspiration. She assumes the stooping rather than the erect posture when sitting, claiming less nausea and pain by this position. Pain after food is not in the epigastrium, but rather high and toward the median limit of the right hypochondrium. Has had to resort to morphia on several occasions. Loss of weight, twenty pounds at present, although it has at one time been as much as thirty-two pounds. Constipated; never jaundiced to her knowledge; appetite good; weighs one hundred and eleven pounds.

Examination revealed a painful gall-bladder region, and a right movable kidney. A diagnosis was made of adhesions or gallstones and movable kidney, and I advised exploration. This diagnosis was surprising to her and her husband, a physician, who stated that she had been under the care of the best stomach specialist, and as a result of repeated tests, ulcer and gastralgia were the invariable diagnoses.

August 28, kidney somewhat more displaced, nausea and vomiting increased; now weighed one hundred and nine pounds and was becoming exhausted. Operation again advised, and she was then seen by Dr. Adler, who also advised exploration. Operation was done on September 19. Right rectus incision. The gall-bladder had two small bands leading to the duodenum, between the first portion of the duodenum and the lesser curvature of the stomach, a filmy but firm band about two inches wide was distinctly demonstrated and a marked angulated gastroptosis evident. The gall-bladder contained no stones. The adhesions were removed; three chromic catgut stitches were used to anchor the lesser omentum to the parietal peritoneum, thereby elevating and correcting the angulated gastroptosis. No vomiting or nausea has followed, all foods are being taken with a relish, and up to to-day a steady increase in weight has taken place.

Case II.—Acute Hemorrhagic Pancreatitis. Miss D., age thirty-two, was taken with a most excruciating pain in the abdomen while at mass, at eleven o'clock on Sunday morning, October 8, of this year. The pain was so severe that she fell, although she retained consciousness. Upon arrival at home about noon, she was seen by Dr. Hadden to whom I am indebted for the case, who gave her a quarter grain of morphine, followed it in two hours with another quarter grain, and again in two hours with another equal dose. I saw her at 7:30 P.M. and found a rigid abdomen and pain only in the left iliac region. Her pulse was 98, and the temperature 100°. There was a peculiar livid, and a most anxious appearance and anxious mentality. Immediate operation was advised. She was operated upon about eleven hours after the onset of pain, through a Kammerer incision. The abdomen contained a large quantity of beef-brothlike bloody serum. The appendix was not acutely involved, but the inflammation was a chronic one, characterized by a central distention and by a distal and proximal atrophy. The appendix was removed and the incision was continued upward after I had satisfied myself that the pelvic contents were normal. Upon pulling down upon the stomach and duodenum, the pancreas was readily seen under its peritoneal layer as large as a fair sized fist and of a blue-black color. The peritoneum over the pancreas was incised, a blunt instrument passed into the pancreas, and a large cigarette drain and additional gauze packing introduced; and after a large piece of rubber tissue had been used as a dam to exclude as much of the contents as possible from the general cavity, the abdomen was sutured up to the drain. There was a profuse discharge with a musty odor, and of the same color as the fluid found at the time of the operation, but with an additional mucilaginous feel, which continued for six or eight days, it being necessary to change large abdominal dressing pads four to eight times a day. During the first five to seven days it was observed that areas of fat necrosis would appear on the sub-

cutaneous fat in the drainage gap. Pain of a splitting character in the back was a feature from the first day until the third week. No sloughs were discharged, the drain sinus persisting until the latter part of November. No sugar was ever found in the urine, and no digestive disturbances were noted during the entire convalescence.

Case III.—Gallstones in the common duct; repeated attacks of jaundice; no colic at any time. This patient was referred to me by Dr. Conrad of Hackensack, on November 22, 1905. The patient was a woman, forty-six years old, married. The father died of biliary (?) fever. Up to February of this year, barring occasional attacks of abdominal distention, she was perfectly well. At that time she weighed one hundred and ninety-two pounds; thirty days ago she weighed one hundred and sixty pounds. In February, 1905, she had an attack of "distress" in the stomach; no pain; loss of appetite; chill for four hours; feverish; slightly jaundiced before the chill; profoundly jaundiced after the chill; unbearable itching; white stools; yellow urine. Following this attack, she had from one to eight attacks a month, of varying intensity as to jaundice, and lasting from one to several days. Certain foods, particularly greasy ones, would seem to bear some relation to an attack. Vomited occasionally. Now weighs one hundred and fifty-nine and a half pounds, with extra heavy winter clothes on.

Examination showed the patient jaundiced and emaciated. Physical examination, except that of the duct region, negative. Pain on pressure over the region of the common duct.

Operation, December 4. Exposure of the gall-bladder region brought a mass of adhesions into view, with no distinguishable gall-bladder. The liver at the usual site of the gall-bladder was sclerotic and mottled gray over an area of about two and half square inches. A large hard mass two inches long by one and a half inches wide, filling what appeared to be a portion of the duodenum, was brought into the wound after liberating the adhesions. This proved to be a stone one and a half inches by one inch in the common duct, at the posterior surface of the duodenum. The gall-bladder was completely atrophied. Stones were also found in the hepatic ducts, and another large stone the size of a filbert in the common duct, in contact with the first.

Choledochotomy was done, the hepatic ducts were relieved of three stones and the abdomen was closed. The patient has made a perfect recovery. Why this patient never had any colic is hard to explain. Her vomiting could readily be explained by the narrowing of the duodenal lumen by angulation of the duodenum over the stone and posterior pressure, thereby inducing a temporary or transitory pyloric, or duodenal stenosis, varying from partial to complete in degree.

60 West Fifty-second Street.

Sincere Quackery.—The following rather remarkable case of honest but fanatic belief in the therapeutic efficacy of a medicinal compound, which occurred in London some time ago, is related in the *Globe*. An old lady sued Sir William Broadbent, a leading London practitioner, because he refused to buy or try her elixir. This "was no common remedy, being free from those minerals which are the root of all evil, but the skilful blending of a herb of which medical men know nothing." Needless to say the old lady lost her case, which she pleaded in person. Her sincerity was as obvious as her stupidity and made her a pathetic rather than a ridiculous figure.

THE DISTRIBUTION OF MOSQUITOS IN THE UNITED STATES.*

AS SHOWN BY COLLECTIONS MADE AT ARMY POSTS, 1904-1905.

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WASHINGTON, D. C.

Under the authority of the Surgeon-General, U. S. Army, collections of mosquitos have been made during parts of 1904 and 1905 for the purpose of determining what mosquitos were present at the various Army posts. The first collections were restricted to the Southern States, but in 1905 all the stations in the United States were included in the work. However, owing to the facts that the collections did not begin until late June this year, and at some of the Posts only one, or no collection was made, the list is still quite imperfect, though points of much interest alike to medical and entomological workers have been brought out.

In considering the following list it is necessary to remember that a given mosquito is not necessarily absent from a Post because not reported, for the Anophelina especially are relatively shy and often escape the collector. A good example of the foregoing is the condition at Fort Hamilton, N.Y. Harbor, where, during a malarial outbreak in the summer of 1904, anopheles were sought for diligently, but none taken till November, when one specimen of *Anopheles punctipennis* Say. was secured; as however, *punctipennis* has so far given only negative results in experiments with the malarial parasite, it could not be held responsible. Collections were resumed July 5, 1905, the report, "a few cases of tertian malarial fever under treatment" being sent with the first collection; but in spite of the careful and painstaking way in which the collections were made, it was August 9 before a single anopheles was taken; then some specimens of *Anopheles maculipennis* Meig. were sent in, and it has appeared occasionally in the collections since. That these mosquitos were present earlier in the season, and also last year, is practically certain, but it took almost daily collections at various hours, for nearly a month to prove their presence.

In regard to *Stegomyia fasciata* Fabr. a word is perhaps wise. Dr. L. O. Howard has shown (Public Health Reports, "Concerning the Geographic Distribution of the Yellow Fever Mosquito") that this insect will breed within the northern limits of the "Lower Austral Zone," and that it may occur for a season beyond this if carried by artificial means (cars, boats, etc.). It is, however, to be borne in mind that while *S. fasciata* may breed in these limits it is not present at some localities where we would naturally expect to find it; two Posts will serve as examples: (*a*) Fort De Soto., Fla., from which as high as 1187 mosquitos of one species were sent in one collection, has never sent one *S. fasciata*, and (*b*) Fort St. Philip, about 70 miles south of New Orleans, in the marshy land on the Mississippi, also well within the Austral limits, has also never, in two years, sent a single specimen, though they were sought for with great care by both Dr. G. W. Daywalt, Cont. Surgeon, U. S. A., and Dr. J. R. Johnson of Empire City, two cases of yellow fever imported from New Orleans which developed fatally in the latter place, only a few miles distant from Fort St. Philip, being the immediate cause of this active search. In passing

* Prepared in December, 1905, and published by authority of the Surgeon-General, U. S. Army.

it may be of interest to add that no other cases occurred at Empire City. There has lately been published a statement that *S. fasciata* bite at night only after being infected; this is open to criticism inasmuch as in the Philippines, where this mosquito abounds, and where no yellow fever is known, it bites freely in lighted rooms, at night, and is often found in the bed nets in the morning in a condition that leaves no room for doubt as to its activity.

The classification used in determining the mosquitos listed in this paper, is that of Mr. F. V. Theobald, M.A., Cantab., British Museum, as published in his Monograph; and the basis of differentiation is, in many cases, largely dependent on scale structure and position, which, of course necessitates microscopic study. The system is not perfect, but so far no one has presented a better one, those offered being open to quite as serious objections as are urged against this. Also, in this paper, no attempt has been made to differentiate species whose larval characteristics were the sole basis for their creation, for these larval differences, while of great philogenetic interest, are of little value to the systematist unless the differences occur also in the adult, as it is with the adult, the perfect, and reproductive form that he must of necessity deal.

The genera are grouped in their sub-families, the localities given alphabetically, and, except in the *Anophelina*, *Stegomyia fasciata*, and *Culex fatigans*, where species have been found in more than one locality in a State, merely the State is given.

ANOPHELINA.

Anopheles Punctipennis. Say.

Hot Springs.....Ark.
Fort Hamilton.....N. Y.
Huntingdon .....Tenn.
Fort Leavenworth....Kan.
Leon Springs.....Tex.
Fort Niagara.....N. Y.
Fort Reno.....Okla.
Rock Is. Arsenal...Ill.
Fort Snelling.....Minn.
Fort Sill.....Okla.
Fort Wadsworth.....N. Y.
Fort Washington....Md.
Westlawn Cem....O

Anopheles franciscanus. McCracken.

Fort Brown.....Tex.
Benecia Barracks...Cal.
Fort Clark.....Tex.
Leon Springs.....Tex.
Fort Sam Houston...Tex.

Anopheles maculipennis. Meigen.

Fort Apache.....Ariz.
Augusta Arsenal....Ga.
Benecia Barracks...Cal.
Boise Barracks.....Idaho.
Fort Dade.....Fla.
Fort Du Pont.....Del.
Fort Fremont.....S. C.
Fort Hancock.....N. J.
Fort Hamilton.....N. Y.
Fort Howard.....Md.
Fort Hunt.....Va.
Huntingdon.....Tenn.
Jackson Barracks...La.
Jefferson Barracks..Mo.
Fort Logan H. Roots.Ark.
Madison Barracks..N. Y.
Fort Missoula.....Mont.
Fort Morgan.....Ala.
Fort Monroe.....Va.
Presidio, San Fran., Cal.
Rock Is. Arsenal...Ill.
Fort Reno.....Okla.
Fort St. Philip.....La.
Fort Snelling.....Minn.
Fort Sill.....Okla.
Fort Smallwood.....Md.
Watervliet Ars....N. Y.
West Point.....N. Y.
Westlawn Cem....O.
Washington B'cks..D. C.
Fort Wadsworth.....N. Y.
Fort Washington....Md.

Anopheles crucians. Wiedemann.

Fort Barrancas.....Fla.
Fort Caswell.....N. C.
Fort Du Pont.....Del.
Fort Fremont.....S. C.
Jackson Barracks...La.
Leon Springs.....Tex.
Fort Monroe.....Va.
Fort Ringold.....Tex.
Fort St. Philip.....La.
Fort Screven.....Ga.
Fort Smallwood.....Md.

Anopheles nigripes. Staeger.

Fort St. Philip.....La.
Fort Screven.....Ga.

CULICINA.

Jathinosoma musica. Say.

Augusta Arsenal....Ga.
Fort Brown.....Tex.
Jackson Barracks...La.
Fort Logan H. Roots.Ark.
Fort Leavenworth....Kan.
Fort Oglethorpe.....Ga.
Rock Is. Arsenal...Ill.
Fort St. Philip.....La.
Westlawn Cem....O.

Jathinosoma Arribalzagae. Giles.

Fort Logan H. Roots.Ark.

Jathinosoma discrucians. Walker.

Fort Logan H. Roots.Ark.

Psorophora ciliata. Robineau-Desvoidy.

Baltimore.....Md.
Florida
Fort Hancock.....N. J.
Fort Hunt.....Va.
Fort Morgan.....Ala.
Rock Is. Arsenal...Ill.
Fort Screven.....Ga.
Fort Wadsworth.....N. Y.

Psorophora scintillans. Walker.

Fort Reno.....Okla.

Psorophora Howardii. Coquillett.

Fort Hunt.....Va.
Fort Leavenworth...Kan.

Stegomyia fasciata. Fabricius.

Augusta Arsenal....Ga.
Fort Barrancas.....Fla.
Fort Bliss.....Tex.
Fort Brown.....Tex.
Fort Fremont.....S. C.
Henry Barracks....P. R.
Columbia.....S. C.
Hot Springs.....Ark.
Jackson Barracks . La.
Key West Bar'cks.Fla.
Fort McIntosh.....Tex.
Fort Moultrie.....S. C.
Fort McPherson.....Ga.
Fort Ringold.....Tex.
Fort Sam Houston...Tex.
San Juan.....P. R.

Stegomyia scutellaris. Walker, var. *Samarcusis.* Ludlow.

Camp McKinley.....Hawaii.

Theobaldia annulata. Meigen.
California.

Theobaldia incidens. Thomson.

Fort Apache.....Ariz.
Boise Barracks.....Idaho.
Fort Washakie.....Wyo.
California.
Washington.
Fort Wingate.....N. M

Grabhamia jamaicensis. Theobald.

Fort Caswell.....S. C.
Florida
Fort St. Philip.....La.
Washington B'cks..D. C.
Fort DuPont.....Del.
Fort Morgan.....Ala.
Virginia
Fort Washington....Md.

Grabhamia sollicitans. Walker.

Baltimore.....Md.
Boston Harbor.....Mass.
Fort Hancock.....N. J.
Fort Logan H. Roots.Ark.
Louisiana
Fort Morgan.....Ala.
New York Harbor...N. Y.
Fort Screven.....Ga.
Fort DuPont.....Del.
Florida
Fort Lincoln.....N. D.
Maine
Fort Monroe.....Va.
Fort Niobrara.....Neb.
Rhode Island
South Carolina

Grabhamia curriei. Coquillett.

Benicia Baracks....Cal.
Montana
Fort Duchesne.....Utah.
Washington

Grabhamia spencerii. Theobald.

Fort Baker.....Cal.
Fort Niobrara.....Neb.

Grabhamia de Nicdmannii. Ludlow.

Benecia Barracks...Cal.

Grabhamia dorsalis. Meigen

Benecia Barrack...Cal.
Fort Mackenzie ....Wyo.

Culex signipennis. Coquillett.*

Fort Bliss.....Tex.

* Was originally published as a *tæniorhynchus.*

Culex tæniorhynchus. Wiedmann.

Fort Apache.....Ariz.
Fort Hancock.....N. J.
Fort Howard.....Md.
Fort Morgan.....Ala.
Rock Is. Arsenal...Ill.
South Carolina
Florida
New York Harbor.N. Y.
Louisiana
Fort Monroe.....Va.
Fort Rodman.....Mass.
Fort Screven .....Ga.
Fort Wright.....Wash.

Culex portoricencis. n. sp. Ludlow.

San Juan.....P. R.

Culex kelloggii. Theobald.

Benecia Barracks...Cal.
Fort Duchesne.....Utah.
Fort Logan.....Colo.
Fort Niobrara.....Neb.
Fort Reno.....Okla.
Texas.
Boise Barracks...Idaho.
Huntingdon.....Tenn.
Fort Missoula.....Mont.
Rock Is. Arsenal...Ill.
Fort Snelling.....Minn.
Washington.

Culex cantans. Meigen.

Boston Harbor.....Mass.
New York Harbor...N. Y.
.....Maine.

Culex sylvestris. Theobald.

Boston Harbor.....Mass.
Fort Ethan Allen.....Ver.
Huntingdon.....Tenn.
Fort Leavenworth....Kan.
Fort Mackenzie.....Wyo.
Montana.
New York.
Sequoia Nat. Park..Cal.
Westlawn Cem.....O.
Fort Duchesne.....Utah.
Fort Hancock.....N. Y.
Illinois.
Jefferson B'cks....Mo.
Fort Lincoln.....N. D.
Fort Snelling.....Minn.
Virginia.
Fort Williams.....Me.
Washington B'ks..D. C.

*Culex cantator.** Coquillett.

Boston Harbor.....Mass.
Fort McHenry.....Md.
Maine.
New York Harbor...N. Y.
Fort Harrison.....Mon.
Fort Mansfield.....R. I.
New Jersey

Culex canadensis. Theobald.

Fort Logan H. Roots.Ark.
Fort Snelling.....Minn.
Fort McKinley.....Me.
Westlawn Cem....O.

Culex tarsalis. Coquillett.

Fort Baker.....Cal.

Culex confirmatus. Arribalzaga.

Jackson Barracks...La.
Georgia.

Culex serratus. Theobald.

Fort McPherson.....Ga.

Culex triserriatus. Say.

Augusta Arsenal....Ga.
N. Y.
Fort Snelling.....Minn.
Jefferson B'rcks....Mo.
Rock Is. Arsenal...Ill.
Westlawn Cem....O.

Culex dyari. Coquillett.

New York.
Fort Snelling.....Minn.

Culex trivittatus. Coquillett.

Illinois
Fort Sill.....Okla.
Fort Leavenworth...Kan.
Westlawn Cem....O.

Culex punctor. Kirby.

.....Alaska.
Fort Casey.....Wash.

Culex consobrinus. Robineau-Desvoidy.

Benecia Barracks...Cal.
Fort Brady.....Mich.
Fort Howard.....Md.
Maine.
New York.
Rock Is. Arsenal...Ill.
Boston Harbor....Mass.
Fort Duchesne.....Utah.
Fort Lincoln.....N. D.
Montana.
Fort Niobrara.....Neb.

*Runs close to Cantans.

Culex nemorosus. Meigen.

Alaska.
Fort Mackenzie.....Wyo.
Rock Is. Arsenal.....Ill.
Fort Casey.....Wash.
Montana.
Fort Snelling.....Minn.

Culex nigripes. Zetterstadt.

Fort Liscum.....Alaska.
Fort Niobrara.....Nebr.
Montana.
Vancouver Barracks.Wash.

Culex territans. Walker.

Boston Harbor.....Mass.
Fort DuPont.....Del.
Huntingdon.....Tenn.
Fort Logan H. Roots.Ark.
Fort Williams.....Me.
Washington B'cks..D. C
New York
New Jersey
Fort Brady.....Mich.
Fort Ethan Allen....Ver.
Key West Barracks..Fla.
New Jersey
Rock Is. Arsenal...Ill.
Ohio
Fort Washington....Md.
Washington Barracks D. C.

Culex pipiens. Linnaeus.

Fort DuPont.....Del.
Huntingdon.....Tenn.
Maryland
New York
Rock Is. Arsenal...Ill.
Fort Strong.....Mass.
Washington B'cks..D. C.
Hot Springs.....Ark.
Jefferson B'cks....Mo.
Fort Mott.....N. J.
Ohio
Fort Snelling.....Minn.
Fort Thomas.....Ky.
Fort Williams.....Me.

Culex restuans. Theobald.

Jefferson Barracks..Mo.
New York
Massachusetts

Culex fatigans. Wiedemann.

Augusta Arsenal....Ga.
Fort Brown.....Tex.
Fort Clark.....Tex.
Fort Fremont.....S. C.
Fort Du Pont.....Del.
Jackson Barracks...La.
Leon Springs.....Tex.
Fort McIntosh.....Tex.
Fort McPherson.....Ga.
Fort Monroe.....Va.
Fort Pickens.....Fla.
Fort Reno.....Okla.
Fort Sam Houston....Tex.
Fort St. Philip.....La.
Fort Trumbull.....Conn
Washington B'cks..D. C.
Fort Barrancas.....Fla.
Fort Caswell.....S. C.
Columbus B'cks...Del.
Fort Hamilton.....N. Y.
Henry Barracks...P. R.
Key West B'cks...Fla.
Fort McRee.....Fla.
Fort Meyer.....Va.
Camp McKinley.Hawaii.
Fort Moultrie.....S. C.
Rock Is. Arsenal...Ill.
Fort Screven.....Ga.
Fort Ringold.....Tex.
Fort Thomas.....Ky.
Watervliet Arsenal.N. Y.
Fort Washington....Md.

Culex melanurus. Coquillett.

Fort Monroe.....Va.
New York Harbor. .N. Y.
Washington B'cks..D. C.
Fort Strong.....Mass.
Fort Williams.....Me.

*Culex (?) signifer.** Coquillett.

Augusta Arsenal....Ga.
Benecia Barracks..Cal.

Tæniorhynchus perturbans. Walker.

Augusta Arsenal....Ga.
Fort Ethan Allen.....Ver.
Fort Hancock.....N. J.
Maryland
Fort Morgan.....Ala.
Fort Sheridan.....Ill.
Fort Snelling.....Minn.
Westlawn Cem.....Ohio.
Fort DuPont.....Del.
Fort Fremont.....S. C.
Fort Logan H. Roots.Ark.
Massachusetts
New-York
Fort St. Philip.....La.
Fort Williams.....Me.
Washington B'cks..D. C.

Tæniorhynchus sierrensis. n. sp. Ludlow.

Montana
Washington
Sequoia Nat. Park..Cal.
Fort Washakie.....Wyo.

Tæniorhynchus varipalpus. Coquillett.(?)

Fort Columbia.....Wash.

Melanoconion atratus. Theobald.

Fort Brown.....Tex.
Fort Logan H. Roots..Ark.
Fort Fremont.....S. C.
Rock Is. Arsenal...Ill.

*Was originally described as a *Stegomyia* from which the head and scutellar scales exclude it,—neither does it belong to *Culex* as restricted by Theobald.

Melanoconion humilis. Theobald.

Fort Fremont.....S. C.
Fort Logan.....Colo.
Texas
Key West B'cks....Fla.
Camp McKinley. Hawaii
Fort Thomas.....Ky.

Melanoconion indecorabilis. Theobald.

Fort Screven.....Ga.

Finlaya nigra. n sp. Ludlow

Rock Is. Arsenal...Ill.

ADEOMYINA.

Uranotænia saphirina. Osten-Sacken.

Fort Barrancas.....Fla.

Besides the three new species given in the list (which were described within the year) there still remain a couple of very variable forms, apparently new, which have not yet been satisfactorily placed.

OBSERVATIONS ON THE USE OF THE *X*-RAY IN THE TREATMENT OF CERTAIN DISEASES OF THE SKIN.

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At the time an *x*-ray outfit was installed at the New York Skin and Cancer Hospital, radiotherapy, as applied to cutaneous affections, was still in the experimental stage, and probably most of the diseases known to the dermatologist received a goodly share of the would-be universal remedy. At that time it was thought that the *x*-ray would turn out to be a *sine qua non* to every dermatologist in the country. Diseases which had, heretofore, withstood many forms of treatment, as well as those which could be readily cured by medicinal remedies, were recklessly and indiscriminately offered up to the mercies of the *x*-ray. A knowledge of the proper technique in the treatment of lesions of the skin and of its appendages was very meager—perhaps *nil* in the greater number of experimenters. Such a state of affairs was naturally bound to bring about unfavorable results, sooner or later; *x*-ray burns, some of trifling, more often of serious extent, were unpleasantly frequent; lawsuits were heard of from many sides; the profession began to look askance at this latest of remedies; the *x*-ray began to be handled, figuratively and literally, "with gloved hands."

Scores of American and European writers published reports of remarkable, sometimes astounding cures, by means of the new therapy. To put these reports to the test, to sift out fact from fiction, it was decided to complete the armamentarium of the hospital by the installation of an *x*-ray apparatus. So great has been the progress in radiotherapy within the last few years that in the treatment of skin-diseases, as in other branches of medicine, the experimental stage has given place to firmly-fixed methods of treatment. Not only has the technique been placed on a firmer basis, but, of equal importance, the cutaneous affections actually suitable for radiotherapy, have finally been collated and separted from the host of other diseases to which the human skin is liable.

At the Skin and Cancer Hospital one has ample opportunity to observe a multitude of skin-diseases, many of which are undoubtedly benefited, and most readily healed by means of the *x*-ray. It may be well to state that those diseases which we know are amenable to the medicinal and mechanical methods of treatment have been, with few exceptions, excluded from the hospital's *x*-ray clinics. Such lesions, for example, as acne, psoriasis, seborrhoic dermatitis—cases which, when properly treated, should yield to the physician's efforts—are not included in the list of dermatoses appropriate for radiotherapy. Needless to say, therefore, that a patient with such a lesion as an epithelioma of the cheek or of the forehead which can be readily and thoroughly removed in a short space of time by the surgeon is treated in the surgical, not in the *x*-ray department, of the hospital.

It is not my purpose to submit any data concerning the cases in question, nor to discuss the technique of *x*-ray exposures in diseases of the skin. Successful results can certainly not be obtained by men who have had no special training in dermatology; a certain amount of clinical experience in the handling of various forms of skin-diseases, whereby one is enabled to compare the various methods of treatment, and to draw conclusions therefrom, is essential in every radiotherapeutist. Caution, it must be said, should be the watchword of all physicians who make use of the ray. Unless a certain amount of care is exercised in the application of each exposure, and unless the effect of each séance is carefully noted, very unpleasant and obstinate burns are apt to follow the administration of this powerful remedy.

Among the most rebellious affections with which the physician has to deal, two vegetable-parasitic diseases, *ringworm* and *favus,* rank prominently as examples wherein the employment of the *x*-ray has shown brilliant results. It matters not whether the cure of these diseases is brought about through the direct destruction of the fungus, or whether the depilation following a variable number of exposures is the dominant factor; the fact remains that in cases of *favus* of the scalp, which have been unsuccessfully treated for a period extending over five years; and in cases of *tinea tonsurans* which have shown but slight, if any improvement after two years of faithful treatment, the effects of *x*-ray exposures administered during periods ranging from five to fifteen weeks have always been decidedly satisfactory. A case is pronounced "cured" when, after repeated microscopical examinations, no trace of the fungus can be discovered. This applies with equal force to disease on other portions of the hairy skin—*tinea barbæ, tinea cruris.* Many are the cases of "barber's itch" which have resisted the most painstaking treatment by lotions, pastes, and salves, clearing up in a remarkable manner after a dozen exposures to the *x*-ray.

All cases of ringworm and favus treated within the hospital are brought to the dispensary at least once a month, when a microscopical search for spores is made should any suspicious spots present themselves in areas previously diseased. Of the cases of favus and ringworm of the scalp which have been discharged as cured not one showed recurrences after a lapse of one to six months; of the cases of *tinea barbæ,* all of which are treated in the out-patient department, about one-third showed recurrences, usually of trifling extent, after a period of three to six weeks following the last exposure. This may be due to the fact that the amount of care bestowed out-patient adults cannot equal that given to the indoor cases.

Closely allied, in its clinical behavior, to *tinea barbæ,* is the so-called non-parasitic sycosis, more properly called *sycosis staphylogenes.* Many of these cases of sycosis, and of simple folliculitis of the bearded region, can be cured by comparatively few

exposure to the *x*-ray. In this class of cases it is not at all necessary to prolong the treatment up to the point of depilation, as cases frequently get well before the hair begins to fall out, and even before the slightest erythema presents itself.

In this connection, it may be worth mentioning the cases of "ingrowing hairs" frequently observed on the neck of young men who use the razor. In this condition, it seems that the obliquity of the hair follicle causes the hair to curl in on itself, setting up an inflammation, followed by a postulation in each affected follicle. If one loop of such a hair is caught with the point of a needle and drawn out it will often bring forth a spiral of hair, between one and two inches in length, more or less covered with a film of pus. Nothing in the line of local treatment can approach the *x*-ray in the cure of this anomaly of hair-growth.

In *hypertrichosis,* *x*-ray treatment has not given as good results as might be expected. Although persistent and repeated exposures will ultimately cause a permanent alopecia in the affected area, it has been found that the defluvium occurring after a series of exposures is only transient, and that, as the hair grows again, it is necessary to reexpose the patient to a number of courses before the desired result is arrived at. This procedure carries with it the risk of setting up an inflammation of the skin, ranging from a slight erythema to an intense dermatitis, and even in cases in which no unpleasant inflammatory reaction occurs, the oft-repeated exposures frequently cause the skin to assume a peculiar dry, glazed and atrophic appearance, giving the patient more discomfort and less peace of mind than the condition for which she sought relief.

Lupus vulgaris fortunately is a comparatively infrequent disease in this country, and the number of patients, most of them foreign-born, applying for treatment at this hospital, is insignificant when compared to the cases seen at the British and Continental hospitals.

Patients appear at the clinic presenting comparatively recent and superficial lesions, and involving an area ranging in extent from the size of a pea to that of a silver dollar; it seems irrational to consign such cases to the tedious and time-consuming *x*-ray exposures; it is preferable to excise or curette the lesion in one sitting, should the patient consent to the procedure, and in selected cases, to follow this up with a short course of *x*-radiation. Here, as in other diseases, the administration of internal remedies, directed against the invasion and multiplication of the tubercle bacillus, should never be neglected.

Again, there are patients, usually adults, with large, infiltrated, partially cicatrized and ulcerated areas of the disease upon the face and neck, sometimes also upon the limbs and trunk, many of whom have been previously treated by the numerous methods which have from time to time been advocated for the eradication of this disfiguring malady; these various topical methods are all more or less painful, and the cosmetic effect in the majority of cases, is anything but satisfactory. It is especially in these old and inveterate cases of the disease, in which radiotherapy, all things considered, is probably the most satisfactory method of treatment at our disposal. Here, also, it is frequently advisable to employ supplemental operative measures, such as boring, scraping, and cauterizing, in conjunction with energetic raying, so as to eradicate the disease as rapidly as possible. In children, where most of the operative measures are frequently impossible, and in patients in whom the avoidance of causing pain is a desideratum, the *x*-ray offers us the treatment of choice. Besides having the advantage of being painless, the result of treatment is a smooth, white, pliable scar, causing less disfigurement than any of the operative methods in vogue at the present time.

Although the actinic rays are considered to be superior, in some respects, to the *x*-rays in the treatment of lupus, the expense connected with the installation and maintenance of a Finsen apparatus and the infrequency of lupus vulgaris in the United States prevent this mode of treatment from being employed as commonly in America as it is in European cities. In some cases, the ultra-violet hand-lamp is used to advantage, but on the whole the *x*-ray has been found to have a wider range of usefulness, especially in cases which cannot be conveniently dehematized before the application of the ultra-violet ray. For example, in cases of lupus of the face, where the septum of the nose is involved, and in lupus of the ear, where the dehematization by means of pressure is impracticable on account of the uneven surface of the helix of the ear, *x*-radiation is undoubtedly the best remedy at our command.

Although radiotherapy undoubtedly exerts a beneficial effect upon *erythematous lupus,* the results obtained in the treatment of this disease by means of the *x*-ray are in no way comparable to those attained in lupus vulgaris. The "*x*-ray list" at this hospital, does not include lupus erythematosus, as it is believed that more satisfactory results are obtained by the employment of local operative and medicinal measures, combined with the various constitutional remedies appropriate to each patient. In a few instances, the ultra-violet iron-electrode hand-lamp has proved to be serviceable, but cured cases have not been recorded following the use of this instrument. Within recent years excellent results have been reported in erythematous lupus treated by means of high-frequency currents.

In several cases of *tuberculosis verrucosa cutis,* where operative measures were refused by the patients, the *x*-ray was applied with promising results in all, and with an apparent cure in one case. It is, however, preferable to treat these lesions on surgical principles, and, if deemed advisable, to ray the diseased area after it has been removed as thoroughly as possible by operative procedures.

In the treatment of *keloid,* *x*-radiation gives better results than any agent employed heretofore. For the small lesions frequently seen upon the chest and arms, the *x*-ray seems to be a specific. Energetic and persistent raying of these tumors will, in time, cause a complete disappearance of the growth, leaving a smooth white scar in the site of the keloid. It it sometimes necessary to push the exposures up to the point of ulceration; when the ulcer heals, and the scab drops off, a large portion of the tumor will be found to have disappeared. In the large keloids of the face, neck, and chest, the *x*-ray causes a decided softening and diminution in the size of the tumor-masses; where pain exists, *x*-radiation frequently alleviates this symptom. In the extensive, diffuse keloidal conditions following burns, the results have been unsuccessful.

The *x*-ray has shown good results in *keratosis palmaris et plantaris.* Several cases here were treated with strong salicylic acid plasters applied to the palm and sole of one side, while the *x*-ray was applied to the palm and sole of the other side. Comparing the two methods, radiotherapy showed much better results; the treatment causes no inconvenience, the effect is more lasting, and the necessity of having the hands covered with plasters and bandages is eliminated.

There are cases of chronic, indurated *eczema* affecting a part or the whole of the skin, and accompanied by severe itching which are very rebellious to

the common methods of treatment; such cases of inveterate eczema, as well as cases of *pityriasis rubra*, and the hypertrophic form of *lichen planus*, react very favorably to *x*-radiation: the pruritus disappears, the skin is softened, the induration and infiltration is lessened, the joints become limber and the general health of the patient improves markedly.

It should always be borne in mind, however, that in order to achieve the best results the proper internal and external adjuvant treatment should be carried out in all cases, and not to depend too much upon the *x*-ray. It cannot be too strongly emphasized that many of the rebellious diseases with which the dermatologist has to contend are due chiefly to errors of metabolism—that is, they are constitutional diseases with cutaneous manifestations; how obviously inconsistent it would be, therefore, to attempt the cure of a skin-disease due to systemic derangement by means of radiotherapy alone.

Since the advent of radiotherapy, the gloomy prognosis of *mycosis fungoides* has been materially altered. Although it is one of the rarest of cutaneous affections, recent literature abounds with a suspiciously large number of reported "cures" of this fatal malady. That the *x*-ray exerts a decidedly beneficial influence upon the disease there is no doubt. The hospital has had under *x*-ray treatment four cases of *mycosis fungoides;* two of these have died of nephritis and exhaustion: the other two are still under treatment, and apparently are progressing favorably. These patients showed marked subjective and objective improvement as soon as the exposures were commenced: the pruritus was relieved, tumors flattened and disappeared, ulcers healed up, weeping and indurated eczematous patches gave place to apparently sound skin, and the general health of the patients improved progressively. Despite these promising results, however, recurrences appeared in three of the four cases within a month after the cessation of the treatment. Evidently the full value of radiotherapy in *mycosis fungoides* can not be properly judged from the small number of cases treated here up to the present time.

Epithelioma of the skin has the distinction of receiving more attention in connection with radiotherapy than probably any other cutaneous lesion. Whether this distinction is really justified is a question which has brought out considerable differences of opinion among physicians who have had experience in this line of work.

A certain percentage of cases seems to derive no benefit whatever from *x*-radiation, while not a few actually become more extensive and intractable after a number of exposures have been administered; but the great majority of cutaneous epitheliomata will show most marked improvement, frequently amounting to a complete cure, after having been submitted to a variable number of exposures. In epithelioma, as in many other cutaneous lesions, it is the recent, superficial, non-extensive growth which will yield most favorably to the influence of the *x*-ray; many cases will clear up completely within a comparatively short space of time, with a cosmetic result leaving nothing to be desired; in these, the lesion is replaced by a smooth scar, usually of lighter color than the surrounding skin; in other cases, the scar is traversed by numerous telangiectases; or again, appearing so much like the normal skin that the site of the lesion can scarcely be distinguished.

The patients with malignant lesions of the skin come under two classes: those who refuse operative treatment, and those in whom surgical treatment is out of the question, on account of the extent or inaccessibility of the disease; in both these classes of patients, radiotherapy is undoubtedly the ideal mode of treatment, frequently showing surprisingly good results. Recurrences, however, either within the scar, or at its periphery, are of frequent occurrence; these recurrences will disappear upon a repetition of the exposures, but whether they will or will not return is a question which cannot, at the present time, be satisfactorily answered. It is not good policy to consign all epitheliomata to the *x*-ray, regardless of extent, location, and duration; it is the rule, at this hospital, to transfer to the surgical division all cases which appear suitable for a radical excision; after the surgeon has removed as much of the diseased area as is possible, recourse may be had to the *x*-ray, to destroy outlying cells and thus to prevent a possible recurrence in or about the scar.

In *rodent ulcer*, a disease which frequently resists all other forms of treatment, radiotherapy has shown very promising results; these cases, however, are far more intractable than simple epitheliomata, and, notwithstanding the fact that the discharge, the odor, and the pain may disappear after a comparatively small number of exposures, recurrences in or near the scar are very frequent and should be persistently reexposed.

A case of *psorospermosis follicularis* (Darier's disease) was given *x*-ray treatment, after other methods of treatment proved futile; the patient, whose feet were diseased to such an extent that walking caused much suffering, was enabled to perform her household duties without discomfort, after having received about thirty exposures.

A case of *idiopathic multiple hemorrhagic sarcoma* is now under treatment at the hospital. After only six exposures, of ten minutes' duration, to each extremity, the edema has lessened, infiltrated patches have softened, and bluish-red and violaceous patches of skin are beginning to turn pale and to take on a normal appearance. No internal treatment is being administered.

The conclusions to be drawn from the observation of the patients in the *x*-ray department of this hospital are as follows:

(1) The *x*-ray will cure ringworm and favus of the hairy skin more rapidly and reliably than any other method of treatment; the advantages of the method are, that it is painless, harmless when properly used, and thorough, and that it cuts down the expense incurred by the city in the treatment and care of these patients to a very considerable extent.

(2) Hypertrichosis should be treated with electrolysis, not with the *x*-ray.

(3) The *x*-ray gives very satisfactory results in the various forms of cutaneous tuberculosis; in keloid, in keratoses, in infiltrated patches of chronic eczema, *lichen planus, pityriasis rubra;* in the tubercles, ulcers, and tumor-masses of *mycosis fungoides*, psorospermosis and sarcoma.

(4) *x*-radiation relieves pruritus, burning, tingling, and pain; it decreases the discharge and foul odors of various dermatoses, often causing them to disappear completely.

(5) In selected cases, radiotherapy is the ideal agent in the treatment of epithelioma and rodent ulcer.

238 East Sixtieth Street.

Hygiene of Spanish Churches.—The Alcalde of Madrid, who, at least in sanitary matters, is decidedly progressive, has issued an order for the disinfection of churches. This order, which is based on a report from the director of the municipal laboratory, prescribes that all the churches of the Spanish capital are to be swept out daily with sawdust moistened with a solution of copper sulphate. All the fittings and furniture of the churches—chairs, benches, confessional, holy water fonts, etc.—are to be disinfected every day.—*British Medical Journal.*

EARACHE.

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The recent observation of a number of fatal cases of acute otitis media, that at first were treated in a haphazard manner by the family physician, has led me to sound a note of warning in regard to earache, that this painful symptom may receive the full attention that its seriousness deserves. No pain is capable of producing greater suffering than a severe earache, even child-bearing is less painful, and no disease is more dangerous than that of which earache is the principal symptom.

Earache is regarded far too lightly by many physicians, and in many of the neglected cases, either the termination is fatal or the hearing becomes impaired, or a chronic running ear is developed. It is wrong to regard an earache simply as a painful symptom that usually passes off as soon as the drumhead bursts. Rightly considered, it is the sign of a dangerous infection that may impair and even destroy the sense of hearing, and may even cost the very life of the sufferer.

Even to this day, most mothers look upon an earache in a child as being one of the troubles that any child may get, like measles, scarlet fever, or chickenpox, and nothing is done to relieve the trouble save to drop some laudanum or warm sweet oil into the ear. Fortunately, a child does not suffer long, for the thin drum-head soon yields to the pressure of the inflammatory exudate and the fluid escapes from the ear. Not infrequently earache in an infant is not recognized as such. The suffering is usually ascribed to the teeth, and the error is not discovered until the ear begins to discharge.

In most instances the let-alone policy of treating infantile ear troubles is attended by no bad results, but in certain cases, through lack of attention, the condition becomes serious and speedy intervention is demanded to save the hearing and perhaps the life of the patient. In former years many mothers were told that their child would outgrow an ear trouble, and they were advised to let nature take its course. That such advice is harmful, and even dangerous, is apparent to every one who treats the ear.

When we stop to think that in civilized life one person in every three has some defect in hearing, and that most of these defects date from infancy, we begin to understand the importance of treating the ears of children at the outset of the trouble. The entire surface of the middle ear, if spread out, would not be larger than a silver quarter; enclosing a space the size of a dried pea, yet this small cavity is the most useful, and at the same time the most vulnerable one of its size in the entire body, because of its close proximity to the brain and to the internal ear.

For the production of an earache two things are essential: an inflamed middle ear and an exudate that presses upon the drumhead. Normally, the middle ear is an aseptic space and its mucous lining exerts a protective influence and guards against infection. As soon, however, as there is a breach in its surface it ceases to protect; on the contrary, it favors the development of pathogenic organisms. In almost every instance the middle ear becomes diseased through the passage of infectious matter from the nose, at a time when the condition in the middle ear is abnormal.

Pathogenic germs are constant inhabitants of the nose and nasopharynx, even in health, and it requires no stretch of imagination to assume that through an expiratory blast, such as coughing, or blowing the nose, they can be forced through the inflamed eustachian tube and thus enter the ear. When sterile water is forced into the healthy middle ear by means of a eustachian catheter, no symptoms are produced other than those of a mechanical obstruction—deafness and a feeling of fullness in the ear, which gradually pass away when the fluid is drained off by the eustachian tube. Even fluid that contains infectious material fails to produce disease so long as the mucous membrane is intact. When, however, the vitality of the middle ear has been weakened by disease, the introduction of any fluid into the middle ear, even sterile water, seldom fails to set up a pathological condition.

Acute middle ear trouble usually occurs in the course of an acute infectious disease, such as scarlet fever, measles, pneumonia or grip. Scarlet fever and measles are accountable for most ear trouble in children, while grip is the prevailing cause among adults. The pernicious nasal douche and sea bathing also claim a certain number of victims, through the suction of water into the nose and into the tubes.

In scarlet fever one child out of every three develops otitis, and of half this number the affection is bilateral. When we consider that 20 per cent. of acquired deafness is due to scarlet fever and that most running ears can be traced to it, the importance of prompt measures in dealing with an otitis from this cause becomes apparent.

It was not until the severe epidemic of influenza in 1890 that our attention was called to the frequency with which otitis occurs in grip, and ever since that time the grip ear has been a common observation in the changeable weather of the spring and fall months. The otitis of influenza must be carefully watched, since the mastoid is implicated oftener than in the otitis following other diseases.

When, in the course of a febrile disease, an otitis arises, it usually begins towards the decline of the fever, when the vessels become relaxed and the mucous membrane pours out an inflammatory exudate. This occurs in the second week of influenza and measles and the third week of scarlet fever, the time when the physical condition is poor and the vitality of the ear enfeebled.

During an attack of any acute fever, involving the upper air tract, the cavities of the ear, in common with those of the nose and throat, become congested, and when the hyperemia resolves, an exudate is thrown out by the relaxed mucous membrane. Under ordinary circumstances the secretion from the middle ear is drained off by the eustachian tube and passes to the nose. When, however, this tube is inflamed and obstructed, the exudate cannot escape and soon fills the middle ear and mastoid cells. As the fluid accumulates, the pressure in the middle ear increases, and finally the drumhead bursts. In most instances the escape of the fluid marks the cessation of the pain and other inflammatory symptoms. Left to itself, the drum-head usually ruptures within twenty-four hours in children and between the third and fifth day in adults. In certain cases, however, the drumhead is firm and does not yield to the pressure of the exudate. When this occurs the fluid usually becomes infected by pyogenic organisms, and the infection may invade the mastoid cells and may even attack the lateral sinus. In very young children an infected exudate in the middle ear is particularly dangerous, because of the ease with which it destroys the thin shell of bone that separates the middle ear from the brain.

In children the mastoid process contains but one large cell, the antrum, and when it becomes diseased the pus frequently penetrates its bony cortex

and produces the well-known periosteal abscess, so common in children, and for the relief of which Wilde's incision was devised. It is a mistake to wait for a mastoid abscess to become mature, in the hope that it will evacuate itself, for frequently, even in children, the inner wall of the mastoid process becomes eroded, instead of the outer, and the pus enters the brain cavity, after which there is no certainty of a successful issue from operative procedure.

Sometimes mastoiditis occurs in spite of every precaution and an early and free incision into the drumhead. This is when the middle ear has been shut off from the mastoid cells by inflammatory adhesions so that the pus from the cells cannot escape into the middle ear. Such a condition is present when there is a bulging of Shrapnell's membrane and a sinking of the posterior superior canal wall. At times the bulging of Shrapnell's membrane is so pronounced that it hangs down like a polyp. In this class of cases, mastoid and even cranial involvement may occur in spite of precautionary measures.

The severity of most attacks of acute otitis depends largely upon the physical condition of the sufferer and the virulence of the infection. At one time it was thought that the most constant factor in fatal cases of otitis was the streptococcus, but further research has shown that no particular microbe is accountable for all severe infections. In those cases of otitis in which the exudate does not become infected, the drumhead may remain intact and the exudate escape by way of the tubes. Ankylosis of the ossicles from fibrous adhesions is sometimes observed in these cases when the exudate passes off.

Recurring attacks of otitis are usually observed in individuals who suffer from a disorder in the nose or throat. In children adenoids and tonsils are responsible for most recurring earaches. In adults the trouble lies in the turbinates or in the septum. Such persons readily take cold, and, with each cold, deafness and earache are experienced. These are the cases in which the underlying nasal disorder must first be cured before we can hope to benefit the otitis.

An acute attack of middle-ear disease usually begins with fever, not always. The ear throbs and feels full; and soon a sharp pain is felt, which is worse at night and when lying down. Dizziness, nausea, and annoying noises are also complained of. The ear is tender to the touch, and every movement of the head intensifies the pain. The canal of the ear is swollen and the hearing is poor. These symptoms continue to increase until the fluid escapes, then they quickly subside, providing the drainage is good. In young children the symptoms of an acute otitis may be obscure and misleading. It begins with a high fever, 103° or 104°, and perhaps with convulsions. The child is fretful, refuses to nurse or to lie upon the diseased ear, and puts its hand to the ear and rubs it. When the ear is accidentally touched, it utters a sharp scream, like a child suffering from meningitis.

The only satisfactory way to find out the true condition of the middle ear, especially in children, is by means of the ear speculum. All other methods are incomplete and misleading. In an acute otitis media, the drumhead, instead of being pearl-gray in color, is inflamed, and bulges at some point, usually at the posterior inferior quadrant. The landmarks on the drumhead are usually obliterated, excepting the short process of the malleus. Occasionally a whitish deposit of cast-off epithelium on the drumhead hides the inflamed surface, and when the deposit is removed with cotton, the true condition is revealed.

By placing a diagnostic tube into one's own ear and gently inflating the diseased ear of the patient, bubbles of air can be heard forcing their way through the fluid in the middle ear. A tuning fork placed upon the mastoid process of the diseased ear can be heard by the patient better than when placed over the mastoid process of the sound ear,—due to the better sound-conducting properties of the fluid medium.

As soon as a person complains of a severe earache we must bear in mind that we have to deal with a septic process, which is apt to assume dangerous proportions if allowed to go unchecked. The sufferer should be kept quiet, put to bed and placed upon a fluid diet, and in other ways treated as we would treat a patient with a high fever. The bowels are to be kept open, and a single dose of morphine given to insure rest and comfort. Dry heat or else an ice-bag can be applied to the ear. The former is the more acceptable to most patients. Every three hours the ear should be gently irrigated with a hot solution of bichloride 1 to 5,000, after which a few drops of a 12 per cent. solution of carboglycerin can be instilled. The pernicious practice of putting an onion, an oil, or a tincture into the external meatus should be discouraged, since it is not only useless, but harmful and uncleanly as well.

Under no consideration should a person be allowed to suffer longer than twenty-four hours. If the pain continues, and the drumhead is inflamed and distended, palliative measures are worse than useless, and any attempt to abort the inflammation by means other than surgical is dangerous, and valuable time is lost in so doing. A bulging drumhead should be treated in the same way as a septic formation in any other place. It should be freely incised, rather than simply punctured or allowed to break. This procedure not only gives prompt relief, but also prevents dangerous complications in most instances, and facilitates the reparative process. No operation in surgery is attended by greater relief and benefit than that which evacuates a distended middle ear, when properly done.

By administering a hypodermic injection of morphia or by giving a whiff of chloroform or nitrous oxide, the drumhead can be freely incised with little or no pain. The utmost care and cleanliness should be exercised in doing so, lest a mild infection be converted into a more serious one from without.

During the progress of a middle-ear trouble we must be on guard for symptoms of mastoid involvement. This is shown by a sagging of the posterior superior canal wall and tenderness over the mastoid process. The sagging of the canal wall is due to the detachment of the periosteum, and occurs only when pus has invaded the mastoid cells.

317 East Thirteenth Street.

Clinical and Etiological Notes on Paratyphoid Infections.—Sacquépée and Chevrel present the following conclusions: The most frequent cause of paratyphoid infections is the ingestion of contaminated drinking water. Various instances demonstrate this fact—the epidemics at Tours and at Fontevrault. It has sometimes been suspected that the infection could be traced to meat. Paratyphoid fever occurs most often during the estivo-autumnal season; it is generally more severe in the autumn. The time of inoculation varies from about five to fifteen days. There are two ordinary clinical types: one is severe and simulates enteric fever. Some of the most marked clinical symptoms of this type are sudden onset, hypertrophy of the liver, and constipation; the other, a mild form, is characterized by febrile gastric disorders. The diagnosis can be made absolutely only by means of laboratory investigations.—*Gazette des Hopitaux Civils et Militaires.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

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PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, January 20, 1906.

TISSUE SELECTION.

THE selective quality of the tissues is a subject which affords a most interesting and helpful study in the application of remedial agents for disease. Fränkel, in his highly interesting work, Arzneimittel-Synthese, declares that it is not alone a question of closely allied chemical relations, but ofttimes one of physiological conditions. Chloroform, for instance, tends to accumulate in the red blood corpuscles, this being due to the facility with which chloroform mixes with lecithin. Myelin or the medullary sheath of the nerve behaves in the same manner in the presence of fatty substances. The hydrocarbons, ether, and sulfon-combinations probably act in the same manner. Acids, bases, alcohols, and phenols may readily form chemical combinations with different protoplasmic groups. Fuchsin may be extracted from the kidney by alcohol. Certain tissues appropriate poisons from the blood, just as wood fiber will abstract coloring matter, such as picric acid, form a solution, however weak the solution. One theory in explanation of this fact is that the coloring matter in the fiber is not in a solid state but still in solution. Different fibers and different tissues take different colors, exerting a selective action upon the staining solution in which they are immersed. In the cells of various organs are different chemical groups, while individual substances have different capacities for selection according as they are alkaline, neutral, or acid media. These individual substances are not taken up by the protoplasms of the cells but by the intermediate substances. Substances with tertiary nitrogen which possess little or no poisonous action, may be transformed in the tissues into powerfully poisonous substances by reduction, while the same poison will most rapidly destroy that form of protoplasm which develops the greatest functional activity. The spinal cord possesses a marked selective force for strychnine. If we knew the cause of this selective force in the tissue, or were able to recognize the chemical groups in the nerve elements of the cord which arrest and retain the strychnine, as it passes through the blood vessels of the cord; if we could recognize the groups in the strychnine which are retained by the cells of the cord, we would be able to construct through synthesis substances which would only adhere (be anchored) to the cord, where they would be subject to reactions and thus produce active groups at will.

We know that definite groups of atoms in definite positions either act of themselves or produce their activity by being incorporated into other groups. Definite groupings of atoms incorporated in physiologically active substances may arrest that action entirely, weaken it, or give it other properties. The same substance may have both physiological and pathological properties. Alkaloids produce their effects in small doses. That they, however, possess selective affinity for certain tissues we know; they are rapidly excreted to a large extent, but a certain portion is retained and rendered ineffective by the liver, while traces are recognizable in many other tissues. Thus is proven the statement that the portion which produces the action is an extremely small fraction of the dose. This hypothesis would prove that the missing fraction of the alkaloid undergoes a transformation which would account for the action of the drug and a relationship between constitution and action as well as one between action and chemical transformation.

Certain drugs offer more or less resistance; when this resistance is present the drug is said to be to a greater or less degree inert. This resistance of specific drugs which act upon individual tissues appears to furnish the basis through which the selective properties of tissues are made possible; for if a drug react with all characters of protoplasm, specific results will be found impossible, the very degree of resistance of the tissues making it possible for small doses of certain substances to exert a specific action upon particular tissues, while others are not affected. Emil Fischer declares that a definite configuration is necessary for a sugar molecule in order to influence the action of particular kinds of yeast, and that the fermenting portion of the yeast molecule is related to the fermented sugar molecule as is a key to the lock. We can apply this simile to other substances which have a selective action and are decomposed by exerting it, all other tissues being unaffected.

For the production of action the concurrence of several factors is requisite, and an effective substance without customary action can be made to have such an action. It is necessary for its end-group to come in contact with organs or tissues to determine this action. The end-group which seems to anchor the substance, may or may not exert some action. The basic substance may be only a vehicle for the active atoms, which may occupy such a stereochemic position as will enable them to unite chemically with some definite group of atoms in the tissues.

This theory may be shown in that the physiological action is produced as a rule by the main portion of the molecule, by some lateral chain in the same, or by the anchoring atoms. We must therefore distinguish between two groups in every active substance. The lateral chain or residue, which unites chemically with groups of atoms in the tissues, thereby anchoring the molecule, represents one group; the other consists of those atoms which produce the physiological action. Both the anchoring and active groups may have the same grouping of atoms. If the anchoring group is closed or altered, another than the original physiological action may be exhibited, provided another anchoring group is present. This group may have relations with some other organ or tissue and be able to determine a physiological action of another character; or the entire molecule may be so modified by the change as to influence a different action. This will occur when there are several points of anchorage in a given

molecule, with several groups having a different action. The anchoring group having chemical reactivity controls the situation, or it may happen that anchorage is determined by oxidative alteration of the chemical substances.

PROPRIETARY REMEDIES.

At a meeting of one of the sections of the American Medical Association in Portland, last July, Dr. Frank Billings of Chicago presented a communication, entitled, "The Secret Nostrum Evil," recently published in a number of the State journals, in which he warns against the "menace to the welfare of the people and to the best interests of scientific medicine" contained in the flood of patent medicines and proprietary remedies now offered to the profession. He distinguishes between the patented remedies and those protected by a copyright or trademark. Concerning the former he says: "These preparations are ethical, in that they are not secret, for any one for a small fee may obtain from the patent office of the government a copy of the description of the process of manufacture and the actual chemical composition of any such patented drug or remedy." Of the copyright proprietary remedies he says: "Medicines so prepared that the busy physican could easily dispense them found a certain class of doctors eager to use them. The indications for use appeared on the label or in the accompanying literature. Tonics, blood and tissue builders, emenagogues (*sic*), pain relievers, febrifuges, laxatives, calculi dissolvers, soporifics, bile promoters, heart tonics, cures for Bright's disease, etc., have appeared in countless number, and some remedies offered are confidently presented as cures for not one but half a dozen diseases or symptoms complex."

There is an ethical distinction here without a difference. If the physician is chemist enough to understand the significance of the chemical symbols and the extremely technical details of manufacture of the patented drugs he surely is competent to analyze any of the secret proprietary mixtures and so to determine for himself their composition. To the physician who is not a chemist one class of remedies is as secret as the other. The "literature" of the manufacturers of one kind is just as extravagant in its claims as—and no more so than—that of the other, and the condemnation of one class applies with equal force to the other. The indications for use appear in the "literature" of the patented drug as they do in that of the proprietary remedy. For example, the difference in the matter of "ethics" between a well-advertised intestinal antiseptic and a certain popular proprietary tonic is as that 'twixt tweedledum and tweedledee. In each case the proof of the pudding is in the eating, and the average physician has no more definite guarantee of the therapeutic value of the one than he has of that of the other; in each case he has to rely upon the "literature" and his own experience. If he follows Dr. Billings' advice to adhere to the pharmacopeial preparation he will discard both, though the tonic, if the manufacturer had the wisdom to publish its formula, would probably be found to be compounded of pharmacopeial drugs, while the other is not yet of the *élite*.

Of the objections to some of these remedies Dr. Billings says little that is new and much that is true, but the force of his argument is weakened by a lack of judicial calm. He condemns absolutely all mixtures of any sort, of known or unknown composition, and urges their rejection by the physician and the substitution for them of extemporaneous prescriptions. The grounds upon which this rejection of ready compounded mixtures is based are that their composition is unknown, or if the ingredients are published their proportions are kept secret, or if the ingredients and quantities are published there is no guarantee that the manufacturer is telling the truth, and finally that no ready-made mixture is suitable for every case of any disease. Regarding most of these objections there can be but one opinion. The physician wishes to know what drugs he prescribes and the proportions of each in the given dose of the mixture, and he should use his own judgment concerning the indications in each case, for it is a trite saying that the patient should be treated, not the disease.

The objection, which Billings makes by indirection, that the physician cannot rely upon the statements of the manufacturer regarding the composition of his remedies is one of too general application to be tenable, and applies with at least equal force to the use of extemporaneous formulas. The physician must trust somebody, for he cannot gather his own simples and stew them into nauseous draughts. If he cannot rely upon the word of the reputable manufacturing chemist regarding the composition of his product, no more can he put confidence in the integrity of the individual pharmacist. The sin of substitution is one of which much has been said, and that it exists there can be no doubt; but the culprit is as often the retail druggist as the wholesale manufacturer. In prescribing many drugs, such as the alkaloids, the physician—we venture to say even the writer of the article from which we have quoted—often calls for tablets rather than extemporaneous solutions, and not infrequently purchases them in quantity in the original package of the manufacturer. He trusts this manufacturer to prepare him a tablet containing a definite quantity of morphine and atropine, yet he is asked not to accept the word of the same manufacturer in the case of some other mixture purporting to contain certain less powerful drugs. This is an inconsistency that renders the argument ridiculous.

That what Dr. Billings tautologically calls "the secret nostrum evil" exists we would not deny, but the remedy is simple and does not call for philippics or hysterical condemnation of every non-pharmacopeial preparation. Physicians are not children, who must be watched by a careful nurse lest they burn their fingers with matches or get sick from licking the paint off their dolly's face. They know, or should know, what to prescribe for their patients, and those among them who are so lazy or so ignorant as to prescribe according to the directions contained in the "literature" put forth by the manufacturers of patent medicines and proprietary remedies will never be deterred from such a reprehensible practice by aspersions upon the integrity of all manufacturing chemists. Nor will the compounders of secret preparations be induced to publish their formulas by indiscriminate and intemperate condemnation of all proprietary remedies, secret or open. If they are assured that there is nothing to be gained by divulging their secret they are not likely to divulge

it. But we are convinced that Dr. Billings does not voice the general sentiment of the profession on this question. If the manufacturers were to publish their formulas—not only the ingredients but the exact proportions of each—their preparations would undoubtedly find a wider acceptance by scientific physicians. Many of these now refuse to use secret remedies, but they would prefer the more elegant preparations of the pharmaceutical chemists (were the ingredients known) to extemporaneous mixtures, whenever in their judgment they met the indications in the individual case.

Skoda's Centenary.

On December 11 a memorial meeting in honor of the centennial of Joseph Skoda's birth was held in Vienna, and on the same day a monument bearing his statue was unveiled in Pilsen, his birthplace. The son of an obscure locksmith, the child who in future years was almost to revolutionize the art of medical diagnosis was already, in his tenth year, contributing to his own support by acting as teacher to his less advanced schoolfellows, and his subsequent advance along the paths of education was attended by the greatest hardship. Those to whom his name recalls only its association with the peculiar tympany heard over lung compressed by fluid, as in some cases of pneumonia, do not realize to how great an extent the diagnostic methods of to-day depend on the illuminating investigations of Skoda, which promptly gave to Vienna a preeminent position in medical instruction. Although Hippocrates had indicated the use of the sense of hearing in diagnosis by describing the method of eliciting succussion in hydropneumothorax, auscultation remained an unexploited aid until Laennec was led to experiment in this direction, and finally to invent the stethoscope, by seeing children at play amuse themselves by applying one end of a stick to the ear while a comrade scratched the other end with a pin. Even after the stethoscope had come into use and Auenbrugger had developed the art of percussion, diagnosis by these aids was not advanced greatly beyond the confines of empiricism because these clinicians sought to connect each phenomenon elicited with a special disease, thus speedily creating a complexity of terminology and observation which was urgently in need of classification. Skoda, the first clinician to court instead of shunning the supreme test of the diagnosticians' acumen by the uncompromising revelations of the deadhouse, introduced the autopsy as a routine finale to fatal cases, and taking the post-mortem knife from the usually prejudiced medical attendant who had rarely been accustomed to wield it, secured impartial verdicts by placing it in the hands of a newly created officer, the prosector or pathologist. He then instituted his comparisons of the physical signs during life with the findings after death, and, discarding the restricted views of his predecessors, sought the explanation of the various auscultatory phenomena in the broad laws of physics that govern the same manifestations outside of the human body, and rendered possible the objectivity that is so highly desirable in diagnosis. Skoda, though Hungarian by birth, was the first German clinician to throw aside the convention of ages and deliver his lectures in German instead of in Latin. Many reports of his wonderful skill have been handed down; for example, his sense of touch is said to have been so highly trained that he constantly amazed his classes by diagnosticating complicated heart lesions by palpation alone. His activities were by no means limited to the field of thoracic disease, and he was one of the first to support Semmelweiss in that ill-starred observer's attempts to place the doctrine of puerperal infection in its proper light. Prof. v. Schrötter in his address delivered before the memorial meeting of the Viennese Medical Society warmly defended Skoda's memory against the allegation that he was a therapeutic nihilist, and stated that many improvements in treatment, such as the popularization of hypodermic medication and the abolition of the almost universal practice of venesection that then prevailed, were due to his genius. Skoda died in 1881, but in 1870, when he resigned his professorial chair, he said to v. Schrötter as if in review of his life work, "now it is the turn of the microscope and of chemistry," a prediction that certainly has been fulfilled.

The Control of River Noises.

A partial victory has been gained by Mrs. Isaac L. Rice in her determined fight for nocturnal quiet, in so far as the National Board of Steam Navigation has passed a resolution to restrict the blowing of whistles by river craft to the limits of actual necessity. This does not mean, however, that the cause has been won and that there is no further need for agitation. The tugboat captains are sturdy sinners and a simple admonition from the owners to keep quiet will not effect much in the way of a lasting reform unless it is backed up by the strong arm of the law. These little boats have enormous whistles, out of all proportion to their size, and when these are blown with a steam pressure of 150 to 200 pounds, the noise emitted is terrific and can often be heard across the entire island from one river to the other. As a well-known master of one of the Albany boats writes, from 80 to 90 per cent. of this whistling is nothing less than rowdyism, and so far from being necessary is actually dangerous, causing confusion of the lawful signals. So far as this noise disturbs the rest of the people of the city and prejudices the chances of recovery of the sick, its abatement is, or should be, legitimately within the province of the Board of Health, and if Commissioner Darlington has not the authority to deal with a nuisance of this nature, it should be given to him. Unless these disturbers of the peace are restrained by the officers of the law, there is little hope of relief for the sick in the municipal institutions or for other sufferers who live along the river front. The arrest and punishment of a few of the tugboat masters who are wont to call their crews from the saloons by soul-racking shrieks of their sirens, would soon convince them and their fellows that the sending of a messenger to bring back the deckhands is an equally effectual measure and one conducive to their own comfort as well as to that of the peaceful citizens of the town.

The Cartwright Lectures.

The three Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons of New York will be given this year on January 25 and 29 and February 2, by Baron K. Takaki, ex-Surgeon-General of the Imperial Japanese Navy. The subject of the lectures will be: "Military and Naval Sanitation: Experiences Drawn from the late Japan-Russia War." This will be the first complete and authoritative account of the Japanese Naval and Military Medical Organization given in this country, and, coming from the man who was chiefly instrumental in the establishment of that incomparable service, it promises to be of unusual interest. Dr. Takaki studied medicine at St. Thomas' Hospital, London, where he was graduated with high honors, passing also the examinations of the Royal Colleges

of Physicians and of Surgeons. While in England he made a very careful study of the medical department of the British Navy, and on his return to his native country devoted all his energies to the organization of the medical and sanitary system of the new Japanese Navy. He rose rapidly to the rank of Surgeon-General and continued in active duty until the close of the Japan-China war, when he was created a baron by the Emperor in recognition of his services, especially in freeing the navy from the scourge of beriberi. Dr. Takaki has also taken an active part in the reorganization of hospital methods in Japan, and has always been a strong supporter of the Red Cross, the great strength of the society in that country being largely the result of his encouragement and support.

News of the Week.

First Aid in Time of War.—President Roosevelt has appointed a board composed of medical officers of the army and navy to consider improvements in the matter of first-aid dressings and the advisability of the adoption of a uniform equipment in the medical departments of the army and the navy. The members of this board from the army are Col. Valery Havard, assistant surgeon-general, Capt. Charles Lynch, assistant surgeon and a member of the General Staff, and Capt. Carl R. Darnall, assistant surgeon, who is in charge of the field medical supply department in Washington. Those from the navy are Medical Director John C. Wise, commanding the Naval Medical School in Washington, Surgeon Charles F. Stokes, on duty at the Naval Museum of Hygiene and Medical School in Washington, and Surgeon William C. Braisted, on duty in the Bureau of Medicine and Surgery in Washington.

The Centennial Banquet of the State Society.—The banquet to be held during the Centennial meeting of the Medical Society of the State of New York, on Wednesday evening, January 31, will be a notable occasion. Among the guests who have signified their intention of being present are: Governor Higgins, Hon. Grover Cleveland, and Drs. William Osler, W. W. Keen, L. S. McMurtry, J. H. Musser, C. A. L. Reed, and Howard Kelly. The tickets, including wine, will cost $5, and, as the number is strictly limited to five hundred, applications should be made as early as possible to Dr. William J. Nellis, 210 State street, Albany, N. Y.

Bellevue Training School for Nurses.—The commencement exercises of the Bellevue Training School for Nurses were held January 9, when twenty-eight young women received their diplomas. It was announced that the sum of $50,000, which was raised by the board of managers after considerable effort for the purpose of building a new nurses' home, can now be devoted to the running expenses of the home, inasmuch as the Board of Estimate on December 27 decided that the new home should be built by the city.

For a Children's Bureau.—A bill has been presented to the Senate and referred to the Committee on Education and Labor, having for its object the establishment of a bureau to investigate and report upon all matters pertaining to the welfare of children and child life, and especially to investigate the questions of infant mortality, the birth rate, physical degeneracy, orphanage, juvenile delinquency and juvenile courts, desertion and illegitimacy, dangerous occupations, accidents, and diseases of children of the working classes. The bill provides for the establishment of the children's bureau, to be under the direction of the Secretary of the Interior, with a chief, at $5,000 salary, an assistant chief at $2,500, and a full complement of clerks.

Dental Examination of School Children.—An interesting report has been received from Joseph J. Brittain, United States Consul at Strassburg, Germany, in which he describes the success attending the establishment in that city of a dental clinic for school children. In 1902 the city opened this clinic for the care and treatment of the teeth of the children in the public schools, and to make such care and treatment compulsory. The children are treated free of cost and are given instruction in the care of the teeth and keeping them clean. Since the establishing of the Strassburg clinic similar ones have been opened in Darmstadt, Mulhausen, and other cities in Germany, and much interest is being aroused. At the Strassburg clinic 5,343 children were examined the first year and 2,666 received treatment. The third annual report, just published, states there were 12,691 visits to the clinic in 1904 and 6,282 children were treated, for whom 7,065 teeth were filled and 7,985 were extracted, and 4,382 other children had their teeth examined. The children are taught to clean their teeth three times daily, and especially before retiring. The dentist also instructs the children in the use of the toothbrush, each child receiving a brush for home use. Since the introduction of the treatment there has been a marked improvement in the general health of the public school children.

Columbus Academy of Medicine.—At the annual meeting of the Columbus Academy of Medicine the following officers were elected: *President,* Dr. James U. Barnhill; *Vice-President,* Dr. S. J. Goodman; *Secretary,* Dr. Chas. J. Shepard (reelected); *Treasurer,* Dr. William C. Davis (reelected); *Censor,* Dr. J. A. Frame, and *Delegate to the House of Delegates of the State Association,* Dr. J. H. J. Upham. The Executive Committee in its annual report urged the establishment of a permanent home for the Academy, including a reading-room and library, in which its members might enjoy the privacy and conveniences demanded by the character of their work, and by which it would more fittingly uphold the importance and dignity of the medical profession in the community. Dr. F. F. Lawrence, the retiring President, in appropriate remarks presented Dr. D. N. Kinsman, the first President of the Academy, with a beautiful gold-headed cane, the gift of his professional friends.

Tuberculous Cattle Killed.—On January 13 thirty-one high-grade Jersey cows were killed at a fertilizer factory in Rome, N. Y., on account of tuberculous infection. The animals, which had been owned by two dairymen, were condemned by Dr. William K. Kelly, chief veterinary of the State Agricultural Department. A few months ago forty-nine Jersey cattle were killed at Rome for the same reason. When the disease is found to be only local the owner receives from the State 60 per cent. of the value, and 40 per cent. when the disease is found to be general. Where no trace of the disease is found, a premium value is paid. The milk from one of the diseased herds was being sold in New York City at a high price.

University Students in Germany.—Recent figures seem to show a considerable increase in the number of students attending the twenty-one universities of Germany. The total number of matriculated students is now 42,390, as compared with 29,117 ten years ago. The University of Berlin has the largest total, the number of matriculated students being 8,081. Bonn has 2,908 and Heidelberg 1,443. The

faculty of law was the best attended, having 12,139 students, as compared with 4,975 a decade ago. A remarkable fact is the rapid, continuous decrease in the students of Protestant theology. Within the last decade these have decreased from 4,437 to 2,186, while the students in Catholic theology have increased from 1,079 to 1,680.

Longevity.—A colored woman alleged to be one hundred and thirty-five years of age died at the Home for Aged and Infirm Negroes in Philadelphia January 6. According to the statements of her relatives, she was born on November 14, 1770, in a settlement known as Frogtown, near Valley Forge, Penn. She often told of scenes in and about the camp of Washington's soldiers at Valley Forge in the Winter of 1777-8. As is usual in reported cases of extreme old age, she is said to have used tobacco all her life. From England comes the story that Henry Johnson of Grantham, the oldest acrobat in the United Kingdom, has just entered in his hundredth year, and is still lithe and active. He has lived during the reigns of five British sovereigns.

Hospital Saturday and Sunday Association.—At the annual meeting of this association, held on January 9, at the United Charities Building, all the old officers were reelected and Isaac Guggenheim was added to the Board of Trustees. It was announced that this year's collection promised to be the largest in the history of the association, and would probably exceed $100,000. Last year it was $92,000. One prominent Fifth Avenue church alone contributed over $8,000.

Beth Israel Hospital Association.—At the annual meeting of the Board of Directors, held on January 11, the President's report showed that in 1905 the hospital received $84,133.31 and spent $84,375.85, the deficit being made up from a balance in 1904 of $2,000. Since October 1 1905, the hospital has received in subscriptions $20,000. In 1905 the hospital treated in all 45,573 persons. Eight hundred more were turned away for lack of accommodations.

Newburgh Almshouse.—So many complaints have been received in regard to the manner in which the Newburgh almshouse has been run that the State Board of Charities has appointed a committee to investigate the matter. It is alleged that the mismanagement has been largely due to political conditions.

Vital Statistics of Philadelphia.—The death-rate in Philadelphia was lower for the year 1905 than in any year since the compilation of the vital statistics of the city was begun in 1860. The mortality for the year was 17.25 in every 1,000 of population, as against 18.44 in 1904. The number of deaths from all causes was 24,807, as against 25,971 in 1904. The principal causes of death for the two years were as follows: Pneumonia, 3,361 (1904), 2,591 (1905); tuberculosis of the lungs, 3,107 (1904), 2,829 (1905); tuberculosis of other viscera, 393 (1904), 432 (1905); typhoid fever, 744 (1904), 689 (1905); diphtheria, 542 (1904), 361 (1905); scarlet fever, 201 (1904), 60 (1905).

Notification of Infectious Diseases.—Commissioner of Health Charles J. Whalen of Chicago has sent notice to the physicians in that city, directing their attention to the new law which provides that every physician who attends any person having a contagious or epidemic disease, such as cholera, yellow fever, scarlet fever, diphtheria, typhoid fever, smallpox, varioloid, puerperal fever, membranous croup, measles, or whooping-cough, shall report the case within twenty-four hours, giving the name of the patient and a description of the disease. A fee of ten cents is allowed for every report, and a penalty of from $10.00 to $200.00 may be imposed for failure to obey this law.

Mosquitos in New Jersey.—The State Entomologist of New Jersey has published the results of an extensive investigation into the mosquito problem, based on actual surveys of the great mosquito breeding grounds in the salt marshes, which fringe the State from upper Newark Bay, down along the Atlantic coast and up the Delaware Bay. It is estimated that nine-tenths of all the mosquitos in the State come from the salt marshes and that to exterminate the pests it is necessary to abolish the marshes. It is thought that the expenditure of $315,550 will be sufficient to accomplish this, the estimate being based on what has already been done in New York and New Jersey.

Health Boards in Ohio.—The recent action of numerous cities of the State of Ohio in abolishing their health boards, an action rendered possible by recent changes in legislation, has led to a concerted movement among the medical men of the State, intended to establish local sanitary supervision on a more permanent footing. A circular letter has been sent to the representatives requesting them to institute such reforms as shall place the organization of the health boards on the merit system, and render it completely independent of politics.

Tuberculosis Sanatorium for Kentuckians.—Under the auspices of the Kentucky Club of Denver, Colo., a tuberculosis sanatorium is to be founded near Denver, for the reception of tuberculous natives of Kentucky, who will receive treatment at low cost. The estimated cost of the building and grounds is placed at between $100,000 and $150,000. Of this amount the Denver Kentucky Club will contribute probably $5,000. The balance of the money, it is hoped, will be raised in Kentucky.

Tuberculosis Exhibition for Tenement Dwellers.—On January 16 a tuberculosis exhibition will be opened in the Warren Goddard Settlement House, Second avenue and Thirty-Fourth street. Much of the material used at the recent exhibition in the Museum of Natural History will be on view, and it is expected that the task of the workers among the poor in that section will be much aided by the graphic demonstrations concerning the nature of the disease and the means that must be taken to avoid and to cure it. The exhibition will continue until January 27.

The Boston Tuberculosis Exhibition.—The attendance during the Boston tuberculosis exhibition, which ended January 7, was 24,560. This is a larger number by 6,960 than attended the New York exhibition held a few weeks previously. This is an excellent showing, and no doubt demonstrates the value of wide publicity in a matter of this sort. —*Boston Medical and Surgical Journal.*

The Case of Dr. Bowditch.—A large number of prominent physicians of Boston and other places in Massachusetts have sent to the Governor a protest against the summary dismissal of Dr. V. Y. Bowditch by the trustees of the State Sanatorium at Rutland, after he had served the institution efficiently as visiting physician for seven years. The document came before Ex-Governor Douglas too late for him to take action, but he transmitted it to his successor, Governor Curtis Guild, with the indorsement that the matter required careful investigation.

Health Conditions in New York State.—According to the Bulletin of the New York State Board of

Health for November, the death rates per 1,000 of some of the large places in the State are as follows: New York City has a rate of 16.2, as compared with 14.7 for Elmira, 15 for Yonkers, 18.5 for Mount Vernon, 18.5 for Albany, 21 for Troy, 21.5 for Cohoes, 19.2 for Kingston, 20 for Newburg, 16 for Gloversville, 22 for Utica, 17.4 for Rome, 14.8 for Binghamton, 15.5 for Syracuse, 15 for Auburn, 18.3 for Ithaca, 20 for Lockport. Cobleskill has the best showing, with a rate of 11 deaths per 1,000 population, and Oswego makes the poorest showing, with the high figure of 23.5. The average for the entire State is 15.6.

Nostrum Concern in Trouble.—The so-called Medical Director and Assistant Medical Director of a quack medical concern were arrested in this city on January 12, by the Federal authorities, on a charge of conspiracy to obtain money under false pretenses by using the United States mails. The concern is one of the many that by spurious advertising induce credulous people to correspond with them, and then foist on them nostrums at exorbitant rate under conditions leading the victim to believe his case has been given individual attention. The investigation leading to the arrest had covered a period of almost a year, and has been managed jointly by the Post office authorities, Assistant United States District Attorney Clarence S. Houghton, Champe S. Andrews, and John S. Cooper, the two latter as counsel for the Medical Society of the County of New York.

Appointments at Johns Hopkins.—The trustees of Johns Hopkins Hospital have appointed Dr. Rufus I. Cole associate in medicine, Dr. Josiah M. Slemons associate in obstetrics, Dr. C. P. Emerson resident physician, and Dr. Roger Morris assistant resident physician.

Appointments at St. Luke's Hospital.—The trustees have appointed as assistant visiting physicians at St. Luke's Hospital, in this city, Drs. Walter A. Bastedo, Everett W. Gould, and Karl M. Vogel.

Obituary Notes.—Dr. Emmet Cooper Dent, Superintendent of the Manhattan State Hospital for the Insane on Ward's Island, died suddenly of heart disease on January 12. He was born in Macon, Miss., in 1857, and was graduated from the Bellevue Hospital Medical College in 1879. He was immediately appointed to the staff of the City Insane Asylum on Blackwell's Island, and in 1886 he became superintendent. In February, 1896, when the New York City Asylums were reorganized and placed under State care, he, with his hospital, was transferred to Ward's Island, continuing there as superintendent of the female department of the Manhattan State Hospital. On June 1, 1905, the two departments were consolidated by act of Legislature, and he was made superintendent and treasurer of the entire hospital as it now exists, it being the largest and most modern of its kind in existence. To Dr. Dent is due the credit of many advances and ideas in the care and treatment of the insane. He was noted at home and abroad as being the first to introduce and develop hydrotherapy as a means of treatment, almost to the entire exclusion of medicines; he also introduced camp life for the acute insane; the use of music, and of special diversions and amusements; advanced surgical care and treatment, and operative procedures, especially on the female insane. He was the author of numerous articles on the above subjects. His hospital was the first to accept the more modern views in psychiatry, and has made further advance in this feature in the way of systematic investigation in detail, and in the clinical study. Dr. Dent personally gave clinical lectures on the various types and manifestations of insanity, and he also organized his staff of thirty physicians into a society for the advanced study of psychiatry.

Dr. Carl Bendeke of Minneapolis, Minn., died on January 5 after an operation for an affection of the kidneys. Dr. Bendeke was born in Christiana, Nowray, in 1841. He came to this country in 1868 and went at once to Chicago, where he began the practice of medicine. In 1876 he went to Minnesota, removing to Minneapolis in 1877, where he had remained ever since.

Dr. S. T. Yancy of Fortville, Ind., died on January 3, at the age of seventy-two years. He was a well-known physician and conspicuous in medical circles in his early days. He served as State Oil Inspector in 1884, and represented Hancock County in the State Senate in 1881.

Dr. Lehman H. Dunning of Indianapolis, Ind., died of angina pectoris on January 4. Dr. Dunning was born at Edwardsburg, Mich., in 1850. He was graduated from Rush Medical College, Chicago, in 1872, and began the practice of medicine at Troy, Mich. In 1878 he removed to South Bend, where he remained until going to Indianapolis in 1890, when he succeeded Dr. T. B. Harvey as lecturer on gynecology at the Indiana Medical College. He had for some years been regarded as one of the most prominent gynecologists of the State.

Dr. Thomas W. Simmons of Hagerstown, Maryland, died on December 30, at the age of sixty-nine years after an operation for intestinal obstruction. He was graduated from the Jefferson Medical College in 1861, and since 1864 had been practising in Hagerstown. He had held numerous positions in local medical affairs.

Dr. George W. Doane of Hyannis, Mass., died on January 4, at the age of eighty years. He was a lineal descendant of Deacon John Doane who settled in Eastham in 1644. He was graduated from the Harvard Medical School in 1844, and at once began practice in Hyannis, which he never left. Of late years he had given up practice and spent his time in travel.

Dr. Harrison Hathaway of Toledo, Ohio, was instantly killed by a railroad train on January 4, at the age of sixty-four years. Dr. Hathaway was a native of Seneca County but had practised in Toledo for over thirty years.

Dr. Orlando S. Strange, the oldest physician in Kingston, Ont., died on January 2 after a long illness, at the age of eighty years. He had practised in Kingston for over half a century, and was mayor of the city in 1859.

Dr. W. R. Blue of Louisville, Ky., died on January at Rome, Ga., where he had been for some weeks on account of ill health. Dr. Blue was born forty years ago in Gallatin, Tenn., and had practised in Louisville for the last fifteen years.

Dr. Calvin Snook of Fairfield, Ia., died on January 4, after a short illness. He was graduated from the College of Physicians and Surgeons, Keokuk, Ia., in 1869. He was active in municipal affairs and at the time of his death was a member of the City Council. He was also a member of the Board of Health for a number of years.

Dr. David R. Davis died at Lansford, Pa., on January 5. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1893.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HOSPITAL FUNDS—SUPPOSED EFFECT OF AN INTERNAL SECRETION OF THE MAMMÆ ON THE FETUS—PYOSALPINX WITH CALCULUS IN THE APPENDIX—STANDARDIZATION OF DRUGS—ANALYSIS OF VIOLET LEAVES—LEICESTER'S SHORT WATER SUPPLY—ROYAL INSTITUTE OF PUBLIC HEALTH—INSANITY IN IRELAND.

LONDON, December 29, 1905.

A QUARTERLY report of the Hospital Saturday Fund circulated yesterday shows that up to December 9 the receipts showed an increase of more than £1,000 above the amount of last year. The report states that the three hospital funds (the King's, the Sunday, and the Saturday) are drawing closer together and working on similar lines as far as the three constitutions permit. The committee thinks that hospital abuse is not so extensive as has been stated, and hopes the restrictions imposed on out-patients will not hinder the most suitable cases obtaining relief. The proposed amalgamation of small special hospitals is referred to, and the steps taken as to the orthopedic institutions approved. Negotiations are now going on as to the five institutions doing work for throat and ear cases. It has often been suggested that a central hospital board should be established. As to that, the report before me says the duties of such a board are admirably performed by the King's Fund, with the cooperation and assistance of the other two hospital funds, and good will result from this to both the hospitals and the public. It looks as if the three funds might as well amalgamate, a suggestion I have often made. It might prove easier to accomplish this than to amalgamate a number of small special hospitals.

At the Pathological Society, on the 19th inst., Mr. S. G. Shattock communicated the results of some experiments made five years ago to decide whether the breasts during pregnancy furnish an internal secretion which is necessary for the growth of the fetus. The mammary glands were removed from guinea pigs, the ducts being cut across close to the nipple. The operation was easy; in some cases necrosis followed the extensive raising of the skin, although the wounds were carefully sutured and closed with gauze and collodion. In three animals the wound completely healed and a male was put to each. One became pregnant and brought forth three young, two of full size. One of these was fed artificially and lived for six days, from which Mr. Shattock concluded that the mammary glands do not furnish an internal secretion necessary for the growth of the fetus during the pregnancy.

Dr. T. G. Brodie could hardly accept this conclusion, and thought it probable that the ovary was concerned with the activity of the breast, though the question is still unsettled.

Both Mr. Shattock and Dr. Brodie referred to the work of Dr. Starling, who you will remember injected regularly extracts of fetal rabbit tissues for considerable periods into virgin rabbits. Enlargements of the mammary glands followed, comparable to that seen in pregnant rabbits, but not invariably. In fact, a number of his cases furnished only negative results, though, of course, positive results in some cases are not without significance.

At the Gynecological Society, on the 14th inst., Dr. Richard Smith showed a specimen consisting of a pyosalpinx, perforated appendix, and a small stone, which had escaped during operation. The patient five years ago had an attack of appendicitis during a pregnancy, and had suffered from dysmenorrhea since. Another attack occurring, a hard tender mass was found in the right iliac region, but there were no rigors nor pyrexia. There was intense pain on movement. Inflamed appendix adherent to the tube and ovary was diagnosed. On opening the abdomen, the omentum was found adherent. On separating it, a dense mass of tissue appeared, from which a swollen tube was released without rupturing it, but between it and the appendix was a small abscess cavity containing a couple of drams of pus. On dissecting away the appendix, the small calculus escaped through a perforation. The pus was removed with gauze. No flushing; no drainage. Recovery was quite regular, the wound healed on the tenth day.

Mr. C. Ryall said in his experience adhesions to the female pelvic organs were rather common and would be more often noted if they were looked for at every laparotomy. Dr. C. H. F. Routh had once found a large piece of cecum, apparently including the appendix, in a large abscess he had opened.

Mr. B. Jessett had seen many cases of adhesions to various viscera. He approved swabbing rather than flushing.

Dr. R. Smith in his reply said the entire Fallopian tube was included in the tumor. He thought the most interesting point was that pyrexia was never once observed throughout.

The biochemical standardization of drugs has been discussed recently at the Therapeutical Society and a resolution adopted to the effect that it is "most desirable that those who are responsible for the British Pharmacopeia should take steps to insure the physiological standardization of drugs, particularly of digitalis, squills, strophanthus, ergot, and cannabis indica." It was argued at the same meeting that chemists should prepare and standardize their tinctures instead of procuring them from wholesale houses. Dr. Dixon, who put forward this opinion, had found great differences in specimens obtained from different sources. Some preparations were quite inert, while others differed so much in strength as to render their use dangerous. The modern tendency has placed so much in the hands of the wholesale manufacturers that the retail chemists are giving away that branch of knowledge which is their chief claim on the public. They cry out that doctors might hand over their dispensing to them, and they are themselves handing over their scientific work to others. It is comparatively a small number of pharmacists who really continue to do this important part of their work.

At a subsequent meeting of this society, on the 19th inst., Mr. H. W. Gadd reported the result of a research he had made on the chemistry of violet leaves. A glucoside had previously been found by Mandelin, who named it "viola quercitrin, which can be split up into quercetrin and glucose. Mr. Gadd found the glucoside. He did not find and volatile constituent, or salicylic acid, or any alkaloid. The glucoside amounted to about 5 per cent. of the fresh leaves. Nine-tenths of this could be extracted from the leaves by infusion. Although salicylic acid could not be detected, there were indications of a phenol. The varieties of the cultivated violets vary somewhat in the amount of glucoside.

The people of Leicester are in a very unpleasant predicament and the health authorities at their wits' end. The insufficient rainfall has entailed a shortage of water supply which becomes more threatening every day. The supply has been obliged to be curtailed for some time and is now cut off for 10 hours in the 24. Of three reservoirs, one is down to the dregs and the other two have only one-fourth of their normal amount. About 300,000 gallons are obtained from a colliery shaft, but that is not nearly enough. Another well has been sunk from which 200,000 gallons per day is being pumped, but unhappily the site of this is near a cemetery and the public are naturally apprehensive. The water has been analyzed and pronounced good, but the danger is obvious, for it is stated that bodies have been buried this week within a stone's throw of the well. The population is 267,000, so that contamination would mean a sad disaster. Another supply, it is hoped, will be obtained within two months. Leicester is engaged in carrying out a great scheme for supplying its needs from the Derwent Valley, but it will be six years before that will be completed. The deficient rainfall this year seems, therefore, the more distressing.

The Royal Institute of Public Health has now arranged for examinations and reports of chemical, microscopical, and bacteriological specimens to be supplied to practitioners at moderate charges. The investigations will be undertaken in the new laboratories, and no doubt will be appreciated by busy men.

The Blue-Book, relating to lunacy in Ireland, shows a continued increase. This has been going on for a whole generation. A special inquiry has lately been conducted into the facts and a report will no doubt shortly be made. The present Blue-Book gives many statistics, from which it may be deduced that the number of insane under care increased from 250 per 100,000 of the population in 1880 to 522 in 1904. If to these be added the number of lunatics and idiots at large, the figures would be 610 per 100,000. Various neuroses are becoming more common in Ireland, particularly general paralysis of the insane, mainly a disease of town life.

An Appendix to Sartor Resartus.—A writer has contributed to *St. George's Hospital Gazette* a prospectus of a proposed work on the pathology and treatment of diseases and accidents of the toilet. The prospectus is fortified by alleged extracts from the forthcoming volume. Among the lesions described are "perforating ulcer of the sock," "false passages of the vest," "hairy mole of the shirt-cuff," "idiopathic atrophy of the pajamas," "sloughing of the posterior foramen of the collar-band," and "prolapsus trouseri," while a further chapter is said to be devoted to affections peculiar to evening dress, such as "Addison's disease of the shirt-front" "madura pump" and "inoperable volvulus of the necktie." With regard to perforating ulcer of the sock, "treatment by simple suture or the purse-string ligature is not to be recommended. Each perforation must be carefully grafted by an expert."

OUR PARIS LETTER.

(From Our Special Correspondent.)

OPENING OF THE CLAUDE BERNARD HOSPITAL—ANTITUBERCULOUS VACCINATION EXPERIMENTS—ELECTION OF GILBERT AND OF DOLÉRIS, AND EULOGY ON PANAS AT THE ACADEMY OF MEDICINE—THE NEW CHAIR OF CLINICAL THERAPEUTICS AT THE FACULTY OF MEDICINE—ANASTOMOSIS OF THE SMALL INTESTINE WITH THE RECTUM—A CASE OF PERSISTENT BILIARY FISTULA CURED BY THE ANASTOMOSIS OF THE DUCTUS COMMUNIS CHOLEDOCHUS WITH THE DUODENUM—DIAGNOSIS AND TREATMENT OF CALCULI OF THE TERMINAL PART OF THE DUCTUS COMMUNIS CHOLEDOCHUS—EXPERIMENTS WITH SYPHILITIC VIRUS—MEETING OF THE MEDICAL INTERNES OF THE PARIS HOSPITALS—THE REGIONAL AND COMFIRMED LOCALIZATIONS OF SYPHILIS.

PARIS, December 30, 1905.

ON November 30, 1905, the President of the Republic opened the new hospital for contagious diseases which has been built on the old site of the Hospital of the Porte d'Aubervilliers. This institution is a memorial to Claude Bernard. The length of the building is almost one kilometer. This hospital will receive patients ill with contagious diseases. Its construction and arrangement bear witness to the great progress in hospital building made by the Department of Public Charities of Paris. The building consists of a series of pavilions. The floor is entirely tiled, and sharp angles are avoided, the corners being rounded. Heating is accomplished by steam at low pressure, and electric lights are used. Perhaps the most interesting feature of the hospital is the method of disinfection of sewage. This disinfection is accomplished by apparatus which has been constructed by Bréchot. This apparatus consists of a cylinder the walls of which are made of a layer of coke forming a large filter which retains the solid matter while allowing liquid to pass through it. The liquid is carried into a cistern where it is sterilized by chemical processes and is finally poured into the sewer by a pump. The solid matters retained in this apparatus are burned with the coke, which is raised to a temperature of 1,200 degrees. This method of disinfection shows true progress.

On December 3, at Melun, under the direction of Valée, autopsies of calves which had been subjected for a year to the inoculations of Behring's vaccine were performed. These experiments, conducted in the most rigorously scientific manner, have proved that all the vaccinated animals remained for a year free from any tuberculous infection, all of them at this time having been exposed to tuberculosis, some by living with tuberculous animals, others by inoculations of virulent cultures of Koch's bacilli. Control animals placed under the same conditions all contracted tuberculosis. These experiments prove that we are now in possession of an antituberculous vaccine of indisputable value. It is to be hoped that antituberculous vaccination is a fact both scientifically and practically established.

Gilbert, professor of Therapeutics at the Faculty of Medicine of Paris, has been elected to the Academy of Medicine. The important works of this scholar on the pathology of the liver are too well known to be emphasized here. Doléris has also been nominated as a titular member of the Section of Obstetrics. During its last meetings the Academy has been specially occupied with reports concerning the prizes. On December 12, the annual public meeting took place, Léon Colin presiding. At this time the prizes were awarded. This impressive meeting was closed by an eulogy on Panas, Professor of Ophthalmology at the Faculté de Médecine of Paris. Panas had been dead three years. The eulogy was delivered by Jaccoud, Secretary of the Academy of Medicine. The Academy then elected its officers. Gautier, the well-known chemist, was elected vice-president. Duguet and Pinard were elected members of the Council.

At the Faculté de Médecine, the Committee of the University of Paris which met in extra session at the Sorbonne accepted unanimously the donation presented by le Duc de Louhet for the founding of a new chair of clinical therapeutics.

At the Surgical Society, Terrier made an important communication concerning his results in the anastomosis of the small intestine and rectum in cases of inoperable cancer of the large intestine. Terrier has statistics of eleven cases, eight of which are his own, the other three being those of his assistant Gosset. Of these eleven patients, three died. One had septic peritonitis, while the death of the other two was due to carcinomatous metastases. As to the eight patients who survived, Terrier was able in one case to remove secondarily the neoplasm which was located on the cecum. In the seven other patients, a simple lateral anastomosis was performed without exclusion, properly speaking, and which allowed a continuous passage through the two segments of the intestine above and below the tumor. Terrier concludes that in all cases of neoplasm of the large intestine, every time that there is a place under the lesion large enough to allow an ileorectal anastomosis it is a great advantage to practice this in preference to the formation of an artificial anus. Following the communication of Terrier, Piqué said that he thought that there was not a single surgeon who did not consider an artificial anus a makeshift and who did not seek a way of avoiding it. Besides all of the inconveniences of the artificial anus, it should be added that there have been cases of suicide and of mental disturbance in those with some predisposition to such tendencies, following the formation of an artificial anus.

Brin, of Angers, reported an important observation concerning a case of persistent biliary fistula which was cured by anastomosis of the ductus communis choledochus with the duodenum. He spoke of a patient, a woman, who had suffered with cholelithiasis for a number of years, and who, following two surgical interventions on the biliary passages, lost all of the bile from her liver through a persistent fistula. Brin performed an operation. He recognized that the fistula was located in the ductus communis choledochus, and he concluded that this canal was obstructed at its lower extremity. He decided to connect the duct with the intestine. Four days later the feces were colored and three weeks afterward the patient left the hospital completely cured.

After this communication, Tuffier discussed the diagnosis and the treatment of calculi of the terminal part of the ductus communis choledochus. In one case he broke up the calculus through the wall of the canal and the results of the procedure were excellent. In the other cases he made an anastomosis between this canal and the duodenum. Terrier believes that the method of the future in the surgical treatment of biliary lithiasis will be to open and explore systematically all of the biliary passages, beginning with the gall-bladder and ending with the ductus communis choledochus.

In the Annals of the Pasteur Institute, Metchnikoff and Roux, referring to their experiments on monkeys, discuss a question of considerable importance in human prophylaxis. They have demonstrated that if one hour after inoculating a monkey with syphilis, friction be made over the inoculated spot with a mercurial ointment, contamination of the animal will be avoided. Human beings who have exposed themselves to this disease, may have the advantage of rubbing on the exposed region without delay a calomel ointment. These experiments scientifically and rigorously conducted in relation to various species of monkeys have shown in a positive manner that local treatment with mercurial ointment of the parts contaminated with syphilitic virus prevents infection. As a confirmation of these interesting experiments, the control animals were inoculated with the same syphilitic virus taken from the indurated chancres of persons afflicted with syphilis. All of these control animals presented after the ordinary period of induration typical syphilitic chancres. The calomel ointment seemed to annihilate the ordinary action of the virus. On the other hand, the application of sublimate solution one hour after inoculation was shown to be without effect.

On December 18, there was a meeting for the purpose of nominating the titular internes of the hospitals of Paris. The names of six hundred candidates were enrolled. Four hundred and forty-three papers were returned. The question for discussion in anatomy was the ductus communis choledochus; in pathology, the semeiology of ascites. The importance of this meeting, which was of interest to the young medical world of Paris, was emphasized in a letter to the MEDICAL RECORD last year. At the Society of Internes of the Paris Hospitals, Dieulafoy discussed the regional localizations of syphilis, dwelling especially on the external localizations of tertiary syphilis. He showed that in a large number of cases syphilis confined itself to one region without any other manifestation. During extremely long periods syphilis remained constant to the anatomopathological type that it assumed in the beginning. Under the influence of appropriate treatment, an organ which appeared irremediably affected might regain its function. In regard to this disease one should never despair concerning the success of treatment.

RADIUM ACTIVITIES.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—While not assuming to act as censor on matters pertaining to radium-therapy I cannot refrain from criticising the statement made by Dr. Myron Metzenbaum (MEDICAL RECORD, January 6, 1905), that the results from tubes of low activity and high activity are identical. This is absolutely at variance with the experience of operators having had large clinical experience with radium, and is practically controverted by the excellent report of the results obtained by Dr. Robert Abbe contained in the same number of the MEDICAL RECORD. Dr. Abbe's remarkable results are due to the exceptionally large quantity and high activity

of his radium, and I venture the statement that his tubes of 150 milligrammes, 300,000 activity, are not for sale at any price. He would never have been able to secure the brilliant results he reported and demonstrated with radium of low activity, and Dr. Metzenbaum's statement, if accepted by the profession, will be apt to bring radium-therapy into discredit, as the results looked for will not materialize. Only high activity radium in sufficient quantity or radium emanations secured by the new method of Lieber (radium coatings) have thus far been found efficient in the treatment of the diseases enumerated by Drs. Abbe and Metzenbaum, the emanations from radium of low activity having but little value in therapeutics as at present applied.

W. H. Dieffenbach, M.D.

New York.

Progress of Medical Science.

Boston Medical and Surgical Journal, January 11, 1906.

Three Cases of Perforated Gastric Ulcer; Gastroenterostomy.—These cases are reported by D. F. Jones. The first, a woman of thirty-two, died three weeks after operation A small perforation appeared, nine days after operation, an inch below the original one, in that portion of the stomach presenting in the wound. It gradually enlarged, and later a third appeared below the second. It was impossible to properly nourish the patient, and death resulted from exhaustion. The second patient was a man of forty-eight; operation; recovery. A like fortunate result occurred in the third case, a young man of twenty-five. The various features of each case are detailed in the respective clinical histories. The special reasons for the value of gastroenterostomy in perforated ulcers are thus summarized: The ulcer is in an active state and presumably will continue to be active for some time regardless of treatment. Rest in bed, resting of the stomach, and feeding by rectal enemata cannot arrest the activity of the ulcer at once, and so long as the ulcerations remain active there is danger from hemorrhage, perforation of other ulcers, and involvement of the sutures closing the ulcer causing leakage. In spite of the experimental findings of Cannon and Blake that the greater portion of food is forced through the pylorus after a gastroenterostomy, there must be some change produced by the operation which relieves the irritation of the ulcer, for it does give the greatest relief at once, and so far as we have any means of telling, the ulcer has a much better chance to heal.

Analysis of One Hundred and Twenty Cases of Malaria Occurring at Camp Gregg, Philippine Islands.—In an exhaustive report by W. P. Chamberlain, the following facts are brought to light: The great prevalence of malaria under the conditions named in the paper was due to the presence of large numbers of anopheles mosquitos. Infection from drinking water could be excluded. The jungle approached so close to the camp that it was impossible to drain off the breeding pools, the dangerous character of which was augmented by the long-continued wet season. The season from May to December was especially productive of the malady, the severity being most marked in October and November. Pernicious forms were very rare, owing to the thorough and prolonged treatment of the primary infection. The author notes that quinine sulphate in solution .5 gm. three times or even four times a week did not in all cases prevent infection or relapse. Malarial infections, both benign and malignant, existing for several days without chills or chilliness but with marked periodical febrile paroxysms, were by no means infrequent. Clinically the estivoautumnal infections could be clearly divided into remittent, quotidian intermittent, and tertian intermittent Of 62 cases 40 per cent. were tertians, 25 per cent. quotidians, and 35 per cent. remittents. In 46 per cent. of the estivoautumnal tertian intermittents a pseudocrisis and precritical rise of temperature was present in one or more paroxysms as shown by three hours chart. An almost identical pseudocrisis and precritical rise was observed in 9 per cent. of the benign tertian intermittents. No distinctive differences were observed in the parasites in the intermittent tertian and intermittent quotidian estivoautumnal infections. Nausea, vomiting, and abdominal pain at time of paroxysm were extremely common in both benign and malignant infections. In 120 cases, analyzed nausea occurred in 72 per cent., vomiting in 42 per cent., and abdominal pain in 30 per cent.

New York Medical Journal, January 13, 1906.

Friedreich's Ataxia.—Thirteen cases are reported by Wharton Sinkler, who gives a general description of the malady, and the histories of his cases. He refers to the disease as a chronic degeneration, resulting from a defective development of the spinal cord. It is distinctly a family disease, though no one exciting cause can be assigned. It usually develops about puberty. Autopsies have shown the amount of development in the various systems of fibers in the spinal cord and an inherent or congenital tendency to degeneration in the motor neurons. The cord is usually thin and small, and a thickening of the pia mater, especially about the posterior surface, is observed. Sclerotic changes exist throughout the whole length of the posterior columns and sometimes extend to the lateral columns. In some patients other tracts of the cord are affected, such as the anteromedian columns, but as a rule the tracts principally involved are the posterior and lateral columns, and in patients with advanced cases the medulla shows extension of the sclerosis, but the most characteristic change is the involvement in the cells of the hypoglossal nucleus. It has been asserted that in all patients suffering from Friedreich's ataxis there are secondary changes in the cerebellum present, but this view is not universally accepted. The symptoms and clinical course of the malady are portrayed by the author, who adds that it is an incurable affection, and that treatment is practically restricted to hygienic measures. Massage, electricity, and arsenic are all beneficial.

Reflex Neuroses with Special Reference to the Vermiform Appendix.—E. H. Grandin refers to the reflex symptoms arising from the coccyx, clitoris, uterus and appendages, kidneys, and vermiform appendix, illustrating his statements by reference to personal cases. He believes that the appendix is often responsible through a reflex or mechanical interference with the proper function of the cecum, ileum, and colon for gastrointestinal symptoms, which stomach washing fails to cure. The chain of events may be: Mechanical interference with the function of the bowel, constipation, colitis, tympanites, torpor-dyspepsia and varied neuroses. Several clinical histories are given. Often appendices, which examination shows are the seat merely of caloric inflammation, may contract adhesions to surrounding organs, and so set up the disturbances referred to.

The Pathological Physiology of Typhoid Fever.—The ideas of J. M. Barach are embraced in the following main propositions: The evidence of to-day is sufficient to establish the modern idea that typhoid fever is a disease dependent essentially upon the bacteremia. The Peyer's patches and solitary follicles are not the sources from which the typhoid bacilli are sent out into the circulation, but their marked involvement is due to their peculiar histological structure or to some physiological relation that exists between the typhoid bacilli and the lymphoid elements. Perforation with the ordinary pyogenic infection, staphylococci and streptococci, is much more dangerous than with the pathogenic infection, because to the latter there is already a partial immunity established. The diazo is a reaction to an end product, the result of rapid tissue destruction which is characteristic of all marked cases of typhoid fever, and of those other diseased conditions in which the reaction occurs.

Gonorrheal Rheumatism.—M. Ware gives a general description of this disase, calling attention to the diagnosis, saying that in every obscure joint affection we should look to the urine. This will often clear up the matter, especially with men in whom we can be more searching than in women. The author declares that in many a gonorrheal arthritis, chronic and relapsing, is designated as rheumatism or gout, when the introduction of the finger in the rectum will detect an enlarged and tender prostate followed by the escape of purulent discharge from the urethra, or a urine laden with shreds and threads which heretofore have been absent from it, and which not infrequently after this manipulation continue to make their appearance. In women, married or otherwise, we may elicit a history of scalding urination or a specimen which is cloudy. If the woman consents to examination, the presence of urethral caruncles and small petechial hemorrhages in the vaginal mucous membrane (referred to by Bumm as macula gonorrhoica) even though the discharge be slight, constitute valuable corroborative evidence as to the gonorrheal nature of the arthritis. The existence of a gonorrheal iritis may have to be taken into consideration to clinch the diagnosis of a doubtful arthropathy. Finally, the question arises, Are we justified in aspirating a joint to establish a diagnosis? Be it answered that only if the aspiration is indicated for the relief of symptoms and then it may be resorted to incidentally for the chances of other infection are too great and the possibility of obtaining a growth even on the best of media is fraught with much uncertainty in the outcome of the results.

American Medicine, January 13, 1906.

Should the Youth of This Country Be Instructed in a Knowledge of Sexual Physiology and Hygiene?—Prince

A. Morrow says the general principle is laid down that the education of the public is the most valuable of all measures for the prevention of communicable diseases. Its importance is emphasized in the case of diseases the communication of which lies entirely within the control of the individual. The object of the proposed education is to give the youth of this country a clear comprehension of certain physiological truths which have a direct bearing upon the regulation of their sexual lives and of the serious consequences in the shape of disease and death which follow a breach of hygienic laws. In other words, it is to teach them how to live according to the laws of a healthy nature. This instruction in the physiology and hygiene of the sex function should form an essential integral part of the education of youth. Dr. Morrow criticises our present educational system the policy of which is to launch the young into the world in complete ignorance of everything pertaining to the laws of life reproduction. In seeking this knowledge the youth is but obeying a law of his mental evolution. Since this knowledge cannot be had from legitimate sources—from parents and instructors—it is gained surreptitiously and usually from depraved sources, dissolute companions, or erotic or quackish literature. To be salutary as a safeguard, therefore, this hygienic education should be given in youth, for it is during this period that the foundations of what may be termed the "sexual character" are laid and habits of mind and practices are formed which, in a great measure, determine the future sexual life of the individual.

Medical Treatment of Abdominal Pain Not of Gastric Origin.—James E. Talley discusses the medical treatment in these cases. He states that nowhere else is an absolutely accurate differential diagnosis more difficult than in the upper quadrants of the abdomen. He takes up in turn the discussion of hernias, functional neuroses, intoxications, abdominal pain not due to disease below the diaphragm, hepatic conditions, renal pain (nephrolithiasis, floating kidney, intermittent hydronephrosis, pyelitis), intestinal conditions, pancreas, spleen, peritonitis, and pelvic conditions. Ectopic pregnancy must also be borne in mind as a possible cause of sudden abdominal pain.

Cerebellar Tumor.—Burton Chance reports a case in a man of twenty-six. The symptoms were those of intracranial tumor of the hind-brain, rather than of the more forward portions, and appear to be those produced by irritation rather than by the destruction of the basilar centers. Although an intense papillitis which was present, was conclusive of the presence of a tumor, the indefiniteness of the other symptoms hindered the assumption that the tumor occupied the cerebellar region. The chief focal symptoms were those of deviation of the optic axes, with disturbances of direct and binocular vision, and facial palsy; yet, after energetic treatment the paresis of the left external rectus muscle, as well as the diplopia and the facial palsy, greatly disappeared, and when the man was placed under strict hospital regimen the general symptoms all but ceased, for there were no headaches, emesis, or muscular spasms, until the last course. The gait, station, and the knee-jerks were not interfered with until very late in the progress of the malady. There was hyperexcitation of the sexual function almost until the end. The general bodily nutrition was maintained up to the last weeks of the man's life. A report of an examination of the brain made by Dr. Spiller is appended.

A Young Stage of the American Hookworm—Eight to Twelve Days After Skin Infection in Rabbits and Dogs.—Ch. Wardell Stiles and Joseph Goldberger have succeeded in infecting dogs and rabbits with the American hookworm (*Necator americanus*, Stiles) by placing the second larval stage of this worm on the skin of the back and guarding against any infection through the mouth. The young worms penetrated the skin, and eight to twelve days later they were found in the stomach and small intestine. They had undergone a third ecdysis and reached the fourth larval stage (with provisional buccal capsule). The authors state that there is at present no evidence that these hookworms would reach maturity in dogs and rabbits, hence the conclusion that dogs and rabbits play any rôle in spreading the disease to man is not justified by any facts known.

Journal of the American Medical Association, January 13, 1906.

The Pathology of the Kidney.—W. T. Councilman first notices the complex structure and circulation of the kidney, its excessive blood supply, its marked capacity for repair with slight capacity for complete regeneration of tissue, and the steady impairment of its structure with advancing age, due not only to arterial disease and wearing out, but also to the cumulative effect of slight lesions with constantly increasing inability to repair. The most easily understood kidney lesions are local ones from bacterial invasion, either by way of the blood or through the urinary tract. Chronic congestion and urinary obstruction may also cause damage through pressure and interference with the circulation. How the damage constantly accompanying diffuse arteriosclerosis is produced is not known. The changes consist in destruction and degeneration of the parenchyma and increase of interstitial tissue, the latter being now generally accepted as secondary to the former. There is no evidence of an independent increase of connective tissue in arteriosclerosis. It is probable that the condition in the kidneys is the result of many factors rather than of any one. The greatest difficulty in understanding the pathology of the kidney is found in the acute, subacute, and chronic diffuse lesions not connected with changes in the flow of blood or urine, nor with the immediate action of bacteria. Among these are noticed the acute interstitial non-suppurative nephritis due to the deposition and proliferation in the renal interstitial tissue of lymphoid cells from the bone marrow, spleen, etc., which occurs in acute infectious diseases, notably in the acute exanthemata. Why these cells accumulate in the renal veins is not known. Epithelial degeneration in varying character and degree is the most frequent condition met with in all cases of diffuse nephritis, often exquisitely focal and sometimes remarkably selective. Thus in diabetes, it only affects the cells of Henle's loops. The degeneration may range from very slight change to complete necrosis. Of the severer lesions of the kidney due to the diffuse action of soluble substances, Councilman notes one group in which glomerular lesions are most prominent. The most common cause of the glomerular affections he believes to be the acute infections. They may be acute, subacute, or chronic. The other form of chronic nephritis, chronic interstitial nephritis causing a slow destruction of all parts of the kidney, the glomeruli least and secondarily, with a marked increase of connective tissue, is usually accompanied by arteriosclerosis. It is a composite disease; not one organ, but many are affected. In this connection he gives the results of the anatomic study of the autopsies in cases of nephritis at the Boston City Hospital during the past ten years, and notices especially the marked heart enlargement in this form. The cases of amyloid infiltration are closely associated with it, but there is absence of heart hypertrophy. In the cases of chronic glomerular (parenchymatous) nephritis there also appeared to be a degree of cardiac hypertrophy, though to a less degree. The frequent association of acute glomerular nephritis with pneumococcal infection is remarked, as also that of the acute interstitial form with diphtheria. Certain conclusions are forced on one, he says, by the careful examination of the kidneys, in a large number of autopsies. One is that the kidney affection is only a part of a more general morbid condition. Kidney diseases cannot be considered as an entity; even the simplest bacterial lesions are secondary to infections elsewhere. Every acute infection probably leaves its traces in the kidney. Albumin and casts, though they mean injury to the organ, do not always indicate the severity of the condition, and too much importance may be attached to their occurrence. It is difficult to explain the association of lesions shown at autopsies, the cardiac hypertrophy and edema, and the numerous hypotheses that have been offered show our ignorance. It is not probable that anatomic studies can throw much light on the obscure problems of renal pathology. Clinical, pathological, chemical, and anatomic methods must all be used, and the hypotheses offered tested by animal experiments. Only thus, and by reducing the questions to their simplest components, can such knowledge of chronic diseases as will permit us to form acceptable hypotheses for their explanation be obtained.

The Operative Treatment of Fractures.—J. A. Kelly advocates the more general adoption of the operative treatment of fractures. Its advantages are enumerated by him as follows: 1. Relief of pain from movement of fractured ends and from tension due to extravasated blood. 2. The possibility of accurately approximating and retaining in position the fractured portions of bones. 3. Prevention of shortening and deformity. 4. The possibility of removing clots and repairing neighboring structures. 5. Excessive callus formation is prevented, and in fractures involving joints, subsequent limitation of motion and deformity is also prevented. 6. Pressure on adjoining structures is removed. 7. Associated dislocations may be properly reduced. 8. The period of disability is considerably lessened. 9. The skeletal mechanics of the patient are left as before the fracture. These advantages, he thinks, vastly outweigh the possible dangers of infection, of necrosis of the fractured ends, and of an external scar. When conservative methods fail to insure perfect approximation and retention and when the preservation of the skeletal mechanism is important, especially in laborers, there should be no hesitancy, he says, in converting a closed fracture into an open one. The technique of the operative methods is given in detail. Kelly prefers ab-

sorbable sutures for uniting the bones, and as all methods require some sort of external retentive apparatus, it would seem, he says, that the ideal form of internal fixation is by the heavy (No 4) chromicized catgut. The operative treatment of open fractures and of separated epiphyses and fractures associated with dislocations is also described as well as the after-treatment of all forms of operated fractures. Details of twenty-three cases, including open and closed fractures, ununited fractures, and post-fracture deformities are given. In conclusion, he remarks that proper selection should be made of cases for operative methods; most cases can be successfully managed by conservative treatment, and do not call for operation. The article is illustrated with many skiagraphs.

Streptococcus Infections.—G. F. Ruediger has made further studies, in addition to those previously published by him, of streptococcus infection in the human subject, with special reference to determining what factors are concerned in the destruction of the invading germs. He finds that although human serum during life is a good culture medium for streptococci, normal defibrinated blood has a slight streptococcidal power, roughly proportional to the leucocytosis. Human serum does not acquire any streptococcidal power in the course of a streptococcus infection, nor does the blister fluid from erysipelas have any such action. The destruction of the cocci in the defibrinated blood is brought about by the leucocytes, but the cocci must be acted on first by the opsonin of the serum. There is no phagocytosis, and hence no destruction of unsensitized cocci by washed leucocytes. The opsonin is increased during an attack of erysipelas. In acute nephritis it is decreased and the leucocytes are also affected, rendering them less effective in the destruction of the streptococci. This fact, Ruediger says, may help to throw light on the cause of many terminal infections.

Paroxysmal Tachycardia.—C. C. Warden reports in detail two cases of paroxysmal tachycardia, in which other previously unrecognized symptoms of exophthalmic goiter were present, and suggests that a more thorough examination of other cases will reveal similar relationships in a considerable proportion of instances. The more he sees of this symptomatic disturbance, the less inclined is he to regard it as a definite entity deserving a separate place in the category of disease. Its relation to exophthalmic goiter, he thinks, has not been sufficiently recognized in the past, and many of the cases reported in the literature as paroxysmal tachycardia would probably be better classed under the head of exophthalmic goiter.

Strychnine and Nitroglycerin in Circulatory Disorders.—O. H. Brown notices the mistake that is made sometimes in the use of these remedies in cases of circulatory disorder. He describes the mechanism of blood pressure, both in the general circulation and in the heart. Strychnine, acting on the vasomotor center, constricts the arterioles, causing a rise of blood pressure and a better coronary circulation, a better nutrition of the heart and a more efficient systole. Only exceptionally does it so stimulate the inhibitory vagus center as to produce no rise of arterial tension. Nitroglycerin, on the other hand, he states, dilates the arterioles, lowering blood pressure and aiding the heart by reducing the resistance against which it works. The two drugs are directly opposed to each other in their action on the circulation, and when one is indicated for its therapeutic effects the other is contraindicated. Strychnine is called for when there is a low blood pressure, a rapid heart and bounding and easily compressible pulse; nitroglycerin is indicated when the arterial tension is high, the heart rates low, the pulse full and tense and the wave very slight. In case of muscular degeneration of the musculature of the heart the signs might be slightly different from the above.

The Lancet, December 30, 1906.

Acute Poisoning by Oil of Eucalyptus.—Notes on two cases are given by F. L. Benham. One was that of a man of forty years, who took, by mistake, an undetermined quantity of the oil, about one dram being swallowed the rest being rejected, owing to its pungency. He quickly became unconscious, looking as if in a state of surgical anesthesia. Vomiting was absent. He was roused sufficiently to swallow an emetic, which acted promptly. In a few hours he was all right. The second case was practically a repetition of the foregoing. The author knows of no fatal cases.

Melæna Neonatorum; Recovery.—E. F. Heap reports the case of a male child, healthy in every way as far as could be noted, who about twenty hours after birth brought up considerable red blood and passed considerable from the bowel. No cause therefor could be determined. The child did not seem to suffer from the hemorrhage, was warm, and a little pale. He was ordered to be kept warm and quiet and to be given sips of plain water. Bleeding came on again in three hours, more severely than before with all the symptoms of intense anemia. Fifteen minims each of castor and olive oil were given in the hope of reducing blood pressure, and ice water was administered in constant sips. Bleeding stopped, though dark clots were passed constantly. Temperature remained at about 100° F. Next morning the ice was discontinued and the child given egg water and diluted milk. From this time the child steadily improved, though the problem of feeding was a difficult one. At the end of three weeks, while still anemic and weak, he was doing fairly well. Six weeks later he seemed to be in perfect health.

Acute Hemorrhagic Pancreatitis.—H. V. Munster gives the history of the case of a man of fifty-four years, thick set and stout. During the three years antecedent to his pancreatitis, he had had five or six attacks of severe abdominal pain, regarded as due to inflammation of the bowels. The present attack be an in the same way. He vomited some while his bowels moved after castor oil. The next morning he went into collapse, had incessant thirst, vomited black blood, and presented all the signs of an intestinal perforation. All the usual resuscitative measures were employed, including hypodermoclysis and adrenalin internally, and for a time there seemed to be some hope of pulling him through. It was thought that there had been a perforation of the posterior wall of the stomach, and that the ulcer so formed had become adherent to underlying structures. In a few days more, however, he again failed, and died on the eleventh day of his attack. Autopsy showed fatty necrosis in the peritoneum, while the pancreas was enlarged. There was much extravasation of blood around it and it was studded with hemorrhages. The omental nodules reacted for fat, under the copper acetate test. The diagnosis made was the one named in the title. The case is of interest, owing to its duration. The disease usually terminates fatally within five days. There was the typical bowel sequence of first constipation and later diarrhea with delirium at the close of the symptoms.

The Medical Treatment of Uterine Fibroids and Its Limitations.—T. Wilson discusses some of the statistics of fibroid tumors and their clinical course. The drugs most frequently used in its treatment are ergot and its various derivations. Some cases considered as fibroid tumors and as non-syphilitic, have cleared up under the iodide of potash. Bichloride of mercury has also been given. While not much can be hoped for from the direct effects of medical treatment, it is often possible to alleviate their symptoms, and in this way to postpone operation and possibly prevent it altogether. For hemorrhage, we order rest, ergot, and make applications of iodine to the endometrium. Hot douches, with some mild antiseptic added, are of service; as is also a hot bag, applied to the lower dorsal or lumbar spine. Of all drugs, ergot is incomparably the best. It must be remembered that it is not a safe drug to give to patients with weak hearts. In a small percentage of cases curetting of the endometrium is the best course to follow, or iodine may be injected. The author prefers iodine to other caustics for the application, because it is at the same time a reliable antiseptic and a good hemostatic, and also because it does not give rise to more than a thin superficial necrosis of the endometrium. The application can be repeated once a week in the intervals between the periodical losses. As to relieving pain, we must search out its cause and act accordingly. The pre-menstrual congestive pain is often relieved by the administration of salines in conjunction, if necessary, with the milder sedatives, such as the bromides; and by the use of hot foot baths, with or without the addition of mustard; an effective aperient is frequently of conspicuous service. The spasmodic menstrual pain in severe cases calls imperatively for rest and the application of heat to the lower abdomen. Antispasmodics, sedatives, and diffusible stimulants, are the classes of useful drugs. Of the diffusible stimulants gin is, of course, the most renowned and at the same time one of the most objectionable; alcohol in any form is often useful but always, if possible, to be avoided. Aromatic spirit of ammonia, spirit of ether, and spirit of chloroform are sometimes useful. Hoffman's anodyne, the compound spirit of ether, in half-drachm doses, is one of the most efficacious means of relieving the pain. As regards sedatives the milder ones should at first be tried, such as the bromides, antipyrin, phenacetin, or antifebrin; if these fail, or the case is a severe one, chloral, chlorodyne, belladonna, opium, or morphine, may be administered by suppository or enema, or finally, even by hypodermic injection.

British Medical Journal, December 30, 1905.

A Preliminary Inquiry into the Tonicity of the Muscle Fibers of the Heart.—James Mackenzie concludes that dilatation of the heart is not due to a mechanical dis-

tention of the chambers of the heart. There is little doubt when dilatation does occur that there will be found depression in the function of tonicity. The author adds that in stating that dilatation is an evidence of depression of tonicity only a part of the truth is presented, for the enlargement of the heart, which is associated with dilatation, depends upon the affection of certain portions only of the musculature of the heart. It has been shown that the heart-muscle fibers are distinct from the skeletal muscle in that according to their special duties certain parts have individual functions more developed than do other parts. Some have such functions as rhythmicity, conjunctivity, or contractility more developed, while it is fairly certain that some have the function of tonicity more developed than others have. As the integrity of the valvular apparatus depends upon the tonicity of the muscle fibers forming the auriculo ventricular rings, the cause of the functional murmurs at the mitral and tricuspid orifices may be explained as due to a depression of tonicity affecting these muscle fibers. The writer declares that the most striking instances of depression of tonicity occur with the failure of compensation which is seen in cases of valvular disease, the dilatation being the main evidence. Exhaustion of the muscle doubtless plays the principal part in such cases. One of the cases mentioned in this article is one in which there existed both a depression of tonicity and of conductivity during a profound anemic condition. Both functions were restored upon the disappearance of the anemia.

The Parathyroids in Graves's Disease.—S. G. Shattock gives a description of a specimen of exophthalmic goiter. The microscopic sections of the parathyroid showed groups of fat cells rather abundantly scattered through the proper glandular tissue. The latter was so compact as to resemble superficially, lymphatic tissue. Well-formed arterioles in conspicuous numbers ran in the primary trabeculæ of the interstitial connective tissue. The gland cells were polyhedral, the cell body of good size, and furnished with a spherical nucleus. At the borders of the intraglandular trabeculæ of connective tissue there was a certain grouping with no definite arrangement of the gland cells, brought about by the penetration of the capillaries into the mass. No trace of lumen in the cell groups was to be seen. The writer believes that the condition of the parathyroid in this case may be regarded as the regular one.

On the Pathogenic Ticks Concerned in the Distribution of Disease in Man.—R. Newstead gives the following list of ticks which are concerned in the transmission of human diseases: *Ornithodoros moubata*, *Argas persicus*, and *Dermacentor reticulatus*. The complete life-cycle, with much valuable information regarding the habits of the former, which is concerned in the transmission of spirillum fever in man has been thoroughly worked out. The writer presents in detail the differential characters of this tick. Very little is known of the Miana bug (*Argas persicus*) with regard to its injury to man. However, it is said to be a terrible scourge to travelers, both in Persia and Beluchistan. This species, or a closely related one, *A. miniatus*, is also responsible for the transmission of the spirillosis of the domestic fowl. *Dermacentor reticulatus* is the tick which was thought by Anderson to be responsible for the transmission of spotted fever or tick fever in the region of the Rocky Mountains in America. The theory of this investigator was founded on the ground that the fever was always found where there was a history of tick bites about a week before the onset of the fever. This claim has not been substantiated.

Hyperpyrexia Following Traumatism.—R. E. Humphry reports this case. The patient was a big burly man, thirty-two years old, who was struck when in a stooping posture on the nape of his neck, occiput, and upper part of the shoulders, by a sack of ashes weighing seventy-two pounds, which fell from a height of twenty-two feet. Twelve hours after the accident, breathing was labored and stertorous. Respirations were thirty-eight per minute, with tendency to Cheyne-Stokes rhythm. Both costal and diaphragmatic movements were impaired. The pulse was one hundred and fifty regular, in force and rhythm, but was becoming weaker, smaller, and ill-sustained with a slight dicrotic wave. The temperature taken in the axilla and between the thighs was 109.1° F. No twitching of the facial muscles was seen. The heart sounds were good but many adventitious sounds could be heard in both lungs. The pupils were equal, a little contracted, and looked straight forward. The abdomen was rather distended and tympanitic. A post-mortem examination could not be made. The writer surmises that the thermogenic, vagus, and phrenic nerve centers in the medulla were functionally disturbed, or otherwise influenced as a result of the concussion.

Intestinal Sand.—Percy W. G. Shelley describes this case. The patient, a woman sixty-two years old, first complained of acute intermittent pains in the stomach, and constipation. A tumor could be felt near the pyloric end of the stomach. Diagnosis of cancer of the pylorus was made. Three months later diarrhea set in and the motions consisted of fecal matter, mucus, blood, and undigested particles of food. Certain round bodies about an eighth of an inch in diameter, smooth, round, and of a dark-brown color, and extremely hard began to appear; they were regarded as intestinal sand. Death occurred soon after the appearance of the secondary growth. The writer states that possibly the sand was formed because the larger intestine in such cases has to assume abnormal functions such as that of the elimination of phosphates.

Berliner klinische Wochenschrift, December 25, 1905.

New Questions in the Epidemiology of Typhoid.—Kutscher, in discussing the epidemiology of typhoid fever, says that the more careful supervision of water supplies has been followed by an already noticeable diminution in the number of typhoid epidemics. More and more prominence in the dissemination of infection is, however, being assumed by the so-called "bacilli carriers." These are individuals who, while apparently healthy, harbor in their bodies large numbers of typhoid bacilli which they continually spread by their excretions. According to Lentz about 4 per cent. of all the cases, bacteriologically studied, were to be regarded as chronic bacilli carriers, and in many of these it was not possible to determine whether or not they had formerly gone through with a manifest typhoid infection. It appears that women oftener serve as permanent hosts to the typhoid bacillus than men. No method has yet been discovered by means of which it is possible to free the bacilli carriers from organisms. Internal medication always has only a temporary effect showing that the bacilli must be concealed in some situation inaccessible to the drugs ordinarily given by mouth. Both experiments on animals and post-mortem examinations on typhoid cadavers indicate that the gall-bladder probably affords the lurking place for the typhoid bacilli. Another element in the spread of the disease to which greater importance is being attached now than formerly is the matter of contact infection. It has often been observed that in limited outbreaks of the disease those infected have been only persons who have come into more or less intimate contact with the first patient, whereas other inhabitants of the same village who have used the same water or milk supplies have remained free from the disease. It accordingly appears that greater attention than before must be paid to the isolation of patients, and the thorough disinfection of all linen, dishes, and other articles coming in contact with the patient, as well as the excretions. The attendants of the sick person must also exercise particular caution in disinfecting their hands. The bacilli carriers present a more difficult problem to deal with, but it is evident that strenuous efforts must be made to prevent infection of others in this way. They must be enjoined to dispose of their urine and feces properly, and must also be debarred from occupations concerned in the production of food products and especially of milk.

Affections of the Pancreas in Diabetes.—Hirschfeld, in discussing this subject, says that pancreatic diabetes may be assumed when there is interference with the absorption of food, especially if impaired absorption of the albumins and fats proves a disorder of the secretions of the pancreas, and also in cases in which attacks of pancreatic disturbance are observed. In diagnosing such affections of the pancreas, attacks of pain are especially important, and these must be distinguished from gallstone colic, angina pectoris, and gastric affections. The attacks of pain are often so slight that the patients do not mention them unless questioned. An acute exacerbation of the diabetic condition which cannot be explained on other grounds is strong evidence in favor of pancreatic disease. Another important diagnostic sign is the presence of circulatory disturbances evidenced by the absence of an increased secretion of urine after large amounts of fluids have been taken. This test can be applied only after the acute manifestations have subsided; in some such cases edema of the extremities may also be observed. The pancreatic attacks usually last from one to four months, and ordinarily the prognosis is good; there is, however, a pronounced tendency to relapse, and sometimes the damage to the excretory function for carbohydrates remains permanent. The pancreatic involvement may also lead to the onset of fatal coma.

Münchener medizinische Wochenschrift, December 26, 1905.

The Hot Air Treatment of Pelvic Inflammations.—Jung reports on 120 cases of this sort treated by con-

servative means in the Gynecological Clinic at Greifswald. The apparatus employed was based on that designed by Polano for the application of Bier's principles of hot air treatment. Of the 120 cases 25 showed little or no improvement, and in 13 a subsequent operation was necessary. This was owing, however, to the social position of the patients, which rendered the shorter convalescence following radical procedures preferable to the longer period of absence from work demanded by the conservative treatment. After deducting these unsatisfactory cases the proportion of instances in which success followed the treatment is about 80 per cent. In regard to the indications for the operation the author says that pelvic exudates with inflammatory conditions about the adnexa, chronic adhesive pelvic peritonitis, chronic parametritis and post-operative exudates about pelvic stumps, are all favorable conditions. If pus is present it is advisable to perform a vaginal incision for drainage and then to use the hot air treatment after subsidence of any acute manifestations. The hot air treatment is not at all suitable for acute cases, in which it is likely to do more harm than good. It is also not to be recommended in tuberculous conditions of the pelvic organs. While the author does not wish to discredit surgical procedures or the older methods of conservative treatment, he considers that the hot air principle is one of great value and that its application should be further extended in gynecological practice.

Acetone Imbedding Methods.—Brunk speaks very highly of the value of acetone as an agent for use in the preparation of microscopic sections. It is well adapted as a substitute for the much more expensive absolute alcohol, and in some respects is superior to it. He describes the following rapid method of fixation and imbedding, which permits the preparation of very thin paraffin sections in from 40 to 80 minutes. The bits of tissue, which should be as small as possible, are placed without previous fixation directly into a closed bottle of pure acetone having at its bottom a layer of exsiccated copper sulphate covered with blotting paper. According to the size and structure of the specimens they remain in the acetone for from 20 to 50 minutes, or until on pressing them between the fingers it appears that they are uniformly hardened. They are then put into xylol for from 5 to 10 minutes, a step which slightly complicates the procedure but adds greatly to the rapidity with which the paraffin permeates the tissue. From the xylol the specimens are put into paraffin and may be blocked in from 15 to 20 minutes. Unlike alcohol, acetone does not require to be used in graded strengths in order to avoid shrinkage. Any of the ordinary methods of fixation may also be used if desired in connection with the acetone process.

Brachialgia.—Brassert calls attention to this affection which he says Oppenheim has several times described and stated to be relatively frequent. The affection is a purely psychic, unilateral, diffuse pain in the arm, which does not follow definite nerve tracts. It develops on a neuropathic basis and is usually accompanied by other nervous symptoms. It must be diagnosed from neuralgia, neuritis, spinal affections, as well as from disease of the bones, vertebræ, joints and muscles. The author describes a case of this sort which originated in a neurotic young mechanic, who presented no definite symptoms except the ostensibly severe brachial pain; this was alleged to have followed the appearance of a small reddish area on the forearm. Various forms of local and anodyne treatment were employed without the slightest effect. The diagnosis then became clear and the patient was ordered to use the arm freely, local applications were stopped and systematic treatment by hydriatic procedures, etc., directed to the general neurasthenia was substituted. Complete disappearance of the disability and pain promptly followed. The author explains the development of the symptoms in this case through the patient's concentration of mind on what probably was a furuncle, and the associated idea of attendant painfulness. As soon as the attention was diverted from the region affected recovery was rapid. It is suggested that the so-called reflex neuralgia often accompanying finger injuries may be of the same nature.

Deutsche medizinische Wochenschrift, December 28, 1905.

The Serum Treatment of Scarlatina.—Schick strongly urges a more extended application of Moser's antistreptococcic serum treatment in scarlatina. This has already been made the subject of extensive trial with satisfactory results in Russia, where epidemics of scarlatina of severe type are especially frequent. Schick reports 60 cases in which the serum was used, with a mortality of 16.6 per cent.; these were, however, the 60 severest and least hopeful cases out of 660 instances of the disease. In other words, the serum was used only in cases in which there was no hope from other methods of treatment and in which there seemed nothing to lose and everything to gain. The usual dose was that first recommended by Moser, 200. c c., though in two instances double that amount was injected. A serum reaction was noted in about three-quarters of the cases but it was nearly always slight and never interfered with convalescence

Chancre of the Eyelid.—Kowalewski, in discussing the occurrence of extragenital chancres says that primary lesions of the eyelid occupy only the sixth place in the order of frequency, following the lips, breast, interior of the mouth, finger, hand and tonsil. Of persons with syphilitic ocular affections chancre is observed only once in from 3,000 to 10,000 cases. He describes the case of a young woman who for six weeks had been treated by various physicians for an ulcerated area situated on the upper eyelid. The author's diagnosis of syphilis was soon confirmed by the appearance of a roseola and the patient's admission that she had permitted a male acquaintance to kiss her about the eyes and cheeks. Under mercurial treatment administered by hypodermic injection the rash promptly disappeared and the local lesion very soon healed completely. Microscopic preparations made from the surface and also from the deeper layers of the ulcer revealed the *Spirochæta pallida* in large numbers, as did also smears made from the abdominal and genital papules. Fluid obtained by aspiration from the enlarged cervical glands did not contain any of the organisms. At a latter examination, after three injections of bichloride of mercury had been given, no spirochetes could be found in a large number of smears made from the local lesion. The author emphasizes the value of the spirochetes as a diagnostic index in doubtful cases of this sort.

French and Italian Journals.

Some Hygienic Precautions in the Late War Between Russia and Japan.—Laval states that the vessels which were equipped with evaporators used distilled water. The other ships, such as the torpedoes, were furnished with water by two ships which were equipped with distilling apparatus which could produce about three hundred tons of water daily, and which accommodated 5,000 tons of water. With this supply the ships never lacked water. As to recreation, the men were encouraged on all possible occasions to sing military songs and to practice jiu jitsu. The only infectious diseases which made their appearance were enteric fever and dysentery. Even in times of peace typhoid fever has occurred. The average occurrence of such diseases in peace was not greatly exceeded during the war. The total number of cases were two hundred and forty-one. The men who were attacked were put on the hospital ships and their possessions were carefully disinfected. A few cases of dysentery broke out in August and September, 1904, during the siege of Port Arthur. Suzuki thought that flies were responsible for this light epidemic. These insects literally invaded the ships when they approached the Chinese junks for inspection. Strict measures were taken to destroy the flies, and meat was well baked before it was consumed. The dysentery disappeared almost immediately.—*Le Caducée*, December 2, 1905.

Apyretic Basal Pleuropulmonary Congestions as a Forerunner of Tuberculosis.—Vennat calls attention to a special form of pleuropulmonary congestion which he has observed in fifteen patients from fifteen to twenty-five years of age. The beginning of this infection is insidious. It is characterized by emaciation, asthenia, dyspnea, a dry and rare cough, and complete apyrexia. Examination reveals dullness, friction rubs, and râles. The evolution is slow and it is only when the general condition becomes improved that the pulmonary symptoms become ameliorated. Indeed it is the ordinary treatment of beginning pulmonary tuberculosis that is indicated. In a few of these cases heredity is a strong factor. On account of the slight functional symptoms which are manifested in this affection very careful auscultation should be practised on these cases.—*Le Bulletin Médical*, December 2, 1905.

Pulmonary Hypertrophy.—R. Tarantini tells us that in certain pathological conditions there is a limited hypertrophy of some of the tissues of the lung. In young individuals in whom, either by disease of the lung or pleura, the work of one lung is diminished and impeded, the other lung undergoes compensatory hypertrophy. An emphysema may follow this compensation, just as the dilated heart follows hypertrophy, and insufficiency sets in. Impeded function of one lung of a young animal causes the other to hypertrophy. There is increase of the elastic and muscular fibers, thickening of the vessel walls and increase in size of the alveolar lumen. It is not possible to state whether there is a formation of new alveoli.—*Il Policlinico*, December, 1905.

Book Reviews.

Précis de Laryngologie, Clinique et Thérapeutique, par le Dr. P. Lacroix, membre de la Société de Laryngologie et d'Otologie de Paris. Paris: F. R. de Rudeval, 1906.

This work follows familiar lines. It comprises four parts; the first is devoted to general methods of examination, diagnosis, and treatment; the second treats of the pathology of the pharynx, the third, that of the larynx, while in the fourth the author discusses the syndromes of laryngeal dyspnea, hemoptysis, throat cough, disphagia, affections of the voice and of speech. It is in a sense a clinical synthesis of the two preceding parts. Nothing essentially new as to fact is presented, but the work as a whole is a full and complete exposition of modern laryngology. For American students and practitioners, it offers no advantages over works produced in our own country, except as it may present the subject from the French point of view; and the well-rounded man does well to look at his subject from all points of view.

Chirurgie Oto-Rhino-Laryngologique, par Georges Laurens, Ancien Assistant d'Oto-rhino-laryngologie des Hôpitaux de Paris. Avec 470 figures dans le texte. Paris: G. Steinheil, 1906.

In this ponderous volume is presented a complete exposition of the modern surgery of the ear, nose, and throat. Preliminary chapters are given on the general subjects of illumination of the special fields, anesthesia, asepsis, and hemostasis. Then follow the special applications of these facts together with full descriptions of the various surgical procedures. Such publications can manifestly contain little that is essentially new, for they are built up from current literature and are designed to preserve that clinical knowledge which has proved itself to be of permanent value. Most of the illustrations, however, have been prepared expressly for this work and many of them have the charm of freshness, not being mere reproductions from older text books. We may mention as of especial value the sections on sinus disease, otocerebral complications, and laryngotracheal conditions, including bronchoscopy. The advance in the last decade in the field of surgical intervention in maladies of these regions has been very marked and the exposition of these portions of the general subject is fully up to date. Prof. Laurens' own contributions to literature have been many and valuable, and his name is sufficient guarantee of both the literary excellence and the professional value of the chapters he has here collected. Many operations which have been but briefly mentioned in the current journals are here figured and described with the utmost minuteness. Mere historical matter has been omitted. The consequence is that the work is an encyclopedia which will long remain the standard work of reference in this special field.

A Manual of Chemistry, Inorganic and Organic, Covering the Synopses of the Conjoint Board and the Society of Apothecaries. By Arthur P. Luff, M.D., B.Sc. Lond.), F.R.C.P., F.I.C, Physician to St Mary's Hospital, and Lecturer on Medical Jurisprudence in the Medical School; and Frederic James M. Page, B.Sc. (Lond.), F.I.C., Associate of the Royal School of Mines, Lecturer on Chemistry and Physics in the London Hospital Medical College, Examiner on Chemistry and Physics to the Society of Apothecaries, London, etc. Illustrated with forty-three engravings. Third edition, revised throughout. Chicago: W. T. Keener & Co., 1905.

As indicated in the title, this manual is designed for medical students who have to take the examination in Chemistry before the Conjoint Board or the Society of Apothecaries. To such, the book will be of value. Others may also find it of assistance in acquiring a sound knowledge of the fundamental principles of Chemistry. The book is well prepared, explanations of terms are clear and concise, there is an unusually large number of equations, and the book concludes with some useful tables for the analysis of a simple salt and of a substance containing two bases.

Operative Surgery, for Students and Practitioners. By John J. McGrath, M.D., Professor of Surgical Anatomy and Operative Surgery at the New York Post-Graduate Medical School, Surgeon to the Harlem, Post-Graduate and Columbus Hospitals, New York. Second Edition. Philadelphia: F. A. Davis Company, 1906.

A practical knowledge of anatomy is essential to the proper study of surgery, and in this volume the effort has been made to combine the two, excluding, however, on so doing the strictly technical aspect of the former. The second edition of Dr. McGrath's book contains much new matter relating chiefly to abdominal surgery and to recent advances in prostatic surgery. The entire domain of surgery is included in the work, with the exception of the gynecological operations. The illustrations are numerous and largely diagrammatic, but amply serve the purposes of the text. The latter is marked by conciseness and the book as a whole may be commended as a practical manual for the purpose for which it is intended.

Radiotherapy in Skin Disease. By Dr. J. Belot. With a preface by Dr. L. Brocq, Physician to the Broca Hospital, Paris. Translated by W. Deane Butcher, M.R.C.S., Surgeon to the London Skin Hospital. Only authorized translation from the second French Edition. With thirteen plates and twenty-eight illustrations. London: Rebman, Limited; New York: Rebman Company, 1905.

Since the original of this work was reviewed in these columns last year we can refer to the favorable estimate then put upon the text. As to the work of the translator, Dr. Butcher, we can say that he has done well, in a task not free from difficulties. Any work loses more or less of its personality, so to speak, in being transposed into another tongue, but here it would appear that this loss has been reduced to a minimum. The intricate descriptions of apparatus and mathematical formulas and equations have been reproduced with painstaking accuracy. The quantities of rays administered are throughout referred to in terms based upon the unit of the Holzknecht chromoradiometer. This has the advantage of enabling the author to enter into repeated long explanations and offers a scientific basis for comparisons. On the whole, the work is one of merit and practical utility.

The Prevention of Senility and a Sanitary Outlook. By Sir James Crichton-Browne, M.D., LL.D., F.R.S., Lord Chancellor's Visitor in Lunacy. London: Macmillan and Co.; New York: The Macmillan Company, 1905.

This little book contains two addresses delivered by the author to audiences drawn together by their interest in vital economy. The essay on "Senility" is the shorter, but the more interesting of the two—at least to those who have passed Osler's dead line. It contains nothing very startling nor any new rules for the preservation of youth, but it puts the old rules in a pleasant way. Dr. Osler gets a few gentle raps and Metchnikoff and his macrophages are dismissed with contumely. Sir James will have none of the sour milk diet. He commends life insurance for the "composure of mind it has secured," but he evidently did not have in mind the presidents and other officers of the New York companies in these latter days of stress and distress. In the essay on "A Sanitary Outlook," the author takes a sober but hopeful view of what sanitary science has accomplished and will accomplish for the good of dwellers in city and country. The addresses are very readable, and the author has done well to widen his audience by offering them in a form accessible to those who had not the privilege of hearing them at the time they were delivered.

Faulty Diction, or Errors in the Use of the English Language and How to Correct Them. By Thos. H. Russell, LL.B., Editor-in-Chief of Webster's Imperial Dictionary. Chicago: Geo. W. Ogilvie & Co., 1905.

This little book of "vest-pocket" size contains a great deal of very useful information regarding the correct use of the English language. Illustrating the comprehensive treatment that has been given the subject by the author, there are 1017 headings treated in the book, under some of which —"plurals" for instance— over fifty errors that are not at all unusual are to be found illustrated and corrected. A commendable feature of the book is its moderation. The author insists upon the correct use of language, but he does not demand a slavish adherence to rule to the destruction of freedom in diction: "It must ever be borne in mind," he says, "that the English language rebels against hard-and-fast rules," and for this the idiomatic writer owes him thanks. The book will be found of service to every one who respects his mother tongue and would avoid its misuse.

Nouveau Traité de Médecine et de Thérapeutique, publié en fascicules sous la direction de MM. P. Brouardel et A. Gilbert, Professeurs à la Faculté de médecine de Paris. Maladies Exotiques; par MM. Netter, Mosny, Deschamps, Thoinot, Wurtz, Vaillard, Hallopeau, Jeanselme, Guiart, Lancereaux, Richardière. Avec 28 figures intercalées dans le texte. Paris: J. B. Baillière et Fils, 1905.

The diseases discussed in this volume are: Typhus, relapsing, yellow and Malta fevers, plague, Asiatic cholera, dengue, kala azar, dysentery, tropical diarrheas, leprosy, yaws, Peruvian wart, Madura foot, filariasis, billiarzia, scurvy, beriberi, lathyrism, and a few miscellaneous and minor troubles. The more important of these conditions are very fully treated; the information is, as a rule, of the latest; the amount of space alloted to each topic is well proportioned; and in all respects the volume is one which reflects credit on the authors and editors. The work is to be completed in forty volumes, of which this is the sixth.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held December 26, 1905.

Dr. Floyd M. Crandall in the Chair.

The evening was devoted to papers on digestive disorders and abdominal pain from the standpoint of the surgeon (surgical conditions frequently occurring in the practice of physicians).

Ulcer and Cancer of the Stomach.—Dr. Charles N. Dowd read this paper. (See page 91.)

The Gall-Bladder, Pancreas and Gastric Adhesions.—Dr. John F. Erdmann read this paper. (See page 93.)

The Appendix.—Dr. John A. Bodine read this paper. He said that pain was most prominently connected with acute infections of the appendix, while digestive disturbances were more especially associated with the chronic phase of the disease. Sudden severe pain was the invariable symptom of acute appendicitis, but it was likewise a symptom of all acute abdominal lesions; therefore, its presence alone was of no diagnostic value. There should be considered the location, the quantity, and the quality of the pain. In any sudden abdominal pain appendicitis should be suspected. If characteristic, the first manifestation of pain was in the umbilical or epigastric region; later it was localized over the situation of the appendix, in the pelvis, right iliac fossa, or under the liver. It was always cramp-like and colicky, recurring at short, irregular intervals. It was to this primary pain the wave-like colicky attributes must be appended, because the succeeding or secondary pain was entirely different; this was the steady, deep ache of established inflammation and subjectively located by the patient at the nearest surface point overlying the inflamed appendix. In addition to this secondary pain, a reflected pain along any somatic nerve that lay adjacent to the organ might exist. A clear knowledge of this preferred pain not only elucidated diagnosis but accurately defined to the surgeon beforehand the position of the appendix. A profitable way to study abdominal pain and its symptomatic significance was through an anatomical knowledge of the nerves expressing the phenomenon, with an appreciation of the physiology of "referred" pain. Pain *per se* was an elusive, subjective quantity, while pain "referred" was objective and rested upon a hard-and-fast anatomical basis. Each abdominal organ possessed a sensory nerve supply from one or more of the great sympathetic plexuses which, in turn, were connected with the spinal cord. Pain impulse originating in an organ which was inflamed, was sent by this means to the cord, and this same impulse was carried efferently through whatever somatic nerves arose from that segment of the cord, and pain as a resultant was expressed at the terminal distribution of these nerves in the skin. Hence, an essential attribute of this "referred" pain was its superficial location, the area being simply hyperalgesic, and not elicited by deep pressure, but by pinching or stroking the skin. If then this phenomenon of "referred" pain was present it became a matter of thorough knowledge of the somatic nerves supplying this area to trace backwards to the segment of cord from which they originated and to follow the sympathetic nerves from the same segment of cord to the deep-seated organ at fault. The "referred" pain at the umbilicus in appendicitis lost any positive diagnostic value for the reason that the superior mesenteric plexus referred pain to the same region from the whole digestive tract below the duodenum, including kidneys and spleen, mesentery and omentum, but excluding descending colon, sigmoid, and rectum; negatively, however, it became of great importance. Murphy had lately attached a diagnostic importance to this pain far superior to any of its qualifying attributes mentioned. It rested in the position of the pain in an orderly sequence of the four cardinal symptoms of acute appendicitis: (1) pain, sudden and severe, followed by (2) nausea and vomiting, (3) abdominal tenderness accentuated on the right side, (4) elevation of temperature. These cardinal symptoms, occurring in this sequence, made the diagnosis of acute appendicitis almost positive, while the same symptoms appearing in a disorderly army negatived the diagnosis with equal certainty. The normal subsidence of pain in acute appendicitis was gradual and not sudden. The sudden cessation of pain on the second or third day of the disease was usually the beginning of the end of the patient rather than the end of the disease. In the presence of profound septic peritonitis operation was resorted to as a last chance; if careful and prolonged auscultation showed no boborygmi the operation was useless and should be refused. An operation here would discredit the only remedy which, when properly and timely applied in this disease, could save ninety-eight or ninety-nine out of a hundred. The interrelation between appendicitis and digestive disturbances became a broad one when the chronic phase of the disease was considered; but here the appendix stood convicted unqualifiedly as the etiological culprit. To epitomize he said that a patient with some tenderness in the right iliac region, with malaise, headache, furred tongue, nausea, bowel distention or fermentation, constipation or diarrhea, with or without an antecedent attack of appendicitis, in whom medical treatment failed to cure, should have a consultation as to the advisability of removing the appendix.

The Lower Intestine.—Dr. James P. Tuttle said that pain was one of the most uncertain and unreliable symptoms with which one had to deal. Pain in diseases of the large intestine was never a pathognomonic symptom but should be judged of by its character, its site, its association, and the individual in whom it occurred. Pain in the abdomen derived significance largely from the individual in whom it occurred and its own character. Hyperesthetic, neurotic, rheumatic, gouty, hysterical individuals might have pains in the abdomen as anywhere else, with little or no significance; while in persons of phlegmatic nature, with good general health, the presence of abdominal pain was always to be looked upon seriously, especially if it was associated with chill, fever, and rapid pulse, or if it was dull and persistent with associated anemia and loss of flesh. As a rule acute colic in a healthy individual was very significant, but if it occurred in sufferers from chronic mucous colitis it was never looked upon with seriousness. In patients with symptoms of beginning locomotor ataxia, acute paroxysms of pain along the colon were not dangerous but were significant from a diagnostic point of view. The conditions in the large intestine which occasioned pain were as follows: Acute colitis, pain sharp, griping; chronic colitis, pain rarely severe, accompanied with a feeling of distention and discomfort; enteroptosis, pain dragging with sense of fullness in pelvis; inguinal hernia, neuralgic, aching pain, shooting down leg and scrotum; impactions, dull aching at first, transformed into acute tenesmus and griping; acute flexure or volvulus, pain acute, griping at first, later a persistent dull aching at the point of the trouble, with periods of acute radiating tenesmus; ulcerations might give rise to no pain at all, but if present it was usually griping in character; strictures, no pain at all at first but as the caliber narrowed and the walls thickened, griping tenesmus and distention increased until actual obstruction occurred with all its category of intense general abdominal pain, nausea, etc.; neoplasms, slight nagging or griping pain with diarrhea at first, followed by dragging and lancinating pains with increasing constipation, change in the complexion, and loss of flesh. Abdominal pain from pure mental conditions did exist, but was comparatively rare. Enthusiastic specialists had found in practice and the literature a few cases of reflex pains in the abdomen or elsewhere associated with rectal disease, and had generalized so widely that one would imagine from their writings that the presence of a fissure, piles, or rectal ulcer would account for all the pains a patient could have. Occasionally one did see abdominal and remote

pains relieved by operation on the rectum, but more often they remained the same. One should exercise great care and conservatism in promising relief of abdominal or other pains by any operation on the rectum. Abscess of the suprapubic space did produce abdominal suprapubic pain. Retrorectal abscess did the same, though usually in the inguinal or hypochondriac region, owing to the direction of the lymphatic channels in this area. Distention and abdominal pain might result from reflex functional disturbances in rectal diseases, and they might also come from stricture, neoplasm, or other forms of occlusion of the alimentary tract. Simple fissure might sometimes cause abdominal pains, reflexly or by sheer exhaustion of the patient with development of a nervous sensibility in the intestines which made the simplest peristalsis painful, not so much in itself as in the suggestion of the necessity for a stool which in such cases caused agony. These cases, however, were rare and so also were the cases in which piles produced any true abdominal pain. He summed up by saying that pain in diseases of the large intestine was never a pathognomonic symptom but should be judged of by its character, site, association, and the individual in whom it was found.

Dr. Howard Lilienthal said that Dr. Dowd expressed the attitude of the medical profession when he stated that cancer of the stomach was accepted as a surgical disease in theory but was rejected in practice. He believed that Dr. Dowd might have gone even further and said that when the disease had progressed so far that few surgeons would operate then the medical man came to the opinion that it was a surgical disease. That was the wrong time to form such an opinion. Indigestion was becoming more and more a vague term, and any physician who made such a diagnosis without very careful examination was either ignorant or not conscientious. When so-called indigestion persisted in spite of the use of the ordinary remedies it was time to call in a consultant. Most gastrologists made such fine diagnoses that it was sometimes too late in the malignant disease before the surgeon got it for good to come from operative work. In simple exploratory work, if silver wire sutures were used he found that patients could get from bed within forty-eight hours. It was not a grave or serious operation. Dr. Lilienthal called attention to the hopelessness of cancer of the cardiac end of the stomach, and he expressed the hope that surgery in this region would become more successful. He referred to the use of the air chamber, the head of the patient remaining without it, while the body and the operating field, with the operator and assistants, were within, so preventing collapse of the lungs when the chest was opened. Gall-bladder troubles were often mistaken for malignant disease. Out of a great many cases that he had operated upon (86 in which the gall-bladder was removed primarily and many more in which the palliative operation had been performed before the radical one) fully 75 per cent. of those cases had been treated for months and months, and even years, for malignant trouble before the proper diagnosis had been made. The dangers of gall-bladder disease could not be overestimated. With regard to pancreatic disease he said that we were now in the beginning of the study of diseases of this organ. He recollected six cases that he had had, five being very acute, two of which he saved. The sixth case was one of carcinoma, which he operated upon, removing a small piece for examination; in this case there was an intermittent obstruction. In none of the acute cases was there any glycosuria and the diagnosis was made only by guess. Fat necrosis was present in all. He had seen patients suffer terrible anti- and post-operatice pains from adhesions. The simulation of pneumonia by appendicitis was to him interesting. One year ago he saw a child who had been seen by many eminent medical men. The family physician said the child had some abdominal condition, probably an intussusception, but the other gentlemen thought the child was suffering from some intrathoracic disease, probably a pneumonia. Dr. Lilienthal asked for operation but this was refused. The child died from appendicitis, and general peritonitis. Dr. Lilienthal spoke of the insensitiveness of the large intestine as shown early in his operative experience in doing a colostomy. The arteries of the mesocolon were practically insensitive.

Dr. George E. Brewer believed that the surgical treatment of the digestive organs would gain ground from now on. Practically all disorders of the digestive organs a few years ago were thought to belong to the general practitioner. He spoke of the great controversy regarding the medical *versus* surgical treatment of appendicitis, and said that the study of the pathology at the time of operation had convinced the medical men, so that to-day there were exceedingly few who held that appendicitis should be treated medically. The same position was held regarding the treatment of gall-bladder disease; but with increased knowledge of the pathology, the greater research, etc., the unanimous conclusion was reached that, in the majority of these cases, the diseases were better treated surgically than medically. The results that followed surgery of the gall-bladder were far in advance of those that followed the medical treatment. Again, in diseases of the stomach to-day the same position was held as was held regarding diseases of the gall-bladder a few years ago, and of appendicitis before that. With regard to cancer of the stomach there was absolutely no difference of opinion among medical men and surgeons. A patient with cancer of the stomach, if left alone, would live from thirteen to eighteen months; surgery could give far better results than that. Kocher, for instance, in 98 radical operations saved 12 per cent. more than could be saved by medical treatment. Mayo got 25 per cent. of recoveries, *i.e.* cases in which life was prolonged over three years after operation. The only thing that would save life in cancer of the stomach was an early operation. A palpable tumor was an indication that the case had gone beyond the chance for surgical cure. The presence of an obstinate dyspepsia in an individual of the cancer age that could not be relieved by the ordinary methods of treatment, would cause grave suspicion of cancer, and that patient should be treated with such possibility in view. The only way to make a satisfactory diagnosis was by exploratory incision. Ulcer of the stomach he believed to be one of the fruitful causes of chronic dyspepsia, the most of any lesion in the abdominal cavity. Unquestionably it was present in from 5 per cent. to 20 per cent. of all dyspepsias. In a large number of instances ulcer of the stomach was not diagnosed.

Dr. Max Einhorn demonstrated a method for determining the functional condition of the digestive tract. He referred to the work of Smit of Dresden, who examined the stools of patients after they had eaten the test diet, consisting of milk, eggs, meat, and starchy foods. Such a diet had to be given three or four days and then examination of the stools was made, both microscopically and chemically; such testing was very difficult, so Dr. Einhorn had devised another method. Instead of giving a certain diet and examining the stools, he attached the food stuff to little beads in such a manner that it could not get off. The patient was given such a bead with its attached food stuff and afterwards the beads were obtained from the stools and it could be learned if the food stuff had been digested or not.

Dr. Dowd closed the discussion. He emphasized the point that cancer of the stomach was primarily a surgical disease, *i. e.* the surgeon got better results than could be gotten from any form of medical treatment.

Action of the Comitia Minora.—The Comitia recommended that the president be empowered to appoint a committee of three to revise the by-laws of the Medical Society of the County of New York to conform to those of the Medical Society of the State of New York, as required by law, proposed changes to be sent to each member before the meeting in January, 1906, at which meeting they would be presented for adoption. This was

put in the form of a motion, was duly seconded and carried.

House of Delegates.—A report of the transactions of the House of Delegates was submitted to the County Society. This report appeared in the MEDICAL RECORD December 23, 1905, page 1023.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, Held in Kansas City, Mo., December 28 and 29, 1905.

PRESIDENT DR. H. D. NILES, SALT LAKE CITY, UTAH.

The Transvesical Operation for the Relief of Prostatism in the Aged.—Dr. CHARLES E. BOWERS of Wichita, Kansas, read a paper on this subject. He stated that more conservative and rational operations would yield better results and lower the mortality percentage. An exact diagnosis in many cases could be made only upon suprapubic exposure of the vesical outlet. The suprapubic operation could be done with greater exactness and would yield better results than the infrapubic in morbid conditions in the male, as had been the case in the female pelvis. The suprapubic route was as rationally indicated for the relief of the above-named obstructive conditions at the urinary outlet as it was in vesical calculus. The perineal operation offered only 30 per cent. of cures, with a mortality of 7 per cent., and a 50 per cent. chance of having exchanged one urinary difficulty for another, and not infrequently a lesser for a greater one; while the transvesical operation entirely relieved all who survived it of their urinary trouble, if it was due to obstruction in and about the vesical outlet, except when they were carcinomatous in character, without sequelæ, and with the improved operative technique of to-day no greater mortality. The controversy that was now going on relative to perineal and suprapubic prostatectomy was only a repetition of the one waged when lithotomy was undergoing its evolution. Who to-day would cut for stone in the male bladder via the perineum? The most essential thing to-day was to bring home the facts to the profession in general. First, that prostatism was due to other causes than hypertrophy of the prostate gland. Second, that the transvesical operation for prostatism had attained a sufficient degree of perfection to be recommended to this class of pitiable sufferers, with the assurance of a cure if undertaken before the inflammatory process had reached the kidney and arrested its functional activity. Third, patients should not be submitted to catheterism in the future as they had been in the past until it was hopeless to interfere surgically.

Dr. HENRY T. BYFORD of Chicago, in speaking of the etiology of enlarged prostate, thought the condition was due to some irritation; that it could not come entirely from age alone or from the sclerotic changes which occurred with age. In some cases of enlarged prostate there was doubtless a gouty diathesis, and perhaps the treatment recommended by Fletcher in his book, of reducing the calories from 3,000 to 1,500, and perhaps dieting a little, would obviate the necessity of suprapubic prostatectomy in some cases.

Dr. JAMES E. MOORE of Minneapolis stated that twenty years or more ago he did his first prostatectomy suprapubically, and as it was done at that time it was a blind, bloody, and unsatisfactory operation. A few years ago, when perineal prostatectomy was suggested and practised so successfully, he took it up and had been advocating it ever since, always maintaining that there were certain cases that could be operated better by the suprapubic route as it was done at the present time. However, in his judgment a man was not broad gauged, he did not do the best work he could do, until he performed both operations. He believed the perineal route was the choice in the vast majority of cases and by the vast majority of surgeons.

Dr. W. W. GRANT of Denver said he had maintained for years that in the average case the perineal operation was the more desirable one. In cases in which there was pus, with hyaline and granular casts, the perineal route was indicated. The dirty cases could be better and more safely operated upon through the perineum; the clean cases by suprapubic cystotomy by the well-known modern methods.

Dr. J. W. ANDREWS of Mankato, Minn., believed that there were selected cases which should be operated upon by the transvesical route, but in the majority of instances the perineal route was the better. He had operated eleven times with one death. One of the operations was suprapubic. He found it difficult, unclean, and was unable to get good drainage. Lack of drainage was one objection to the suprapubic route. The drainage was not and could not be as good as it was through the perineum.

Dr. M. L. HARRIS of Chicago said that when one attempted to generalize from a few cases in surgery, these generalizations were always wrong. The essayist had generalized from 12 cases that the suprapubic route was the only one to be done, consequently he thought he was wrong. There were many cases in which a good and thorough operation could not be done suprapubically. There were also many cases in which the best operation could only be done suprapubically; consequently the surgeon must select the best operation for the particular case. Every case of prostatism should be accurately diagnosed before an attempt was made to select the method of operation, and the surgeon could make such a diagnosis only when he employed all the means at his command, and one of these was a thorough cystoscopic examination.

Some Observations on Renal Surgery.—Dr. D. W. BASHAM of Wichita, Kansas, in this paper dealt with certain questions concerning nephroptosis and features of suppurative diseases of the kidney, and pointed out the reasons why nephrorrhaphy sometimes failed to relieve the symptoms. He discussed the desiderata necessary to make the operation a curative one. He criticised the methods in vogue, and referred to the modifications necessary to make the operation a curative procedure by fixing the kidney in a natural position and obliterating the enormous pouch resulting from the mobility of the kidney. After discussing suppurative diseases of the kidney, and referring to the principal diagnostic points, operative intervention, sequelæ, etc., he reported four cases. The methods of Jacobson and Edebohls gave permanent results, so far as anchoring was concerned, but he thought the kidney was fixed too low in the loin, too far from the center of the vertebral column, and too near the anterior wall of the abdomen. There were many operations which anchored the kidney permanently, but which were open to objection from the standpoint that the organ was not held in the natural position. Surgeons did too many nephropexies without making a thorough and painstaking effort to ascertain the conditions of the kidney, its pelvis, and the upper part of the ureter.

Dr. A. W. ABBOTT, of Minneapolis said that in a series of over 2,000 examinations, only a very small number of kidneys could be felt beyond the limits described in textbooks, but this was not in accord with clinical experience. There were very few of these patients who presented any symptoms referable to the position of the kidney, largely due to the fact, he thought, that the upper part of the ureter fell with the falling of the kidney.

Dr. WILLIAM JEPSON of Sioux City, Iowa, said there existed undoubtedly a range of mobility of nearly an inch to every normal kidney, or rather a kidney that was normally placed. He believed that each case of movable kidney had to be considered by itself. A certain number of them had to be fixed. The author was not a firm believer in decapsulation of the kidney.

Dr. C. W. OVIATT of Oshkosh, Wis., said occasionally it was necessary to operate in cases of movable kidney. If an operation was undertaken, it seemed to him that

surgeons should profit by the teaching of Harris, promulgated several years ago, and obliterate the space beneath the kidney rather than try to suspend the kidney alone by either the fibrous or fatty capsule. If one simply suspended it, undoubtedly there would be a recurrence of the displacement. The space beneath the organ should be obliterated by the Harris purse-string operation, making a new pocket of peritoneum.

Dr. A. E. Benjamin of Minneapolis said he had laid down three or four rules for fixing the kidney. One was when it showed evidence of hydronephrosis due to a faulty position of the kidney, or to a faulty position or kinking of the ureter, not allowing free drainage. Another was where there was enlarged kidney, congested or dilated kidney, and where it was tender. On examining such patients one could elicit pain by palpating the kidney. Another condition was where the kidney seemed to produce obstruction of the alimentary canal, either the colon or duodenum, and accessory organs, such as the gall-bladder apparatus, the common bile duct, etc. In such cases the kidney was prolapsed, adherent down in the pelvis, and the patients were troubled with obstipation, but on putting the kidney in position and relieving the adhesions, the symptoms would partially or entirely disappear. Patients with dilated condition of the stomach and a diseased condition of the gall-bladder, when apparently due to loose kidney, were sometimes benefited if their cases were taken early.

Carcinoma of the Descending Colon.—Dr. W. W. Grant of Denver said that the rectum was the most frequent seat of intestinal cancer. The descending colon was next in order. Cancer of the stomach was more common than that of the intestines, and its progress was more rapid. Cancer of the colon was more common in man; it was not common under thirty years of age. It was primary and circumscribed. Metastasis and constriction were late occurrences. Chronic indigestion, both occasional diarrhea and mucous discharges, were suspicious symptoms. Ulceration was of late occurrence. Floating kidney and membranous colitis might exist a long time without producing marked symptoms or seriously disturbing the health. It was less malignant than the same disease of the stomach or rectum. It was not painful until late. Stenosis was not attended with striking symptoms until obstruction was complete. Mild malignancy and late infection demanded radical operation. More care was necessary in examination at an early period in order to detect disease. He reported a case of long duration. Typhlotomy was followed by radical operation later.

Dr. I. B. Perkins of Denver saw a woman, 62 years of age, about three weeks ago, in whom there was a tumor in the groin in the region of the cecum. It was supposed by the physician who had charge of the case to be an appendical abscess. It was very hard. There was vomiting of fecal matter and had been for twenty-four hours. He made a long incision in the right rectus, and on examination found a hard tumor but no pus. The appendix was caught in the mass, as were also the ileocecal valve and portion of the cecum. He resected the intestine and closed the end of the colon by the use of the Connell suture, then implanted the ileum into the upper portion of the wound. The patient did well except that there was a slight leakage at the outer and upper portion of the anastomosis, and there was a very small fecal fistula which he thought would close soon. He thought another time he would close the ends of both guts and make a lateral anastomosis.

Dr. A. W. Abbott of Minneapolis called attention to one feature connected with cancer. He had seen two cases of intussusception in his own practice and one in the practice of the late Dr. Dunn. He thought intussusception occurred more often in cancer of the large intestine than in that of the small. He had never seen a case in the small intestine, but he had no doubt it might occur. He thought it was wrong to make an immediate anastomosis in these cases; they were the ones in which a colostomy should first be made, because the condition about the cancerous area was such that the parts would not unite if one attempted ot sew them.

Dr. J. E. Summers of Omaha, in speaking of the location of carcinoma of the large intestine, said he had found it everywhere in the large intestine, except at the hepatic flexure. In dealing with carcinoma of the transverse colon it was necessary to manipulate the gastrocolic omentum. Unless this was done with the greatest gentleness one was apt to have a complication following the operation which might be serious, namely, hemorrhage into the stomach. A week ago he removed the transverse colon for carcinoma, and as a result of manipulation there was a serious hemorrhage from the stomach for several days. His attention was first directed to this complication some years ago after an operation for incarcerated umbilical hernia, in which it was necessary to remove considerable portions of the omentum, and the manipulations had been very rough. The operation was terminated without any special difficulty, but it was followed in two hours by profuse hemorrhage from the stomach, from which the patient died.

Dr. Grant, in closing the discussion, said he wanted to urge one point, namely, the symptoms of this disease were not pronounced at an early period; but when there were suspicious indications it was very important to use more care in examining these patients than the surgeon was accustomed to do. Under favorable conditions, when the bowels were thoroughly evacuated, the surgeon might discover the presence of a growth in the colon, and this was the time when operation brought about such satisfactory results, and also was the period when the operation could be completed at one sitting.

The Choice of Ligature and Suture Material in the Surgery of the Peritoneum.—Dr. H. G. Wetherill of Denver said he would no longer use non-absorbable ligature or suture material for purely serous surfaces. The absolute sterilization of catgut was no longer difficult, and it was now realized that so-called catgut infections usually had their origin in a contamination of the gut through handling or in allowing it to come in contact with unclean surfaces or substances in or about the wound. Then, too, the chromicizing process prolonged the life of even the smaller strands to any desired time, providing the mucous surfaces or secretions were not in contact with it. These features made of catgut an ideal suture and ligature material for intraperitoneal use, and all that became necessary was the exercise of due care and skill in the selection of the catgut and the application of sutures and ligatures and the making of knots. So far he had had the good fortune never to have had a secondary hemorrhage or other accident from the use of catgut, either in the way of a slipping knot or a too rapid absorption, and he believed this immunity from accident to have been due to the exercise of extreme care in its application. For about three years he had had great satisfaction in the use of the Downes electrothermic cautery clamp in selected cases, thus doing away with all ligature and suture materials around pedicles. For vaginal hysterectomy, particularly in cancer of the uterus, it was ideal. It promoted rapidity and safety in the work, and without doubt gave much greater security against the danger of recurrences in early cases. There was in his experience and judgment no doubt that patients operated upon with the Downes clamp by either the vaginal or abdominal routes had smoother and more rapid recoveries, and above all a very noticeable freedom from the intense pain and backache so common after all pelvic operations when the terminal nerves of this region were left for days or weeks in the bight of a securely tied ligature or closely applied suture. He had had one or two experiences with the Downes clamp, however, which led him to believe that there was increased danger from thrombosis and embolism after its use, occasionally occurring several weeks after opera-

tion, and until this doubt was settled he should be most careful in the selection of the cases upon which it was used.

A New Technique for Breast Amputation.—Dr. Jabez N. Jackson of Kansas City, Mo., described a new technique for use in radical operation for carcinoma of the breast. The method of operation was devised by him about eight months ago, and had since been used exclusively in all cases of this character with which he had had to deal. From his experience, although limited to eight cases, he believed that the method had certain elements of advantage, as well as originality, that justified him in presenting it for a wider field of service. After describing the method at considerable length, he emphasized the following advantages: (1) The flap formed a covering for the chest defect, as a rule, without any tension, and thus almost entirely obviated the necessity of grafting, so frequent in other methods. (2) The drawing of the skin up to the arm did away with the fossa axillaris, and thus with a large space which nature would have to obliterate by the formation of a scar tissue, with the resultant pressure upon the axillary vessels and nerves. (3) The ligation of all vessels at their nearest point of origin did away with the use of a large number of hemostatic forceps, which caused loss of time, to say nothing of the inconvenience of having a large number of instruments in one's way. (4) The most noticeable feature to the onlooker was the marked absence of hemorrhage, so that it could almost be called a bloodless operation. (5) The entire technical portion of the operation was completed before the chest was exposed by the removal of the breast; therefore, long exposure of an enormous area of raw chest surface, with the attendant shock, was done away with. As soon as the breast was removed the operator was ready to close the wound.

Dr. Charles A. Powers of Denver said the key to the operation described by the essayist lay in the flap which covered the large skin defect, and as such it appealed to him. He asked Dr. Jackson whether in any of the cases there had been any sloughing at the corners of the quadrilateral flap. Personally, he had been very much pleased with the procedure of Dr. J. Collins Warren, of bringing up a flap from the arm. The technique of Dr. Jackson's operation was easier, he thought, and he would certainly employ this method in the future.

Dr. Jackson, in replying to Dr. Powers, said that in some instances there had been slight sloughing at the corners of the flap. In recent cases by using a wide Halsted mattress suture for tension he got union without sloughing.

Fractures About the Elbow Joint.—Dr. W. D. Haines of Cincinnati said that the open method of treatment was to be commended in all cases of extensive joint involvement. After freely exploiting the joint cavity, freeing it from clot, removing detached spicula, and fixing the fractured fragments, a strip of fascia from the arm might be inserted between the joint surfaces after the method of Murphy in excision or the Mosetig bone filling might be used, with a view to preventing adhesions until sufficient repair had taken place to permit of passive motion. The operation was completed by suturing the capsule, fascia, nerves, and skin with ample provision for drainage. The arm should be dressed in the fully extended position, placed on an incline, and a light weight applied. This position and dressing should be changed at the end of one week. After light massage the arm was redressed at a slight angle and permitted to remain for four or five days, when it was changed to as nearly a right angle as possible without paining the patient too severely. Subsequent treatment consisted of massage and passive motion every third day for a period of three weeks. Local pain and tenderness were given precedence over crepitus by the author in the diagnosis. The use of weights to overcome muscular rigidity permitted of infiltration, diminished elasticity, and interfered rather than assisted in the reduction of these fractures. The proper treatment of pain and swelling accompanying fracture was by early reduction and the application of extension, ice, or other adjuvants deemed advisable. Immediate amputation was reserved for those extensive crushing injuries, such as bumper wounds, in which the circulation and joint were so badly damaged as to be beyond all hope of repair. The author expressed the opinion that fractures about the elbow joint had been overtreated in the past.

Talipes Calcaneus.—Dr. A. F. Jonas of Omaha described a plastic operation for the permanent relief of cicatricial talipes calcaneus.

Tuberculous Peritonitis.—Dr. T. E. Potter of St. Joseph, Mo., spoke of the etiology, symptoms, and diagnosis of tuberculous peritonitis, giving the more modern views on the subject. An early diagnosis was highly recommended and the physician was urged to be on the alert when there were any symptoms pointing to tuberculous peritonitis. The success in treatment at any age was much greater when the disease was recognized before it had made too extensive progress. In the treatment the writer gave preference to surgical methods, showing that at least 66 1-3 per cent. or more recovered in the hands of surgeons, while not more than 33 1-3 per cent. recovered after medical treatment by the latest and most approved methods of hygiene and the administration of medicine. A discussion of the theories as to the benefit of surgical interference was taken up in the paper.

Treatment of Varicose Veins.—Dr. C. H. Mayo of Rochester, Minn., said that the various operations in use at the present time were necessary because of the diverse conditions and symptoms manifested by the disease. The condition was probably the result of a defect in the vein walls, valves, or enervation. The Trendelenburg operation was deservedly popular, especially for cases of vicious venous circle of the deep and superficial vein of the thigh. Enucleation of the veins in a subcutaneous manner through several short incisions was a satisfactory treatment in the majority of cases. The subcutaneous removal of the internal saphenous from above at the side of and below the knee, by destroying the main superficial channel and deep communicating branches, was the best method, accomplishing in one operation all that could be obtained by either the Trendelenburg above or the Schede below. Goerlich's report showed 84 per cent. of operations as satisfactory and 16 per cent. failures. From experience in 184 cases this seemed a fair statement of the late results from the various methods employed at present, except in the percentage of failures. Sixteen per cent. was too high, as many of those not satisfactory were much improved over their former condition.

Undescended Testicle.—Dr. A. E. Benjamin of Minneapolis said that the cause of undescended testicle might be improper development of the organ, a rudimentary vaginal process, peritoneal adhesions between the testicle and bladder or intestine, or obstruction of the canal. The testicle might be found anywhere along its course of descent to a point just outside the external ring. Hernia was a common complication of this condition. The organ would not develop as well when located at any point above the scrotum. The possible sterility of the cryptorchid, and the frequency of malignant tuberculous and traumatic disturbances, complicating this condition, all argued for an early operation to place the gland in its proper location. The operation for undescended testicle had been perfected in the last few years. It had been demonstrated that by careful dissection and an occasional sacrifice of the spermatic vessels the organs would remain in the scrotum.

The Free Interval in Meningeal Hemorrhage.—Dr. F. Gregory Connell of Salida, Col., reported two cases, one of which was quite usual, with an interval of two hours, in which recovery followed operation. The other was one in which the patient retired for the night, five hours after a slight trauma, and was found dead in the morning.

Autopsy revealed a fracture, with a large extradural clot from the lateral sinus. This second case was not very rare; yet in eighty cases collected by the writer only two similar instances were encountered. The free interval was defined as a practically symptomless period of consciousness, which followed a primary, transitory unconsciousness, and preceded a secondary, increasing and permanent loss of consciousness. This condition was usually found in association with a head injury. The cause of the bleeding was usually traumatism, with or without fracture. Various causes of the free interval were considered, with preference given to Kocher's explanation. The length of the free interval was studied, in an analysis of the 80 cases, the average length being 35 hours. The difference between extra- and intradural hemorrhages was noted, and the long free interval in this series of cases was found to accompany the intradural hemorrhage. But it was stated that much stress could not be placed upon the length of the interval as a guide to the location of the hemorrhage. The typical train of events in a meningeal hemorrhage was (1) trauma; (2) concussion, unconsciousness; (3) consciousness, free interval; (4) compression, unconsciousness; but this might be variously modified. In the diagnosis the focal signs were of more value than evidence of injury. The occurrence of collateral hemiplegia must be remembered. Fractures of limbs, previous paralysis, or congenital attachment of the iris had caused confusion in diagnosis. Contusion or laceration of the brain, abscess, fat embolism, and other conditions might closely resemble meningeal hemorrhage. In the 80 collected cases, 52 were operated upon and 28 were not. After operation there were 39 recoveries and 13 deaths. Without operative interferences, 4 recovered and 24 died.

(*To be continued.*)

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, Held in Louisville, Ky., December 12, 13, and 14, 1905.

(*Concluded from page 38.*)

The Surgical Treatment of Floating Kidney; Post-operative Results.—Dr. Floyd W. McRae of Atlanta, Ga., argued for surgical intervention rather than attempted support by bandages or corsets, but urged careful selection of cases for operation and the recognition and correction of associated pathological conditions. Especial attention was called to the frequent coincidence of floating kidney and chronic or recurring appendicitis. The author described a new muscle-splitting operation, delivery of the kidney, partial decapsulation, the making of a broad quadrilateral suspensory ligament by dissecting forward the fibrous capsule from near the hilum to beyond the convex border of the kidney. A mattress suture was put in each angle of the capsule, near the hilum, from which the suspensory ligament had been dissected, and including the reflected flap from either pole of the kidney. These sutures were passed deeply into the muscles of the back, high up, so as to bring the kidney well into the hollow of the loin and close up to the twelfth rib. The quadrilateral suspensory ligament was next brought up between the separated muscles and held there by two silkworm gut sutures passed through all the structures from within out. A cigarette drain was placed between these sutures, and the remainder of the wound closed in layers with interrupted catgut sutures. Care was taken to avoid injury to the iliohypogastric and ilioinguinal nerves. The operation was illustrated by drawings. Twenty-two cases were reported.

Chronic Endocervicitis: A New Method of Treatment with New Instruments.—Dr. Daniel H. Craig of Boston said that the diagnosis was made to depend upon the condition of contraction or relaxation of the internal os. If, with an ordinary Simpson or Sims uterine sound, distinct resistance was encountered at the internal os, in the absence of flexion, the inflammation was confined to the tissues external to the internal os. If, on the other hand, the internal os was distinguished with difficulty or not at all, because of its relaxation and wide caliber, the inflammation was above the internal os, which was thus widely dilated to favor free drainage and to guard against back pressure. Treatment by Craig's method should be strictly confined to those cases in which the internal os was distinctly contracted. The author's treatment, or operation, consisted in curetting the cervical canal up to but not beyond the internal os with a specially designed curette after dilatation of the external os with a conical dilator, also specially designed for this purpose. The operation was quickly and easily performed at the office of the gynecologist without the use of anesthesia, except occasionally a few crystals of cocaine at the external os, and without confinement to bed. The pain, when done without cocaine, was about the same as that due to the filling of teeth. Inasmuch as the most rigid asepsis was requisite to render such ambulatory treatment safe, the outhor did not offer this little operation for the use of those not thoroughly familiar with surgical and gynecological manipulations, but for those who were able to establish and maintain a rigid asepsis. The preparatory and after-treatment consisted of three 1:5,000 formalin douches daily for three days before, and for ten days after, the operation, with avoidance of unusual exertion and abstinence from sexual relations. The cure was prompt and complete, only a relatively very few severe cases having required more than the original curettage. Tubo-ovaritis or other concomitant disease, which might be aggravated or lead to a recurrence, constituted a contraindication to treatment, except as an immediate preliminary to radical operation. The treatment was not intended as a substitute for tracheloplasty, nor for uterine curettage in cases in which the disease had invaded the corporeal endometrium. The use of the author's method should not be attempted until the original paper had been read in detail.

Fracture-Dislocation of the Condyles of the Femur with Backward Luxatien of the Leg.— Dr. George S. Brown of Birmingham, Ala., reported a case in which he did an open operation seven months after the receipt of the injury. He resorted to subperiosteal resection of the fragments with reduction and wiring, which resulted in the cure of a bad deformity, and the limb of the patient was now normal except for half an inch of shortening. The patient, aged 14, was injured in a football game at a small college, and was treated for three months for sprained knee. A skiagraph revealed fracture-dislocation of the condyles. He walked for four months after this with bad valgus and flexion of the leg on the thigh before submitting to an operation. The limb and knee joint were restored to normal. There was bony union of the fragments in their dislocated position. Through a four-inch incision down the inner aspect of the femur, the lower end of which stopped short of the level of the knee joint, the periosteum was cut through and pushed downward, the line of union chiseled through, the broken surfaces resected, and the leg brought forward on the htigh without opening the joint. The fragments were wired and the internal lateral ligament was closed with kangaroo tendon. The skin was closed with a subcuticular suture of silkworm gut. Owing to the first dressing being left too long, there was a superficial infection which did not interfere with the final good result.

Appendicitis.—Dr. W. P. Carr of Washington, D. C., said that no disease presented more varieties and more grades of severity than appendicitis. There were all shades between a mild catarrhal attack and a severe gangrenous case with diffuse peritonitis. It was apparent that no one method of operating would suit all cases. Surgeons must modify the technique to suit the case and the strength of the patient. In his first one hundred cases he had eight deaths. In his last seventy-two cases he had had but two deaths, and he believed the improvement in mortality was

due to a fuller knowledge of the condition of the patients and a suitable adjustment of the technique to those conditions. For practical purposes he divided all cases of appendicitis into four classes: (1) Unruptured, uncomplicated. (2) Unruptured, complicated by other serious disease, such as nephritis, tuberculosis, or myocarditis. (3) Perforated or ruptured—first thirty-six hours; patient in good general condition. (4) Perforated or ruptured—after thirty-six hours; complicated by diffuse peritonitis or by asthenia from long illness, or by other serious disease; patient in bad general condition. Each class was discussed at considerable length. As to the incision, it should always be either the gridiron or through the rectus muscle; otherwise hernia was very liable to follow. There was but one objection to the gridiron incision, namely, it could not be greatly enlarged without cutting across the fibers of the internal oblique and transversalis muscles. This, he thought, should never be done. It was better to close the wound and open again through the rectus muscle if a very large opening became necessary. However, if this incision was well placed, it might be stretched with the fingers and a fairly large opening made through which any uncomplicated operation might be done. The stretching should never be excessive, as paralysis of the stretched muscle fibers might result, and hernia follow.

Neglected Appendicitis.—Dr. Charles M. Rosser of Dallas, Texas, conceded the safety of an acutely inflamed appendix while the pathology was limited to the structures of that viscus; but the serious mortality following cases not so treated justified a classification of those passing the initial stage as being neglected, whether the delay was due to indifference, ignorance, or cowardice, and whether the responsibility was upon the family, patient, or medical adviser. The safe time limit would vary with the character of the attack of inflammation, the skill of the operator, and the resistance of the individual. The author considered the question of whether to operate was settled affirmatively. While appendectomies were occasionally simple in performance, yet they were prospectively delicate, and the patient was entitled to the most skilful service available in each instance, and he thought the geographical distribution of competent surgeons was sufficiently general so that there was hardly an excuse for an emergency operation by the attending physician if he were not so equipped. He advised incision in all cases at all stages except those already moribund, and in which added insult to vitality would be immediately hazardous, and a class having reached complete adhesive protection, in which a relaxed rectal orifice indicated early rupture and discharge by that route. After incision the surgeon must decide whether to remove the appendix alone, to remove and drain, or whether drainage alone should be the operation of election. But as exploration could best determine an otherwise indefinite pathological progress, the patient should be given the benefit of the doubt.

Erysipelas Toxins in Sarcoma.—Dr. W. B. Coley of New York gave a brief history of the development of the method, stating that he had used the mixed toxins of erysipelas and bacillus prodigiosus since 1892. Up to the present time he had advocated the treatment practically only in cases of inoperable sarcoma, but in view of the experience thus far gained from his own cases as well as the successful cases in the hands of other surgeons, he believed it wise to use the injections in all cases after primary operation for sarcoma as a prophylactic against recurrence. In these cases, however, the dose should be much smaller, just sufficient to produce a very slight reaction, and the treatment should be continued for two or three months. He also believed it wise, in practically all cases of sarcoma of the extremities, to give the patient the benefit of a trial with the mixed toxins before sacrificing the limb by amputation. This opinion was based upon twelve cases of sarcoma of the extremities in which the treatment had been so tried, with the result that the tumor disappeared, and in eight of the twelve cases the patients were alive and well from three to six years afterward; two were well at the time of the last observation, at the end of one year; the other two were recent cases. Three of these twelve were personal cases. Eight of them were of the round-celled variety; two spindle-celled; and in two no microscopical examination was made, although amputation had been advised by prominent surgeons; five were sarcoma of the tibia; one of the fibula; two of the femur; one of the forearm; one of the humerus; one of the thigh, involving the periosteum; one of the calf of the leg. In all of these cases amputation had been seriously considered, but it seemed justifiable to give the toxins a trial before resorting to operation. As to the final results of personal cases, of 34 cases which might be fairly classed as successful, in that the tumor disappeared under the injections with the mixed toxins, the type of the neoplasm was as follows: 12 round-celled, 16 spindle-celled, 2 mixed-celled, 1 epithelioma, 3 no microscopical examination made, but the clinical appearance, together with a history of recurrence, left practically no room for doubt as to the diagnosis. The results in these cases thus far had been as follows: Four were well less than a year; 3 were well from one to two years; 3 were well from two to three years; 3 were well from three to five years; 23 were well from five to thirteen years. In five cases a recurrence took place and finally proved fatal. In one of these recurrent cases the patient had remained well for eight years; in one, three and a quarter years; in one, two and a half years; in one, seven months; in one, six months. These five cases of recurrence, the author argued, were important in that they furnished absolute proof of the correctness of the diagnosis and refuted the statements formerly often made in regard to the successful cases, namely, that there must have been an error in the diagnosis. Dr. Coley had collected 56 cases of complete or partial success obtained by other men. The results in these cases were as follows: Thirteen were observed less than one year: in 6 the tumor disappeared and the patient remained well from one to two years; in 9 the tumor disappeared and the patient remained well from two to three years; in 12 the tumor disappeared and the patient remained well from three to five years; in 9 the tumor disappeared and the patient remained well from five to eleven years; in 5 cases recurrence took place six months to two years later; two patients died during the treatment, one of pyemia due to staphylococcus infection, the other of septic absorption, the tumor being a large intraabdominal sarcoma which had completely degenerated.

Laminectomy.—Dr. R. E. Fort read a paper on this subject in which he reported a case that he had successfully operated upon, with recovery of the patient.

The following papers were read by title: "End Results in Appendicitis Work," by Edward E. Balloch of Washington, D. C.; "Two Cases of Vaginal Cesarean Section for Eclampsia," by Dr. John F. Moran of Washington, D. C.; "Cesarean Section Necessitated by Obstruction of Pelvis by Right Half of Bicornuate Uterus," by Dr. George S. Brown of Birmingham, Alabama; "Penetrating Wounds of the Abdomen, with Report of Cases; Including a Case of Traumatic Rupture of Congenital Cystic Kidney," by Dr. C. E. Caldwell of Cincinnati, Ohio; "The Vicious Circle after Gastroenterostomy," by Dr. John B. Deaver of Philadelphia, Pa.; "Some of the Uses of Pelvic Massage," by Dr. Joseph Taber Johnson of Washington, D. C.; "Recent Progress in the Surgery of the Vascular System," by Dr. Rudolph Matas of New Orleans, La.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. George H. Noble of Atlanta; *Vice-Presidents*, Drs. Stuart McGuire of Richmond and E. Denegre Martin of New Orleans; *Secretary*, Dr. W. D. Haggard of Nashville; *Treasurer*, Dr. Chas. N. Rosser of Dallas, Texas.

Baltimore was selected as the place for holding the next annual meeting.

Dr. Lachmann, a German army surgeon of fifteen years' service, resigned his post recently because the Minister of War did not repudiate certain accusations of cowardice against Jewish soldiers which had been made in the Reichstag.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

PRIMARE THORAXANOMALIEN. By WILH. ALEX FREUND. 4to, 28 pages, paper, illustrated. Verlag von S. Karger, Berlin. Paper, Marks 80.

BERLINER ARZNEIVERORDNUNGEN MIT EINSCHLUSS DER PHYSIKALISCHDIÄTETISCHEN THERAPIE. By Dr. med. PAUL RECKZEH. 16mo, 227 pages, muslin. Verlag von S. Karger, Berlin. Cloth, Marks 3.

CONTRIBUTION À L'ETUDE DE LA FUNICULITE LYMPHOTOXIQUE DANS LES PAYS CHAUDS. Par le Dr. R. MENOCAL. 8vo, 28 pages, illustrated, paper. M. Ruiz y Ca., La Havane.

DAS WESEN DER PSYCHOSE AUF GRUNDLAGE MODERNER NETURWISSENSCHAFTLICHER ANSCHAUUNG. By Dr. HEINRICH STADELMANN. 8vo, 277 pages, paper. Verlag der Aerztlichen Rundschau (Otto Gmelin), München, 1905. Paper, Marks 350.

TRAITEMENT DE LA LEPRE PAR LE PALETUVIER OU MANGLIER ROUGE. Par le DR. MATIAS DUQUE. 8vo, paper. Edmond Dubois & Co., Paris.

THIRTY-SIXTH ANNUAL REPORT STATE BOARD OF HEALTH, MASSACHUSETTS. 8vo, muslin. Wright & Potter Printing Co., Boston.

CHIRURGIE OTO-RHINO-LARYNGOLOGIQUE. By GEORGES LAURENS. 8vo, 976 pages, 471 illustrations. G. Steinheil, Paris. Price 30 francs.

ZUR FRAGE DER BOR-WIRKUNGEN. Von Dr. OSCAR LIEBREICH. 4to, 51 pages, paper. August Hirschwald, Berlin.

OPERATIONS PLASTIQUES ET ANASTOMOSES DANS LE TRAITEMENT DES RETENTIONS DU REIN. Par Dr. FAXTON E. GARDNER. 8vo, 246 pages, illustrated, paper. Vogot Frères, Paris.

THE MEDICAL RECORD VISITING LIST OF PHYSICIAN'S DIARY for 1906. New Revised Edition. William Wood & Company, New York.

MEDICINAL-KALENDER. Paul B. Hoeber, 69 East Fifty-ninth Street, New York. Paper, 75 cents.

VORTRÄGE UND AUSSATZ UBER ENTWICKELUNGSMECHANIK DER ORGANISMEN. HEFT 1. DIE ENTWICKELUNGSMECHANIK, EIN NEUER ZWEIG DER BIOLOGISCHEN WISSENSCHAFT. By WILHELM ROUX. 8vo, 283 pages, illustrated, paper. Paul B. Hoeber, New York $1.25, net.

SKIASCOPY and its practical application to the study of refraction. By EDWARD JACKSON, M.D. Fourth Edition. 8vo, 120 pages, illustrated, muslin. The Herrick Book and Stationery Co., Denver, Col.

DER AERZTLICHE RATGEBER IN BILD UND WORT. By Dr. med. Fr. SIEBERT. 8vo, 1,024 pages, illustrated, muslin. Paul B. Hoeber, New York. Cloth, $6.50, net.

VERHANDLUNGEN DER DEUTSCHEN RÖNTGEN-GESELLSCHAFT, BAND I. 4to, 248 pages, illustrated, paper. Lucas Grafe & Sillem, Hamburg.

DIE KRANKHEITEN DES BECKENBINDEGEWEBES UND DES BECKENBAUCHFELLS. By A. MARTIN. 8vo, 360 pages, illustrated, paper. Verlag Von S. Karger, Berlin.

ESSENTIALS OF MATERIA MEDICA, THERAPEUTICS, AND PRESCRIPTION WRITING. By HENRY MORRIS, M.D. Seventh Edition. Thoroughly revised by W. A. BASTEDO, M.D. 12mo, 300 pages, muslin. W. B. Saunders & Co., Philadelphia. Cloth, $1.00, net.

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Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the weeks ending January 6 and 13, 1906.

	Week Ending Jan. 6, 1906.		Week Ending Jan. 13, 1906.	
	Cases	Deaths	Cases	Deaths
Measles	1131	16	1214	15
Diphtheria and Croup	337	15	371	62
Scarlet Fever	215	13	222	7
Small Pox	. . .		2	. . . . .
Chicken Pox	155	.	205	. . . . .
Tuberculosis	342	150	397	173
Typhoid Fever	40	11	32	6
Cerebrospinal Meningitis	15	11	23	26
Typhus Fever	. .	.	. . . . .	. . . . .
Yellow Fever	. . . . .		. . . . .	. . . . .
Cholera	. . . . .		. . . . .	. . . . .
Total	2,235	251	2,466	289

X-Ray in the Treatment of Cancer.—Results in ten cases are reported by Chisholm Williams. All were superficial growths, the accuracy of diagnosis being supported by the microscopical findings. The question is often asked, says the author, "When should *x*-rays be tried?" His reply is, "as soon as the diagnosis is made," whether the case is to go to the operating table or not. After operation, directly the scar is healed or even before that time if it shows the slightest appearance of being sluggish in the healing, a nodule of the size of a pea should have immediate treatment whether in the scar or not; this requires for its proper fulfilment constant observation by the medical attendant. A weekly examination is of the utmost importance to the patient. Even healthy wounds will heal the more readily under the stimulation of *x*-rays cautiously applied and in small doses, sufficient protection to the surrounding parts being all that is necessary. This form of treatment can be applied with any degree of safety only by medicinal practitioners; some terrible results have occurred in the hands of laymen and this fact has probably deterred patients and their advisers from taking full advantage of such suitable measures. One cannot promise, except in small superficial growths, a cure, but one can almost invariably obtain a measure of alleviation.—*The Lancet.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ended January 6, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
District of Columbia, Washington	Dec. 31–Jan. 6	4	..
Florida, Jacksonville	Dec. 31–Jan. 6	6	—
Mayo	Dec. 31–Jan. 6	3	..
Newberry	Dec. 31–Jan. 6	2	..
Louisiana, New Orleans	Dec. 31–Jan. 6	2	..
Maryland, Baltimore	Dec. 31–Jan. 6	6	..
Missouri, St. Louis	Dec. 24–Jan. 6	2	..
Virginia, Norfolk	Jan. 3	45	..
		5 in city and 40 on Craney Island	
Wisconsin, Appleton	Dec. 31–Jan. 6	3	..

SMALLPOX—FOREIGN

Brazil, Bahia	Nov. 25–Dec. 9	39	1
Rio de Janeiro	Nov. 20–Dec. 3	15	11
Ecuador, Guayaquil	Dec. 3–10	..	2
France, Paris	Dec. 16–23	19	1
India, Calcutta	Nov. 25–Dec. 3	..	6
Karachi	Dec. 3–10	1	..
Madras	Dec. 2–8	..	3
Italy, Messina	Dec. 9–16	1	..
Mexico, City of Mexico	Dec. 8–16	4	2
Tuxpam	Dec. 26–Jan 2	..	2
Russia, Odessa	Nov. 11–18	19	1
Turkey, Constantinople	Dec. 3–10	..	3

YELLOW FEVER.

Brazil, Rio de Janeiro	Nov. 20–Dec. 3	4	2
Sao Paulo	Nov. 5–12	..	1
Columbia, Barranquilla	Nov. 27–Dec. 4	6	4
Cartagena	Dec. 16–23	1	1
Cuba, Habana	Jan. 1–4	1	1
Ecuador, Guayaquil	Dec. 3–10	..	4
Mexico, Merida	Dec. 24–30	2	..
Vera Cruz	Dec. 24–30	1	1

CHOLERA.

India Bombay	Dec. 5–12	..	1
Calcutta	Nov. 25–Dec. 2	..	102

PLAGUE.

Brazil, Rio de Janeiro	Nov. 20–Dec. 3	43	18
India, General	Nov. 4–11	3611	2760
Bombay	Dec. 5–12	..	15
Calcutta	Nov. 25–Dec. 2	..	20
Karachi	Dec. 3–10	5	5
Russia, Government of Astrakhan	Nov. 19–Dec. 3	680	651

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 4.
Whole No. 1838.

New York, January 27, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

THE ETIOLOGY, PROGNOSIS, AND TREATMENT OF GENERAL PARESIS.

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NEW YORK.

PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; ATTENDING PHYSICIAN TO THE CITY HOSPITAL; NEUROLOGIST TO THE HOSPITAL FOR RUPTURED AND CRIPPLED, MANHATTAN STATE HOSPITAL WEST, AND THE MONTEFIORE HOME FOR CHRONIC INVALIDS.

In discussing the etiology, prognosis, and treatment of general paresis, I assume that certain facts are taken for granted: such, for instance, as that general paresis is a disease which occurs much more commonly at the present time than at any time since its recognition; that it is oftener met with in urban than in suburban communities; that the clinical delineation of general paresis has undergone a very striking change in the past quarter of a century; that the most important apparent factor in the causation of the disease is syphilitic infection, often many years anterior; that excesses of all sorts, but more especially those that induce vascular changes such as alcoholism and strife, are powerful accelerating causes of the disease; that injury to the head, both comparatively trivial and severe, is found sufficiently often in the history of patients with general paresis to justify one in concluding that trauma to the head is occasionally an exciting or accelerating cause of the disease; that there are objective symptoms which indicate almost unerringly the existence of the disease, and that these somatic signs frequently precede the mental symptoms for a very considerable length of time, and by that I mean two, three, or perhaps five years; that the disease is universally regarded as incurable and progressive, and, finally, that so far no medication has been suggested that shapes the course of the disease once the disease has become fully developed. All this being taken for granted, the discussion of the subject which I propose to make becomes comparatively simple. I have nothing new to offer concerning the etiology or the treatment of the disease, but despite this I shall venture to cite my experience in the hope that some features of it may serve to call attention to the paramount importance of the early recognition of general paresis, and to the advisability or necessity of subjecting some of the patients to vigorous medication.

In regard to the etiology of general paresis there would seem to be a remarkable unanimity of opinion existing among those who have seen and studied the disease sufficiently to entitle them to the expression of an opinion. Kraft-Ebing summarized and made statement of our knowledge of the subject at the International Medical Congress in Moscow in 1897. Syphilization and civilization, he said, cause the disease. It is probable that neither one is an adequate determining cause. In uncivilized countries where syphilis exists general paresis is unknown; when civilization comes general paresis comes also. Unfortunately, the corollary of this statement cannot be indulged in, for the civilized country in which there is no syphilis exists only in the mind of the novelist. The elements of civilization that contribute to the causation of general paresis need not be discussed. They constitute an intangible something that has developed *pari passu* with the progress of civilization, apparently, for general paresis is more frequent in each succeeding generation. We say that it is strife and worry and work without knowing that it is any of these. It may be a habit of life; it may be the food that we eat; it may be an evolutionary condition that allows a certain flora to develop in the gastrointestinal tract and so provide the initial step for the development of the disease. The work of Ford Robertson, Douglass M'Rae, John Jeffrey, and L. C. Bruce, which tends to show that the toxemia of general paresis is of gastrointestinal and bacterial origin, seems to indicate that in general paresis there is constantly an infection of the alimentary and respiratory tracts by an organism indistinguishable from the Klebs-Loeffler bacillus. Although this work has not yet been corroborated, it is of such a nature that it stands in urgent need of corroboration or denial. At least it seems to me that if the above statements concerning syphilization and civilization are true, some demonstration of the absolute proximate cause of general paresis is awaited.

So far as the clinician can contribute to the knowledge of the cause of general paresis it has, I believe, already been done, and no information can be expected from the analysis of new statistics, even though they may be very large. Despite this, in order to introduce a discussion of the causation of the disease, I have taken the last hundred cases of general paralysis that I have seen—fifty from private practice and fifty from hospital practice—and analyzed them. This comparatively small number is utilized rather than all of the cases of general paresis that I have seen, first because the records of the cases are fairly complete (many of the patients having been under my observation for months at a time), and, secondly, because it seemed to me that as much and as reliable data can be gotten from a hundred cases as from five hundred. Of these 100 patients 85 were males and 15 were females. This is, perhaps, a somewhat higher percentage of females than is given by most writers, but it is to be noted particularly that only one of these fifteen was seen in private practice. So far as professions and occupations are concerned, it is difficult to find one not represented in our hundred cases. There are clergymen, physicians, jurists, statesmen, bankers, capitalists, laborers, and artisans of all sorts. In Europe the disease is rare among the clergy and common among the officers of the standing armies; but whether there is a similar social distinction here I am unable to say.

Most writers believe that heredity plays a rôle of much importance in the development of general paresis, and my statistics would seem to indicate that it does. Of the 100 cases there were no less than 23 in which there was a history in the ancestry

of organic or functional nervous disease of sufficient severity to be noted by the family of the patient. This is a far greater percentage than that of patients with other nervous and mental disease. It is in opposition, also, to the statements of such writers as Regis in France and Mendel in Germany who believe that neuropathic heredity has very little bearing on the occurrence of the disease. In France much is made of the so-called neuroarthritic heredity as a predisposing factor to general paresis, but until arthritic heredity is very closely defined or until a person who believes in it is able to state exactly what he means, so that it is intelligible to another, one cannot hope to say with much confidence how much of a rôle it plays as an etiological factor.

The following table shows the relative frequency of the commonly attributed causes of the disease: History of syphilis in 55 cases; history of syphilis denied or not obtained in 45 cases; history of injury in 9 cases; history of nervous or mental trouble in the family in 23 cases; no excesses (alcoholic or sexual), 54 cases; moderate excesses, 23 cases; great excesses, 23 cases; paretic type, 73 cases; tabetic type, 27 cases.

Duration of the disease when first examined:

	Cases.
Two weeks	1
Two months	1
Three months	1
Four months	1
Five months	1
Six months	5
Nine months	1
Fifteen months	1
One year	16
Two years	23
Two and one-half years	7
Three years	10
Three and one-half years	1
Four years	9
Five years	6
Six years	2
Seven years	3
Twelve years	1
Unknown	10

Of these 100 patients there are, therefore, 55 who admitted, and were in a mental condition to state, that they had had syphilis. There were 7 whose collateral history made it fairly certain that they had had syphilis. Such, for instance, as a young woman whose husband had syphilis at the time of marriage; another, a man, whose wife now has tabes; another a woman who had five miscarriages in succession and one dead-born child; another whose wife had six miscarriages in succession; another woman whose husband died of general paresis; a second whose husband died of general paresis; another whose husband died of syphilitic endarteritis in my own care in the hospital, the lesions having been demonstrated after death. It is possible also to include in this list a young woman 23 years old who was married seven years and had never been pregnant, despite the fact that she came from a productive family; and another who had two miscarriages in succession in the early period of pregnancy and who had since then remained sterile. This makes a total of 62 out of 100 in which it is fairly certain that a syphilitic infection had existed. It is, perhaps, legitimate to include under the caption of those who had syphilis one who admitted promiscuous intercourse with Chinese women, another who had an attack of iritis and choroiditis and still shows the evidence of them, and a third who, while denying the primary lesion, gave a history of an erythema and periosteal pains which may have been of specific origin. This brings the number up to 65 out of the 100. This, therefore, leaves 35 patients who denied syphilis and who gave no evidences of its existence. This, I need scarcely say, is about the percentage of syphilitic history in the vast majority of statistics.

On the other hand, there were many patients seen for the first time in a more or less advanced stage of the disease who were not in a mental condition to give reliable information concerning whether they had or had not had syphilis, and among these were a number of private patients brought or sent oftentimes from a distance by their physicians, in whom, in addition to not being able to give the information themselves, it was quite impossible to make inquiry from anyone who was likely to know. In these statistics such cases are put down as unknown in reference to syphilitic infection.

The average age at which these 100 patients had syphilis was 25, and the average age when general paresis developed was 36½, i.e., about 11 years is the average period that elapses between the infection and the development of the first symptom of the disease, out of which, in my opinion, it commonly flows. It should be noted that in many cases the time between the existence of the chancre and the development of the first symptom of general paresis was very short. For instance, in case 4 the specific lesion developed at 36, the general paresis at 41; case No. 13, the chancre when 31, the first symptoms of general paresis at 34, and during the interval almost continuous vigorous antisyphilitic medication; case No. 15, specific lesion at 35, treated for a year, first symptoms of general paresis at 35; case No. 17, initial lesion when 24, homeopathic treatment, beginning of general paresis when 29; case No. 35, lesion when 19, no treatment, symptoms of general paresis when 22; case No. 65, lesion when 44, treated continuously for eighteen months, symptoms of general paresis appearing when 47; case No. 92, syphilis when 20, treated one and one-half years, symptoms of general paresis developing when 24, and several other cases in which the time between the existence of the syphilitic lesion and the development of paresis was more than seven years, so that my experience is at variance with the statements of Fournier (*Académie de Medicine*, February 28, 1905), that "general paresis is never a manifestation of recent syphilis nor of very remote syphilis. In the majority of cases it appears between the sixteenth and seventeenth year after infection." I am anxious to hear whether the experience of my colleagues is similar to my own, for I have been many times reminded during the past ten years that the interval between the infection and the development of the general paresis is becoming briefer.

There is another point in the etiology of general paresis in which, although I am not prepared to speak with any real positiveness at this time, I am inclined to think it is likewise at variance with the statement of Fournier, who says "insufficiency of treatment of the syphilitic infection is an etiological factor of great value. A small number alone of syphilitics who have been well treated become general paretics." In order to make a statement concerning this question which would entitle it to considerable weight, I should have to review my entire experience with general paresis, and this I am not ready to do now. Later, when I shall say a few words about the treatment, it will be pertinent to inquire what constitutes sufficient treatment. Many of the patients whose histories are analyzed in these statistics had vigorous antisyphilitic treatment for upward of a year; 11 of them were treated in hos-

pitals for four or five months, but many were not treated except for a few weeks after the local manifestations had disappeared. Altogether the average duration of treatment was something over seven months.

The number of patients whose history showed trauma of any sort was 9, and it is very interesting to analyze these cases, as there seems to be a disposition on the part of many of our most recent writers to deny the etiological importance of trauma. For instance, one of the best descriptions of general paresis in recent times is that of Dupré, in the *Traité de Pathologie Mentale,* by Gilbert Ballet, who states that cranial traumatism has a slight etiological influence and that two factors—syphilis and cranial traumatism—are responsible for most of the cases that seem to develop after trauma.

Case No. 2 of my series gave a history of a blow on the side of the head occurring three years before the onset of the paretic symptoms. After the blow he was unconscious for a short time and went to a hospital. He was a laborer, who denied syphilis, but who drank to excess for many years. Case No. 6, a painter, stated that he had had several falls off roofs. After some of these he was unconscious and laid up for some time. The last fall was a year or a year and a half before the symptoms of general paresis showed themselves, and consisted of a fall from a ladder to the sidewalk. He struck the back of his head and had some hemorrhage from the right ear and was unconscious for eight hours. The only way he could account for that fall was that he had an attack of vertigo. He denied syphilis, but admitted an attack of gonorrhea and an attack of swelling of the glans penis about twenty-five years before. The next case was a butcher 52 years old, who had typical manifestations of general paresis and an advanced degree of arteriosclerosis. He had had several falls from a wagon. He died from an attack of apoplexy three years after onset of his disease; no autopsy. He denied syphilis. The fourth case was a plumber, 35 years old, who had had a fall on the head four months before. The symptoms of paresis in his case were well developed. The next was a patient who had been assaulted in the street and rendered unconscious two months previous to the development of notable symptoms of the disease. When I saw him somatic signs of the disease were pronounced. The next was a young man 18 years old, who gave a history of having been hit on the head when 9. The difficulty in all these cases is to trace a relationship between the injury and the mental disease. In most cases it is more apparent than real. The majority of patients who attribute their symptoms to head injury are found, if investigated closely, to have had syphilis as well. This point is well illustrated by a patient, a man 35 years old, who one year before the development of the disease received an injury to the head, was not unconscious, but felt "numb" for a week following. The next was a patient 62 years old, who received a severe injury to the head when 20 years old. All of these denied syphilis. The next was a man 36 years old, who received a blow on the head one month previous to the time that his physician found unequal, Argyll-Robertson pupils, absent knee-jerks, slowness of speech, and forgetfulness. To his physician he denied ever having had a chancre. When I saw him eighteen months afterward I found a scar on the glans penis, and he, when confronted with this, admitted then having had syphilis eight years before.

There are a great many cases in the literature in which it is reported that the phenomena of general paresis have followed trauma of the head, some of them soon afterward, others remotely after the head injury. In some of these cases there is neither a direct history of syphilis, nor can it be assumed that syphilis existed unless hereditary.

Belonging to the latter category is a case recently reported by Marie and Violet (*Le Progrès Médical,* November 11, 1903). A boy began to have fractures of different bones in the body from injuries often trifling, often violent. The fractures reunited quickly, but recurred oftentimes in the line of previous fracture. After his death, at 38 years, the diagnosis of general paresis was confirmed. The writers look upon this case as one of hereditary syphilis, which was, most probably, the cause of the predisposition of the bones to fracture.

I see no reason for not admitting that general paresis may arise apparently from injury to the head. Whether or not there must have existed previous syphilitic infection in every case is another question; but my opinion is that it is not necessary. Cases, however, in which the somatic symptoms occur within a few months—less than six—after the injury I am inclined to look upon as the result of syphilis and trauma.

One should hesitate to say that the disease has come from injury in any given case until all the facts of the case have been very carefully examined. My own experience is that the more thoroughly one investigates the cases of general paresis that are attributed by the patient or the family to injury, the fewer become the cases that may legitimately be said are due to injury. For instance, the following case is an excellent illustration, a man, 43 years old, a driver, who is now under my observation. His wife states that three years ago he fell from a wagon that he was driving, and his present illness dates from that time. Although he fell on his side and hit the head and shoulder, it was the left elbow particularly that sustained injury. He kept at his work, but a few days afterward he noticed a weakness of the left upper extremity and complained of some pain along the outer border of the hand. Three weeks later a can of milk that he was lifting fell on his foot and broke his toe, for which he went to a hospital, where he remained for six weeks while the fracture was healing. On leaving the hospital he was unable to go back to work, because of physical weakness and because he was growing "silly." This condition continued to increase, until now he presents the typical picture of a taboparetic. Were it not for the fact that the diagnosis of tabes in a well-developed stage was made in the hospital to which he went for treatment of the injury spoken of, the case might well figure in the statistics that set forth the relation of paresis to trauma.

Alcohol has a definite relationship to the development of general paresis, but here again the question is whether or not it is in itself a competent producing cause. My opinion is that it is not. The excessive use of alcohol can cause a clinical picture resembling that of paresis, one to which the name alcoholic pseudoparesis is given, but that it can alone cause true general paresis is denied. Some alienists, such as Regis, for instance, deny that alcohol has any contributory effect. The statistics upon which my remarks are based show that of the 100 cases 23 were very excessive drinkers and 23 more were what they termed "moderate" drinkers. It is fair to assume that several, at least, of the latter used alcohol to very considerable excess. This would show that a third of my 100 cases at least had taken alcohol excessively, and probably thereby injuriously. I am inclined to agree with Magnan and Garnier, who hold that alcohol has a definite relationship to the development of general paresis.

When one approaches a discussion of the treat-

ment of general paresis he is confronted at once with the fact that it is practically universally conceded that the disease is incurable. In the literature of twenty-five or thirty years ago one finds no difficulty in turning to recorded cases of recovery, but such a statement is not true for the recent literature, and, of course, the question at once arises, Were these early cases genuine examples of general paresis, or, if they were, were they cured?

In 1870 Nass reported 7 cases of recovery. Later he made the statement that 6 of the patients had relapses and died of severe cerebral disease, and in the seventh case the diagnosis was doubtful. To be sure there is here and there in modern literature reports of cases in which the objective symptoms have been held in check and the subjective symptoms caused to disappear by the use of this or that medication. But these communications are, in a very large part, from those who have had comparatively small experience or those who have shown their willingness to publish cases as cured after too short an interval of cessation of the symptoms to justify the use of that term. I am not referring now to those who maintain that there is a preparetic state of the disease, and that if treatment is carried out vigorously during this time the disease may be prevented from developing; I am speaking only of the treatment of general paresis. During the past five years particularly there have been a number of articles and monographs written, particularly by French writers—Devay, Lemoine, Leredde, Lejeune, Marchand, and others—on the curability of tabes and general paresis by the use of mercurials in massive doses—"mercurielization intensive," as they call it. For instance, Leredde (*Revue Neurologique,* Congrès de Toulouse, 1902) is of the opinion that tabes and general paresis both are syphilitic diseases and are curable. He objects to the term "parasyphilitic," which most writers use to describe the probable pathogeny of the disease. Devay (*Lyon Médical,* February 15 and 22, 1903) says that 23 cases were modified, improved, or transformed in their clinical features by injections of calomel and the use of iodide of potassium in large doses. He divides his cases into four groups, the first group consisting of 3 cases in which there was attentuation or disappearance of the somatic signs, with very incomplete disappearance of the mental symptoms. The second group, 5 cases, in in which the individual's intelligence remained weakened, but there was great amelioration or complete disappearance of the somatic signs. A third group, of 5 cases, in which the mental signs practically disappeared, but the physical signs persisted; and the fourth group, in which there was absolute disappearance of the physical and mental symptoms. In this latter group there are 10 cases. Devay's attitude toward many of the features of general paresis is such that one who attempts to criticise his paper finds himself at a loss. For instance, he says that spontaneous remissions occur in exceptional cases of general paresis only. This would seem to show either a limited experience, or the encounter with general paresis of a different kind than that which we see, for it is a statement at variance with the experience of most physicians. Like Leredde, his conclusion is that general paresis is neither alcoholic, arthritic, nor toxic. It is syphilitic and not parasyphilitic. He thinks that energetic specific treatment should be instituted at once; it matters not even though the case is well developed. The duration of the treatment should be longer the longer the disease has been in existence. In cases of cure treatment should be maintained after recovery. He says the iodate of mercury should be given in extremely large doses, often more than ten grains. Fear of cardiac complications is ungrounded, he having noted them only in one case. In the *Archives of Neurology,* 1902, he states that he submitted 90 cases of general paresis to energetic mixed specific treatment, and that 21 of these cases were modified, improved, or temporarily cured. Lemoine (*Revue Neurologique,* July, 1902) reports six observations on general paresis in which improvement was very evident from energetic mercurial medication. He thinks it is the large dose rather than the particular salt of mercury which is efficient. Nevertheless, he prefers the benzoate because of the facility with which it can be given. He thinks that the prospects of success stands in inverse ratio to the age of the patient. He gives from two to six centigrammes of the benzoate of mercury daily, repeating these injections for fifteen or twenty successive days, and in some cases for a period twice as great, depending upon the individual's tolerance and the results obtained. The injection is then omitted for ten or fifteen days and again resumed after that time in such a way that a similar quantity is injected every other day only. In this way the injections are continued for months, and in some cases for years. Marchand (*Archives de Neurologie,* 1903) gives the mercury in the shape of intraspinal injections, believing that the manner of introducing it into the organism may exert an influence on its mode of action. After the removal of about 6 c.c of cerebrospinal fluid he injects 2 milligrammes of biniodate of mercury and 2 cg. of potassium iodide dissolved in 2 c.c. of distilled water. These injections are repeated once a week. He has not observed internal symptoms. Of 7 patients treated in this manner during three months 4 were improved.

This may be taken as a sufficient citation of the treatment that has been instituted by many in France and of the claims that are made for it. These claims have been received hostilely by a large number of well-known neurologists and alienists in France who have expressed themselves on the subject. Many of them, such as Brissand, Marie, and Dupré, have spoken very decidedly against them.

My own experience with the intensive mercurial treatment of tabes and general paresis extends now over a period of five years. During this time I have treated many patients suffering from these diseases in the way suggested above, and I am ready to state results in the cases of general paresis, but not ready to state them in the cases of tabes dorsalis. I can do this very briefly: In no instance have I seen intensive mercurialization to be of any service whatsoever in general paresis after the disease was fully developed, *i.e.* after it had the ordinary somatic and psychic signs, even though the latter were not pronounced. I have had three cases in which it seems to me the disease has been arrested in its development, not cured, because the physical signs of the disease still remain, but in one of them, now of five years' duration, and another of three years' duration, the disease has made no progress whatsoever. These three cases I shall cite briefly.

Mr. X., 44 years old, a man of affairs, unmarried, had syphilis when he was 23 years old. He was treated by a well-known syphilographer for three years and pronounced cured. The infection was considered to be a mild one. He remained well, except for some minor ailments, until he was 39 years old, when he had an attack of convulsions which was thought by the physician who saw him to be due to congestion of the brain or a rupture of some blood-vessels in the brain. As a result of this illness he was confined to his bed for a fortnight, during which time there were no evidences of paralysis. Examination of the urine made at this time gave no

indications that the attack might have been due to uremia. A few months afterward he consulted me for headache and at that time I found Argyll-Robertson pupils, absence of one knee-jerk, and a slight tremor of the hands and of the tongue. His blood-pressure on the Stanton apparatus was 135, his pulse rate 86, and the arteries not perceptibly thickened to the finger. His speech was slightly indistinct. He complained of attacks of depression without cause. I made a diagnosis of beginning general paresis and sent him to a physician for a corroboration of this diagnosis, which was given. He was then put upon mercurial treatment in the shape of hypodermics of bichloride of mercury, beginning with 1/8 grain daily, and these were rapidly increased until he was taking ½ grain at each dose. These were kept up for two months. At no time were there any marked symptoms of mercurialism. At the end of this time he was given a course of tonic hydrotherapy and small doses of iodide of potassium, *i.e.* 10 grains four times daily, and later sent away for a six months' rest. When he returned he was put upon a similar course of mercurial treatment as that mentioned above. Since that time he has had another two months' course. At the present time he seems to be in excellent mental and physical health. The only somatic sign that has disappeared is the tremor; the others remain as they were. To be sure, this patient has had symptoms of the disease only five years, but during that time the disease has not developed. Whether or not the disease has been arrested permanently cannot, I think, be said at this time. At least I may say that it is one of the first cases that I put upon the intensive mercurial treatment, and it is one that has encouraged me to adopt a similar treatment in many other cases.

The second case is that of a man whom I saw first after he had been for a short time in an institution and was discharged therefrom as a patient in a state of remission. He is now 42 years old. When he was 38 he developed symptoms of mental confusion, associated at times with some violence and at other times with depression. He had given up his occupation as a railway conductor some years before, and had latterly been engaged in the liquor business. Although he denied excessive drinking, it was thought that his symptoms were due to alcohol. He was discharged from the institution after four months' treatment. When I saw him a short time after this (now three years ago) his wife stated that he was indifferent to the family wants, that he was easily annoyed and excited, and when in such a condition he would readily lose self-control, and that he did not display the same interest in himself or in his family that he did before. Examination showed Argyll-Robertson pupils, slight tremor of the lips, tongue, and hands, and exaggerated tendon-jerks. Mental examination showed that he was capable of expressing his thoughts in writing, that his memorial recall of remote and recent events was about as good as the average individual of his age and education, that he revealed a moderately comprehensive insight into his condition, insomuch as he admitted that all that his wife stated concerning his disposition and his attitude toward her were true. His only explanation of them was that he was weak. His orientation was good, his capacity to grasp ideas and to make them the basis of intelligent observation and comment were such as to call for no remark. He had had syphilis when 24 years old, and had been treated by a regular physician for about a year, and said that he was given pills and colorless medicine "that tasted salt." From his history and from his physical signs the diagnosis of general paresis was made. He was put upon injections of the salicylate of mercury, beginning with half a grain, administered twice a week, increasing to 1½ grains, kept up for a period of six weeks, then a six months' interval was allowed to lapse, during which time he received vigorous tonic treatment, and at the end of that time he was put back upon mercurials for a period of three months. At the present day he is earning his livelihood and at the occupation which he had before he went to the sanitarium. Aside from the physical signs spoken of above, he may be considered quite normal. He took an active part in the late municipal election in this city, and gave as legitimate an account of his espousal of the Municipal Ownership Ticket as any that I have heard. He may, of course, be in a state of remission, and it may be that the mercurial treatment has not benefited him. At least I should say it is possible that he would have had as protracted a remission if he had not had mercurial treatment, but be that as it may, I intend to put him through a similar course of treatment at the end of another six months.

The third case in which intensive mercurial treatment has seemed to me of benefit is that of a young man, 32 years old, who came to me in the summer of 1903, *i.e.* two and a half years ago, with the symptoms that were considered to be indicative of "nervous prostration." He had been very active in the business and social world, and had made some success. Without attributable cause he began to worry about his financial future. He feared that he was going to lose all that he had, that he and his family would die in an almshouse. His conduct, in a measure, became based upon this conviction. He refused to put on a clean shirt more than once a week for dinner, although the drawer may have contained a dozen or more ready to wear; he would go into the dining room of a hotel and look over the bill of fare and pick out the least expensive viands. He dismissed his coachman, tried to dispose of his house, gave up a trip to Europe that had been planned, and in many other ways displayed evidences of his delusion. In addition to this he was emotional, particularly depressed; sometimes the fits of depression would last a short time, sometimes several weeks. There was no lack of insight into his own condition; he appreciated how distressing his convictions were, and could be reasoned out of them, but they would return. He still continued to go to business, but his constant attempt to curtail expenses led the other members of his firm to induce him to stay away. There were no evidences of exaltation, even when the micromania was not upon him, and no indications of his lack of capacity to grasp the complexities of the average problem presented to the ordinary individual in daily life. The only physical sign which he had was the Argyll-Robertson pupils, although the knee-jerks were fairly lively. This young man had contracted syphilis when he was 19 years old, and had never had what is considered to be adequate treatment. There was some debate whether the lesion was a true Hunterian chancre by the first physician whom he consulted, and he received no treatment at that time save local treatment. Afterward he came to this city to consult a laryngologist, who suspected that his throat lesions were due to syphilis, and put him upon biniodate of mercury and later mixed treatment. He took this treatment altogether about six months. When I took charge of him he was at once put upon injections of corrosive sublimate, the dose averaging from 1/4 to ½ a grain each day. After the first few doses he developed disagreeable dysenteric symptoms which yielded readily, however, to treatment, and after that he was able to take the sublimate very readily. This young man

remains free from subjective symptoms, but, like the other cases, his pupils are still unresponsive to light.

Those are the only cases that I have to report in which vigorous antisyphilitic medication seems to have been of real benefit. They are open to the objection that a sufficient length of time has not elapsed to justify one in saying that they have been arrested or even modified in their course. They are not, however, open to the criticism that they are not cases which would eventuate in genuine general paresis if the disease process were not checked.

I have to report the treatment of 17 other cases of general paresis in which the intensive mercurial medication was given a thorough and adequate trial, but with no results whatsoever so far as the course of the disease was concerned. None of them was encountered so early in the course of the disease as the three mentioned above.

There is not very much in this report, as you will admit, to encourage one in the belief that general paresis is a disease that may be arrested or cured by antisyphilitic medication administered after the disease has got a thorough start, and this leads me to the statement of what I consider to be the crux of the whole matter, viz., the recognition of general paresis at a much earlier period in the disease than has been commonly done heretofore. The question that I ask myself is does such a majestic disease as general paresis develop with the abruptness which it is said to do by patients and their families when they consult the neurologist, or is this disease heralded by physical, mental, and emotional symptoms which, if they could be observed, would indicate a long time in advance the overwhelming disease process that is threatening? Dana, in a paper entitled, "The Curability of Early Paresis," published about a year ago, spoke of a stage of preparesis, and maintained that it was in this period that antisyphilitic medication might permanently arrest the disease. He did not attempt, unfortunately for us, to depict the features of the disease in this preparetic stage. It may be presumed that he was deterred from so doing because of the inherent and almost insurmountable difficulty of describing what it is in the story of the preparetic and in his appearance that permits the experienced neurologist to say when in his judgment general paresis has begun. I feel that my auditors will all understand what I mean, but I am by no means certain that the general medical reader may divine my meaning. The general practitioner knows that every now and again a serious cardiopathy, manifest by tachycardia, general physical weakness without adequate or attributable cause, and symptoms of this enfeeblement, are dependent upon a slowly developing, almost an undetectible, aortic stenosis. At a stage when such symptoms as those that I have described exist neither murmur nor enlargement of the heart can be made out. Still the man experienced in diseases of the heart will recognize such symptoms and be willing to make the diagnosis at a period when an individual less experienced would hesitate if not deny such diagnosis. That which permits the specialist to make the diagnosis in such a case is summed up in the word experience, and that which permits the neurologist to make the diagnosis of general paresis in its very earliest stages is of the same quality. Unfortunately, it is not often that he is permitted to try his practised hand in making the early diagnosis, for the majority of the cases that are seen or brought to him are cases in a well-developed or in an advanced stage. That which we may legitimately ask, I believe, is that the diagnosis of neurasthenia should never be made by the general practitioner until after a routine physical examination has been made of the patient. Such examination will be productive of good in two directions; in the first place the diagnosis of neurasthenia will be made much less often, and in the second place general paresis will occasionally be recognized in its incipiency. I need not say to this audience that the slightest manifestation of loss of the pupillary light phenomenon, premonitional display of labial and facial tremor, unattributable lingual tremor, disorder of the tendon phenomenon, particularly of the lower extremities, occurring in a patient who has some one, any, or all of the symptoms of neurasthenia, should be immediately put in the category of suspected cases of general paresis, and if the suspicion is a strong one, should, I think, also be put upon vigorous antisyphilitic treatment, and especially if the patient admits that he has had syphilis, and that he did not receive vigorous and protracted treatment. I should like to say that a patient presenting such symptoms should be sent to a neurologist who will avail himself of a more extensive examination, particularly a cytological examination of the cerebrospinal fluid and of psychological tests for apperception, mental coordination, memorial recall, and other components of close and critical reasoning. Perhaps one should attempt to say more specifically what the mental and emotional phenomena of this stage of general paresis which heralds the onset, but I do not think that it can profitably be done. Even in the earlier period of the disease, when the symptoms of general paresis are well developed, the variability of the mental and the emotional phenomena is so profound that a description of these qualities of the soul is very difficult. For instance, it is commonly stated by psychiatrists that a lack of comprehensive insight concerning their condition is one of the chief mental attributes of the patient with general paresis, but I have no doubt that we all have patients with general paresis who are as keen about their disease as sufferers from some of the visceral diseases, let us say, so that loss of insight cannot be made a criterion, neither can any one of the other multiform mental manifestations of the disease. Nevertheless, this does not deter me from saying the most constant mental defect of the general paretic, in my experience, is of promptness and completeness of memory, and that therefore memory tests should be made most carefully in every suspected case.

A discussion of the prognosis of general paresis resolves itself into a discussion of the prevention of the disease, for it must be admitted that the fully developed disease will end invariably in death. Of the two sources from which it flows—syphilis, and that indefinable something that has come with progress, we, as physicians, deal only with the first. Are we doing all that we can to prevent syphilis, and are we doing all that we can to cure it? The neurologist more than the worker in any other department of medicine sees the remote and terrible devastation caused by syphilis. Committees on the "Social Evil" would have us believe that the best way of preventing syphilis is through the coercion or control of the sex that commonly disseminates it. Personally, I believe that much could be done to prevent the occurrence of the disease if colleges would require as one of the entrance requirements from their applicants not only a knowledge of academic subjects, but likewise a theoretical knowledge of the capacity for misery and suffering which an unnecessary and promiscuous sexual intercourse has. There are some natures that will always take risks, no matter how hazardous they are, but numerically they are not so great, I think, as those who are by nature conservative, and who, if properly warned, will look out for their welfare. Americans marry early in life, and no means should be spared to assure them that

pre-matrimonial continence is a factor that makes for post-matrimonial health.

The second factor in the prevention of general paresis, viz., that of adequate treatment of patients with syphilis, is one that I hesitate to discuss. I feel reasonably certain, however, that patients with syphilis are oftentimes given a positive assurance that their disease has been cured after what I consider has been an inadequate administration of mercurials. At least this statement is true if I am to rely upon what patients who have had syphilis, and who come to me for the relief of symptoms which may or may not have flown out of syphilis, tell me. My experience as a teacher in a post-graduate medical school has shown me that many physicians believe that iodide of potassium is an antisyphilitic agency in the sense that it overcomes, destroys, or interferes with the bacillus of syphilis or its products, or if this phrase is objectionable, with the virus of syphilis. The teaching that iodide of potassium is an antisyphilitic agency only in so far as it may assist in the removal of syphilitic products is not always acceptable to them.

In conclusion, I wish to say that the prognosis of general paresis stands in certain relationship to (1) the time of the diagnosis of the disease, (2) the clinical type of the disease and (3) the age of the patient. If the disease can be detected in what Dana has called the preparetic stage, there is a chance of arresting it. The type of the disease that is least influenced by any kind of treatment is that form that begins insidiously, in which there is no symptom that stands out conspicuously to attract attention, and in which the patient often keeps to his occupation until a comparatively advanced stage of the disease and finally the prognosis is worse in the young.

37 West Fifty-fourth Street.

THE THERAPEUTIC VALUE OF WARM MOIST AIR AND HOT DRY AIR IN THE TREATMENT OF DISEASES OF CHILDREN.*

By THERON WENDELL KILMER, M.D.,

[NEW YORK.

Our ancestors long ago discovered the fact that a baby with croup was greatly relieved by the use of steam generated by a teakettle. This, we may then safely say, was the first application of the therapeutic value of warm moist air in the treatment of disease.

For many years various kinds of so-called croup-kettles have been devised for the scientific application of warm moist air in the shape of steam in respiratory diseases. In some hospitals for children the attending physicians have thought so well of this remedial agent that separate rooms, called "Inhalation Rooms," have been provided in the hospitals, where plain or medicated steam is constantly being generated, so that the little patients can be placed from time to time in this warm, medicated atmosphere.

What are the diseases, then, to which infants and young children are subject, and in the treatment of which the beneficial therapeutic value of warm moist air is seen at its best?

Croup.—A child suffering from catarrhal croup, when placed in a warm, moist atmosphere, will be seen to be immediately relieved, the harsh, brassy cough, the stridulous inspiration, and the cyanotic face will all be much improved by the inhalation of either plain or medicated steam.

*Read before the West End Medical Society on November 25, 1905.

Bronchitis.—In acute bronchitis, especially if it be of the capillary variety (of the fine tubes), there is nothing like the application of steam to ameliorate the symptoms. Many an infant with bronchitis receives no other form of treatment, with a happy termination to an otherwise fatal issue. Take a baby, for instance, breathing 40 to 90 to the minute, somewhat cyanotic, chest full of dry, crackling râles, and a tight, constricted, spasmodic condition of the fine tubes of the lungs; place this child in a crib draped with a sheet or blanket, and introduce under this tent plain or creosote steam by means of a croup kettle, and note the almost immediate change in both the character and number of the respirations. Oftentimes the baby will go to sleep while being steamed and thereby get a much-needed rest. A baby with bronchitis should have these inhalations for, say, half an hour out of every two hours. He need not be disturbed to steam him. If he is asleep when steaming time arrives, simply cover his crib with a sheet or blanket and introduce the spout of the croup kettle underneath the sheet (Fig. 1).

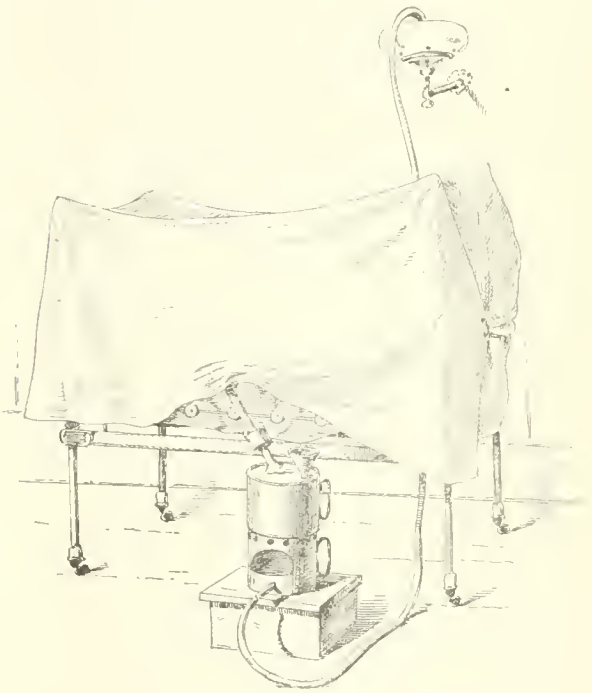

Fig. 1.—Crib draped and croup kettle in place.

In some cases, a child from one to four years old is best steamed by having it on the mother's or nurse's lap, covered by a sheet (Fig. 2). The child is often less frightened when steamed in this position.

Asthma.—Attacks of asthma, although infrequent in infants, do occur, and nothing will abort an attack or relieve the baby so quickly as steam inhalations.

Pneumonia.—In both bronchopneumonia and lobar pneumonia in babies, steam is one of our best and most used therapeutic agents, and is applied in a similar manner to that described under the head of bronchitis. Steam inhalations, the application of mustard to the chest, an occasional dose of castor oil, and proper feeding and hygiene, often constitute the only remedial agents in many cases of pneumonia in infants.

Diphtheria.—In cases of faucial or laryngeal diphtheria, we find that occasional inhalation of steam greatly relieves the congestion and dryness of the throat that usually accompanies this disease.

Laryngitis.—In cases of laryngitis seen in older children, inhalations of plain steam or vapor containing benzoin or turpentine will be found to be of great benefit.

Whooping-Cough.—Some children with whooping-cough will rest more easily if a steaming is given just prior to the child going to bed for the night. In others the paroxysms will be greatly reduced in intensity by giving the child a steaming two or three times a day. In many cases of croup, pneumonia, and bronchitis, the patient seems to be better when the croup kettle is kept going continually night and day. I have a case in mind where an infant of six months with capillary bronchitis required the continuous use of the croup kettle for seven days and nights. Whenever the steam was stopped, he seemed to tighten up and become worse. Of course, one must provide for the continuous flow of fresh air in a room when using a croup kettle without interruption.

FIG. 2.—Child held on the lap of the nurse; croup kettle in place.

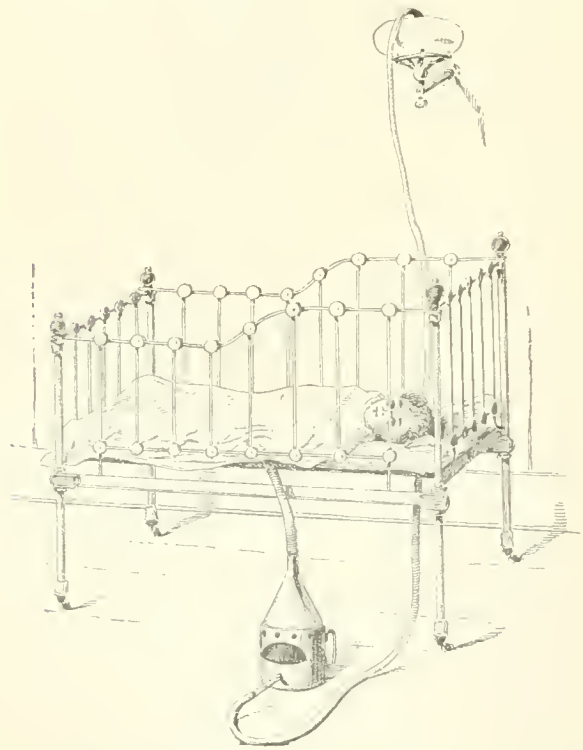

FIG. 3.—Child in a bath of hot dry air.

Tonsillitis.—When the tonsils are large and the throat is intensely red and swollen, much relief may be had from an occasional period of inhalation. The warm moist air has a marked beneficial action upon this swollen condition of the throat.

Having outlined briefly the diseases in which warm moist air is used as a therapeutic agent, let me name a few conditions in which the application of hot dry air, applied to the external surface of the entire body or part of the body is exceedingly efficacious.

Nephritis.—In treating an infant or child with nephritis, especially acute nephritis, where there is diminished urine, puffy eyelids, swollen ankles, and a dry skin, almost magical is the effect of a ten minutes' bath in hot dry air. These air baths may be given in the crib without disturbing the child in the least. The baby is placed upon a rubber sheet, which is covered by a white sheet. A covering of a sheet and one or two blankets is placed over the patient, excluding the head, and is tucked in well on the sides of the crib. (Fig. 3). Two safety pins are pinned to this cover and strings tied to these pins, so that the cover may be raised along the center to a height of ten to fifteen inches, thus making an air space between the cover and bed in which the child lies. This space is flooded with hot dry air generated by a kerosene lamp covered with a tin funnel with a long spout, or better, by the use of the apparatus described later on. After the patient has had this dry hot air bath, the skin should be rubbed dry. The head should be kept cool by the use of cold wet compresses.

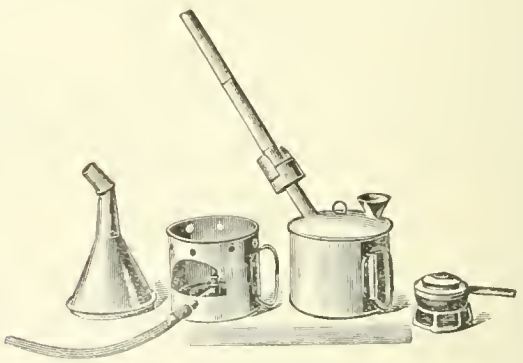

FIG. 4.—The complete apparatus.

Sprains.—Oftentimes one or two applications of hot dry air to a sprained joint are all that is necessary to effect a cure.

Rheumatism.—The use of hot dry air in cases of acute articular rheumatism is extremely efficacious. In older children with red, swollen, painful joints the application of the hot air bath to the joints two or three times daily will give great relief. The pain will disappear and the swelling will be reduced.

The application of hot dry air is recommended by some for the treatment of local septic infections and pneumonia, especially when accompanied by the pain of pleurisy.

Having given the various diseased conditions which are markedly relieved by the inhalation of warm moist air and by the application of hot dry air, let me explain in detail the methods of application by means of the improved combined croup kettle and hot air generator, which I have lately devised.

Having used various croup kettles during the past ten years, and having seen the evil effects of many of them, such as the danger of fire, scalds, etc., I came to the conclusion that an improved croup kettle was almost a necessity. The thought occurred to me to

combine the kettle with a funnel and asbestos spout for the application of hot dry air. The result is the following apparatus, which, although a trifle more expensive than the common croup kettles on the market, is far superior to them in many essential details.

It is almost impossible to upset it. It uses gas and can be kept going for weeks, if necessary, with no attention save the occasional addition of water. The fire pot may be turned upside down, and the burner will not drop out. The water boiler will not fall off the fire pot on the least provocation, nor will the cover and spout fall off when least expected. It may be carried from place to place while lighted with no fear of setting fire to the house, scalding the patient, or burning the hands. Many other advantages will suggest themselves when using this apparatus.

It consists (Fig. 4) of a tin funnel chimney, a fire pot containing a Bunsen burner for gas and an alcohol lamp; a water boiler with a cover; a jointed tin tube in two sections with a gauze chamber, and an asbestos tube. There should therefore be ten parts to the complete apparatus.

Fig. 5.—Apparatus for supplying warm vapor.

To Use the Croup Kettle.—If using gas, place the Bunsen burner in position on the bottom of the fire pot with the round flat base of the burner slipped under the two tin strips on bottom of fire pot. Have the long end of Bunsen burner protruding through the round hole in rim of fire pot near bottom. Attach one end of any ordinary gas tubing to a gas burner which is near the place where the croup kettle is to be used. Attach the other end of the gas tubing to the long end of the Bunsen burner (Fig. 5).

Fill the boiler half full of water and set it firmly on the top of the fire pot. Turn on gas at the key, and when the air is expelled from the gas tubing, apply a match to the Bunsen burner. Regulate flame at the burner by sliding the air shut-off one way or the other until the flame is blue and does not sputter or blow. If plain steam only is required, put on the cover to the boiler and connect the tin spout as shown in Fig. 5. If medicated steam is required, place a piece of surgeon's gauze or old handkerchief wet with the required medicine in the small gauze chamber; the steam will now pass through this medicated gauze and become impregnated. If there is any drip from the steam spout, it is caught by the lip of the gauze chamber and re-enters the kettle. The small tin gutter around the top of the boiler also prevents drip falling on the floor. The bottom being weighted prevents an accidental upset. By means of the two handles the kettle can be moved without fear of spilling or burning the hands. When more water is required, pour it through the small funnel in the boiler cover. If gas is not obtainable, substitute the alcohol lamp for the Bunsen gas burner.

The crib is draped with a sheet making a tent over the child, and the spout of the croup kettle is inserted under the edge of the sheet.

To use the apparatus for the application of hot dry air, insert the Bunsen gas burner (or alcohol lamp), as described above. Place the tin funnel chimney over the fire pot, and see that it fits tightly. Place the asbestos tube over the end of the funney chimney (Fig. 6).

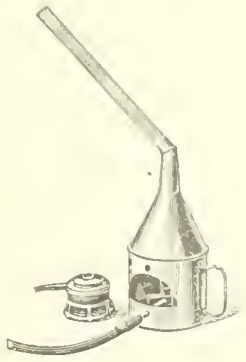

Fig. 6.—Apparatus for supplying hot, dry air.

Turn down the gas at the key, until the yellow flame is only about an inch high. (In the case of an alcohol lamp, use the small aperture in the lamp cover.) The hot dry air may be applied to the entire body, or to any part of the body, by covering the part to be treated with a heavy towel or sheet, always allowing some air space between skin and towel. This may be accomplished by two circles of stiff wire a few inches larger in diameter than the part which is to be treated, and placing these circles over the part; cover them with towel or sheet. Insert the end of the asbestos tube under this towel or sheet. Any degree of temperature may be obtained in this manner.

165 West Eighty-fifth Street.

THE PSEUDO-UREMIA OF CHILDHOOD.

By WOODBRIDGE HALL BIRCHMORE, M.D.,

NEW YORK.

During the twenty years and three just past the writer has seen some dozen or more cases of illness in children and nine cases in young adults, in which the symptoms if examined superficially would certainly justify the diagnosis of uremia, which had been already made in at least a half dozen cases seen in consultation, yet to the writer it seemed certain that the comatose condition was due to a very different poison.

The cases seem to divide themselves into three groups by sex and age, but in all the pseudo-uremic coma was the important symptom in the opinion of those whose duty it was to care for these patients.

Group 1. Five cases in young women, three between thirteen and sixteen years, two aged seventeen and nineteen years respectively.

Group 2. Four cases in young men, two aged fifteen years, one aged seventeen years, and one aged nineteen years.

Group 3. Eleven cases. Six cases were in girls between three and twelve years, five cases in boys between five and thirteen years.

This group of twenty cases was sufficiently well defined and sufficiently well marked to justify a strongly held opinion as to the true nature of the illness and the causes of the typical groups of symptoms. It also appears that the typical and severe cases are very rare, and the writer wishes to insist that the diagnosis of uremia had been made by really skillful men in each of the cases, and in two of them there was special reason for the mis-

take because albumin was found in the urine, although the quantity was small.

Clinical Picture.—Eliminating all the personal symptoms, *i. e.* those which occurred in one case or two only, and considering only those which were present in all the cases, the group of symptoms representing the disorder appears as follows:

All the cases at the beginning complained of very severe headache; in the youngest children the parents or nurses "believed" that there had been "slight spasms" with causeless fits of crying or ill temper; in the older patients there was a history of a chill more or less severe. After the headache had lasted an hour or two the patients became sleepy, and before long were sunk in the strange lethargy which occasioned the alarm and caused the physicians to be sent for. When seen, the victims were sleeping soundly and it was practically impossible to rouse them sufficiently to gain anything in the way of coherent answer or useful information. The skin was dusky; in some cases it might have been called "bluish"; in others the term "of a purple hue" would best describe it. The *pulse* was slow and weak; in one case it had fallen below fifty; in another it was fifty-six to the minute; but the average was fifty-nine. The *respiration* was very faint, and anywhere from ten to fifteen to the minute. Cheyne-Stokes breathing is noted twice.

The *temperature* was very high; 102.4° F. and 103.2° F. were noted. In one case the temperature is recorded as 103.8° F., but is marked with (?), as if it was considered doubtful.

The *pupils* were spasmodically contracted in every case and were not sensitive to even very bright light. There was one exception to this contraction in which the pupil is said to have been dilated, the words used are "spasmodic mydriasis." This dilation occurred in the case of a young woman and the headache had been accompanied by disorder of vision previous to the comatose stage.

Whatever else might be the matter it was plainly to be seen that something had so neutralized the *besoin de respirer* that the patient would die if the condition was not at once neutralized. On that question no words were wasted by anyone, no matter how much opinions might differ in respect to causes, and the diagnosis of uremic poisoning made in the first three cases by the attendant physician was not considered at all in the discussion of the treatment. At the same time the absence of albumin seemed to exclude any such trouble; but had the albumin appeared in the first cases instead of in cases seen later, it is probable that a dangerous if not fatal mistake would have been made.

Taking the picture as it stood the cases had a most marvelous resemblance to muscarin poisoning, and since an analogue of muscarin can be produced by miscarriage of the digestive process there was something very suggestive in the condition.

In all cases the very first interference was to give a hypodermic injection of sulphate of atropine to stimulate the respiratory center, and it was given in sufficient amount to do this, and strophanthin by hypodermic injection instead of digitalis per os was used to steady the heart. Reaction began after some minutes in all cases. The breathing was noticeably better in all of them as soon as the atropine began to take effect, although the action was delayed probably by the extreme sluggishness of the circulation.

As soon as the patients could be roused enough to make it possible, a very large dose of an effervescing saline cathartic was given, and after a half hour this dose was repeated, no attention having been paid to the results if any from the first dose. In every single case the exhibition of the saline was very quickly followed first by the complete evacuation of the bowels, secondly by the equally complete disappearance of all the symptoms, although the length of time required for this latter varied; in one case the narcosis lasted in some small degree for ten hours after the emptying of the bowels; in another case the lethargy disappeared all but instantly, but the average time between the action of the saline and the disappearance of the symptoms may be put at three hours as a fair average.

While the cases just referred to are distinctly typical, they also probably represent the maximum severity, and there are possibly many much less severe forming a rather large group in which these cases should rightfully be included, a series of cases of indigestion or faulty digestion in which the poison which overpowers the respiration center is produced in a quantity quite sufficient to do very serious mischief, but also in quantity vastly less than in the cases here referred to. An additional interest is given to them by the strong resemblance of the symptoms to those of muscarin poisoning and the exceeding ease with which these various bodies neurin, cholin, and muscarin, exchange relations. The fact that the members of this group can be called into existence one from another by the simple process of oxidation and dehydration should never be lost sight of.

The record of sudden onset and the lack of any record of constipation also demands attention, indicating that in these severe cases the poison is either preformed or that the conditions needed for the rapid formation of large quantities exist.

In addition to this group a number of cases which may be described as chronic poisoning from the same cause are noted, in which the mother or nurse becomes accustomed to the somnolent condition of the child, who is allowed to grow worse and worse for a prolonged period, and finally dies suddenly, usually in sleep without medical attention. These cases cannot be treated in the summary fashion in which the acute cases can be handled because the patients are so weak that serious results would follow. In these cases the urine contains albumin, apparently in every case, and is also likely to contain indican. The mother will state that there is nothing the matter only the child "sleeps and sleeps," but the slow respiration and slow, weak pulse are diagnostic.

In these chronic cases the treatment seems to demand a very different method, at least so my memoranda appear to indicate. In these cases also the hypodermic syringe is an invaluable aid in treatment. because it is only by the use of this weapon that the physician can have any surety, almost any hope of obtaining reaction to the drugs administered.

Strychnine nitrate, strophanthin (digitalin doubtfully), and atropine appear to be the best weapons. In some cases very small doses of calomel, 1-8 grain every hour until effective, seem to be the most satisfactory. Some saline water to obtain effectual emptying of the bowels, of course, must be used, but the one thing to be feared is that the heart or respiration center will give out suddenly. The temperature, which is so high in the acute cases, is less markedly elevated. Probably the mother or nurse will say that the child has had a very high fever, but that this has passed away. The thermometer will probably indicate 99.3° F. to 100.5° F. seldom higher.

I have seen one case in which this condition had lasted for five days before professional aid was asked for. It was in a girl aged ten years, and it was more than a week before the pulse came out strong and full, showing how serious was the damage to the heart. One boy, aged twelve, in whom the poison had been acting for at least a week, rallied and seemed very much better, and then suddenly became comatose and died from heart failure. In these so-to-say chronic cases the albumin in the urine is the sufficient reason for the mistake in diagnosis.

Up to the present the information at hand gives absolutely no light on the reason for the formation of the poison.

If the writer's experience is any guide, this disorder of digestion is rare enough to be called uncommon and serious enough to be interesting. It would be very interesting if the condition could be traced to the habits in respect to food, because the group of poisons apparently concerned are all of them "substitution ammonias."

These cases also afford an excellent illustration of the range of usefulness which is gradually being predicated to hypodermic medication. How absolutely powerless we physicians would have been in the face of these cases if we had not this important weapon and preparations suitable for use therewith. More than one hundred drugs are suitable for use in this way, yet the manufacturing chemists do not seem to see the opportunity, for every alkaloid and glucoside can be used hypodermically if only suitable preparations are available, and the number of conditions in which they would be useful is simply legion. Ptomain-poisoning by other substances than the one causing these cases certainly occurs, and the physician who trusts to other methods than the hypodermic is surely taking long chances. Even when given *per os* the elegance and "civility" of the little pellets is very engaging, but they are absolutely essential in treating conditions like this to which I have applied the name of pseudo-uremia. The coma says the poisoning is uremic—but it is not so, and the ordinary methods of medication are simply useless.

A FEW MORE WORDS CONCERNING MICE AND PNEUMONIA.

By E. PALIER, M.D.,

NEW YORK.

Elsewhere* the writer has detailed a series of experiments which led him to the conclusion that house mice were the main factors in the causation of pneumonia. In this short communication the author wishes to consider briefly some well-known facts in connection with this disease, which will serve to corroborate the above conclusion, and which will at the same time find an easy explanation—facts which cannot be accounted for by adopting the old theories.

It would be unprofitable to repeat here at length what has been described elsewhere; but in order to make this paper more intelligible, we shall say that from experimental evidence the following statements have been made: Firstly, the microbe causing pneumonia is very polymorphous; secondly, a similar microbe was found in the mouths of all healthy individuals examined; and thirdly, the microbes which were found in healthy individuals or in those suffering from pneumonia were not virulent enough to cause such a disease when injected into animals like the rat, which are not very susceptible to them. On the other hand, these microbes acquired a great virulence when they passed through a susceptible animal, like the house mouse. Owing to the reasons stated above, the writer has thought that the most suitable name for the bacteria in question would be diplo-lanceco-bacilli-cocci, or for the sake of brevity, d. l. b. c., instead of pneumococci.

The previous theories were that the pneumococci, or, as the writer calls them, the d. l. b. c., might remain innocuous in the mouths of healthy individuals, but under certain circumstances they acquired virulence and caused pneumonia. How this virulence was suddenly acquired the authors who made such statements could not exactly tell. Netter thinks it depends on metereological changes, but he has not proven it by facts, it is simply a surmise. Microbes are affected by heat, chemicals, etc., but it yet remains to be proven that metereological changes, whatever Netter understands under such a term, affect the virulence of a microbe.

The question suggests itself, why is pneumonia more prevalent in winter than in summer? The d. l. b. c., or pneumococci grow at a temperature of from 20° to 42° C. The optimum of temperature is 35° to 38° C. The d. l. b. c. then should develop and thrive better in summer than in winter, if we accept the old theories, and pneumonia should be more frequent in summer, as are other infectious diseases, like cholera, for instance. The cholera bacillus is capable of growing at much lower temperatures than the d. l. b. c., and yet cholera does not easily develop in winter.

A great deal is being said about bodily depression as playing an important part in the etiology of pneumonia. But is the body more depressed in winter than in summer? Authorities practically agree that the disease in question is most prevalent in the months of December, January, February, and March. In March, especially, the disease is most prevalent. Is the body more depressed in these months than in July or in August for instance? Such statements are simply haphazard and should never have been entertained by any one who lays claim to scientific accuracy. Only scientific data should be accepted, but no indefinite, vague statements. We know, furthermore, that people apparently in good health may suddenly develop pneumonia, whereas people who are very weak may not get it.* The advocates of the depression theory will say that the former were depressed and the latter were not depressed enough. How far must one be depressed and how must the depression manifest itself?

Another theory recently advanced is that pneumonia is a mixed infection, and when the saliva of two or more persons is mixed its virulence is enhanced. The author of this theory does not say what microbes he found in the several sputa which he injected into animals, but simply states that when he injected into rabbits sputa of two or more persons, they proved to have a better effect than where the sputum of one person was injected. To make the experiment of any value it would be necessary to experiment with the cultures of the sputa and to know what one injects. When one injects sputum one does not know what he injects.

Medical News, November 18, 1905

*Healthy children are quite as liable to be attacked by pneumonia as those who are delicate, or cachectic, if not even more so." Keating's Cyclopedia of the Diseases of Children, vol. ii, p. 587

According to such a theory kissing ought to be fraught with danger, as the sputa are apt to mix and usually do mix together. In May and June, which are usually months for love-making and marriages, pneumonia ought to be most prevalent. Pneumonia ought also to be more prevalent in affectionate families where kissing is done to a great extent than in institutions like asylums where labial contact is not indulged in, and chances of the sputa mixing are very remote.

Authors on the whole agree that the pneumococcus is found in the mouth of almost every healthy individual. Now it is entirely absurd to imagine that every one carries within himself germs that at any time may become virulent enough to cause pneumonia. This savors more of mysticism than of science. If this were the case the human race would have by this time succumbed to pneumonia.

Nature, as a rule, supplies the healthy organism with means of defense against foreign intrusion. But, in the case of the d. l. b. c., nature has put into almost every healthy human being a dangerous enemy which at any moment may cause in him one of the most serious diseases, and also his death. Such a notion seems to me to be entirely absurd.

In my mind, as proven by my experiments, the d. l. b. c. which are found in the human being are far from enemies; on the contrary, they perform useful physiological functions in preventing the invasion of other microbes, and they act probably also as scavengers of the respiratory tract. In the stomach of the healthy human being there are usually found two microorganisms, yeast, and a small, slightly motile, rod-shaped bacillus which I have called *Bacillus chlorhydrici*, owing to the fact that it thrives in a medium containing a weak solution of hydrochloric acid.

Now these two microorganisms perform useful functions, a description of which will be given elsewhere.

What is meant to prove is that the bacteria which are our habitual hosts are not our dangerous foes, but on the contrary, our benefactors. This is in accord with the law of natural selection. For the d. l. b. c. to become virulent they must pass through a susceptible animal, and I find that the house mouse is most susceptible to them, and hence I have reached the conclusion that the house mouse is the main cause of it. I say the main cause and not the *only* cause, because there may be other susceptible animals which act in the same way; but never does a microbe acquire virulence from itself while remaining in the same medium, owing to meteorological changes.

Let us consider how mice cause pneumonia. In the months of December, January, February, and March, there are usually many mice in the houses, especially those whose plumbing is defective, and which are in a general poor sanitary condition. Mice, as is well known, work themselves through under sinks, and hence are mostly abundant in houses where the plumbing is not open, where there are many nooks and corners around the sinks. In trying to obtain mice for experiments I learned from many people that mice are more abundant in the house in the months referred to above than in the summer. Young mice seem to be especially abundant in the month of March. Now young mice are especially susceptible to the d. l. b. c. The young mice come into the rooms to look for food; they can easily get inoculated with human sputum. These mice, either through their feces, or after their death through their decomposing bodies, spread virulent d. l. b. c., which may cause disease in man either by inhalation or by inoculation through some abraded surface.

Now it is not easy to find dead mice for dissecting to see whether any of them actually have died from d. l. b. c.; but the author was fortunate enough in finding two young dead mice, which showed many d. l. b. c. in smear preparations made from the blood. Mice, as is well known, usually die in nooks and corners, and it is indeed very hard to find them after they die. But the fact that even one dead mouse showed in its blood the d. l. b. c. and the characteristic pathological changes in its various organs, goes a great deal to prove what has been said before.

In poorly ventilated rooms the virulent d. l. b. c., emanating from the feces of infected mice or from their decomposing bodies, become abundant and the chances of contracting pneumonia are great.

The above theory will also afford a plausible explanation for the duration of pneumonia. Virulent d. l. b. c. do not retain their virulence indefinitely, but lose it after the third or fourth subculture. When the exogenous virulent bacteria in question enter the human system, which is very resistant in regard to them, it takes from seven to nine days for the body to dispose of them; or in other words it takes them so long to lose their virulence in the new medium, the human body. One may infect himself with microbes whose virulence is well nigh exhausted, and then a much shorter time is required for the patient to get well. On the other hand, one may inhale a great quantity of very virulent germs and the body may then be unable to cope with them, and the case results fatally. It is impossible to explain the above phenomena satisfactorily by adopting the statement that the endogenous pneumococci, owing to metereological causes, or otherwise, suddenly become virulent.

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SOME OBSTETRICAL METHODS PRACTISED IN THE PHILIPPINES.

By Wm. DUFFIELD BELL, M.D.,

late major and surgeon, United States volunteers.

The popular belief that the child-bearing women of a barbarous and semicivilized peoples escape many of the pangs their civilized sisters undergo, would receive quite a setback were a careful investigation made. For a period of more than fourteen months, I was a resident of an inland town in the province of Rizal, on the island of Luzon, Philippine Islands, and during that time had leisure to devote to the careful study of obstetrical methods in vogue there. As a result of my observations there I was able to convince myself that the so-called ease and safety with which the semibarbarous peoples of the Philippine Islands were supposed to pass through the period of labor could be replaced in reality by tortures and the process could be followed by serious and far-reaching consequences. From the start the crude, interesting methods resorted to during the confinement of a native woman furnished food for considerable reflection. No attention was paid to any sanitary conditions of the patient or of the surroundings.

The patient, clad in the scanty garments worn by native women in the Philippine Islands, was placed upon a mat on the floor of the main room of the hut. The entire family, children, dogs, and those neighbors who could spare the time, ranged them-

selves, male and female, around the room in order to be present on this auspicious occasion. One slight tribute to the modesty of the woman in question was observed in the fact that her limbs were draped in her somewhat scanty garments. As soon as the first real pains manifested themselves and locomotion was somewhat impeded, the patient assumed the recumbent position, and a large, broad piece of cotton or linen cloth was passed around the abdomen and the ends passed under the lumbar region and hips. These ends being seized by four persons, two at each end of the cloth, and the persons being seated on the ground, with their bare feet pressed firmly against the body of the patient and made strong traction on the cloth so as to tighten it over the abdomen, increasing the pressure as required to assist the pains of expulsion. The bag of waters if not already ruptured, very soon broke under this method of procedure and as soon as any portion of the child presented it was immediately seized by a fifth assistant and traction made, in a more or less vigorous manner, in order to draw it forth regardless of consequences. Should any delay, natural under the circumstances, be occasioned, further aid was given in a more forcible manner by placing a plank about six or eight feet long by a foot wide and of suitable thickness transversely across the abdomen of the patient and upon this plank a native, man or woman, mounted barefoot. Slowly, but with considerable force, this assistant then raised himself on his toes and allowed the heels to descend forcibly on the board. The process was repeated for a considerable time, the first four assistants meanwhile tugging manfully at the cloth around the lower portion of the body. This last auxiliary process, viz., the plank with its superimposed weight, was usually effectual except in breech presentations, in which case a crude attempt was made at version, the hands of the assistant performing this important service being seldom in a proper sanitary condition to recommend them for such work. Few cases in which these various methods were used were free from laceration of either cervix or perineum, or both; and in some cases noted there was sufficient violence employed to cause rupture of the uterus and fatal results.

The birth of the child was followed by the expulsion of the placenta by the above means, and, should the process be delayed, forcible traction on the umbilical cord was made to such an extent as to tear away portions of the placenta, and often large sections of this body were left to find their way from the uterine cavity of their own accord. Weeks and even months later the results of such practice were noticed in the septic conditions which would naturally follow retention of the membranes. After the birth of the child the umbilical cord was severed by a blow from the bolo, a knife like a machete, carried by nearly every native man in the interior of the islands, and the end nearest the child was knotted. This was further reduced in length after the mother had bathed both the child and herself in a nearby stream, or well, which ablution was usually performed within an hour after the birth, and the newly-made mother then proceeded to take up her usual avocations, temporarily postponed by the above interesting event.

Notwithstanding these crude and somewhat violent methods employed to hasten the birth of a child, some few women and their offspring managed to escape without serious injury, and some even went through their confinement without the resort to artificial means. As there were no records extant from which any data concerning these cases could be obtained, careful notes were taken in one hundred and five cases to which it was possible to obtain access, and the results showed somewhat startling facts. Three were cases of twins. In two of these the mothers were uninjured and the children were safely delivered. In the third case, the woman was the daughter of the presidente or head man of the town; after one child had been delivered dead and with a broken arm, the presidente mercifully interfered and put a stop to the brutal methods employed and sought the aid of the medical officer on duty with the American forces in the town; through the efforts of this man the second child was safely delivered.

Almost superhuman efforts were necessary to secure proper sanitary surroundings and to enforce antiseptic methods, in consequence of the modesty which native women seem to regard as necessary in their dealings with persons of another race. This added to the many difficulties a medical man meets when called to attend native women. It is seldom that a medical man is called upon in obstetrical cases until native methods have been used and the patient's condition has become so grave as to force even a Filipino to recognize the inutility of any further torture. Extensive laceration of both perineum and cervix was noted in thirty-eight cases where it was possible to secure the proper examination, and six of these were further complicated by prolapsus uteri. Prolapsus uteri and inversion were noted in two cases which resulted fatally from hemorrhage, and septicemia. In four cases toleration of the condition of inversion appeared to exist, and the uterus became reconciled to its new conditions, its position, and surroundings, and the patients on an examination about twelve months later had apparently recovered perfect health. Inversion in these four cases was the result of traction from below, exerted in removing the placenta by forcible traction on the umbilical cord, and of the abdominal pressure from the plank with its superimposed weight. Metritis and endometritis existed in all of the thirty-eight cases examined. Five of these were traced directly to a gonorrhea, and two to venereal excess in newly married women, and which the rougher handling during the process of parturition aggravated. One case was of syphilitic origin. It may not be out of place to state that the venereal diseases met with in such great numbers in Manila and other seaport towns of the Philippine Islands are comparatively rare in inland towns where communication with the outside world is difficult and infrequent. Much venereal trouble has followed in the wake of the Spanish, Filipino, and American armies which have traversed the islands, while isolated towns and villages have escaped.

One case of an imperforate hymen was noted in a girl fifteen years of age, a native of a small mountain village about twelve miles from the town of Morong, Rizal Province, in which town I was stationed. The history of this case was as follows: the patient had never menstruated, though the native women frequently began as early as ten years of age; for more than two years every other month there had been intense pain over the left ovary and the uterus, lasting about four or five days; no flow was noted at any time, and during such paroxysms intense pain also existed over the bladder, accompanied by frequent micturition. This condition would cease for a period of nearly two months and then increase again, the interval between the paroxysms being only marked by tenderness on pressure over the uterus and left ovary, and also by a noticeable increase in the size of the lower part of the abdomen. The girl was an unusually well developed and muscular one for her age and race, and was engaged in

the usual agricultural pursuits of her family, which necessitated the carrying of heavy burdens on the head for long distances and hard manual labor. The attack, for which the attention of the medical man was required, was of greater violence than usual and overcame the prejudices of her family regarding medical attendance. She was brought on a litter from her home to the town and the medical man called upon to render her assistance in what the family fully believed to be a case of labor and for which the crude, interesting but ineffectual methods, (ineffectual in this case) mentioned above as being the usual method of procedure, had been resorted to. Examination of the patient showed great enlargement of the lower part of the abdomen, a largely distended bladder, enlarged and tender uterus, and the presentation of what resembled a bag of waters. The patient emitted the characteristic cries of one in labor as the pains attacked her at brief intervals. Examination of the vagina, which was entirely filled with the protruding mass, showed it perfectly dry. The membrane covering the mass felt hard, tense, and resisting, and was only slightly moved by the pains. The muscles of the abdomen were bruised by the use of the plank and its weight and by the tight cloth that had been applied in the early stages by the native assistants. The catheter was passed and the urine drawn to the quantity of over sixteen ounces, and relief was almost instantaneous, but no difference was noted in the size of the mass projecting into the vagina. Within an hour, the pains having begun again with increased violence and the attack having lasted for more than five days prior to the patient being brought in to me for treatment. the urine was again drawn, the parts below were carefully prepared for operation, and an incision three inches in length was made in the membrane presenting. Immediately two quarts and four ounces of thick, offensive, dark menstrual blood was discharged through the orifice and the pains instantly subsided, leaving only a slight abdominal tenderness. The membrane, through which the incision was made, was found to be an imperforate hymen nearly three-fifths of an inch in thickness over its entire surface, both in the center and at its attachment on the sides. For twenty-four hours a hot vaginal douche of a saline solution was administered every three hours, and on the second day, following the one on which the operation was performed, the patient walked home. Repeated examinations made monthly showed no further trouble, and regular and painless menstruation followed.

In the remaining seventeen cases displacement of the uterus was noted in nearly every case, and in all there was found on later examinations a chronic endometritis with all the accompaniments of leucorrhea, metrorrhagia, menorrhagia, dysmenorrhea, tendency to abortion, which tendency was further aided in many cases by the use of certain herbs and even large needles in imitation of their so-called civilized white sisters. In a climate where all mucous membranes have a tendency to congestion it is not an unusual thing to find even the native woman menstruating two or three times in the course of a month, while the white woman, a resident of the islands for any protracted period, will find her menstrual flow greatly increased in quantity, and the frequency also may be such as to call for the relief of the bracing cold of a northern winter. Anemia, with its characteristic train of symptoms, is the leading symptom in the hemorrhagic type of endometritis, which there attacks native and white women alike.

The life of the native Filipino woman is comparatively short, due to her many pregnancies, much manual labor, insufficient food, and most of all to the crude, brutal, and ignorant practices which bring to her a suffering equally as great as that borne by her white sister.

THE CARE OF THE SICK OUTSIDE OF INSTITUTIONS.*

By BERTHA A. ROSENFELD, M.D.,

NEW YORK.

I HAVE been asked to write about the care of the sick outside of institutions. My paper speaks of the care of the insane, a very important part of the sick, for insanity is sickness. "Its victims are entitled to the same consideration as the bodily sick or injured," is a sentence I have read in an interesting medical report. I say its victims *are* bodily sick or injured. The mind is normal only while its physical basis is strong. If the mind be abnormal, we may presume there is also some physical abnormality, even though not always evident, for pathologists have not yet demonstrated with regard to all mental affections.

To cure the diseased mind, one cannot give too much attention to the body, whose strength, even when apparently sound, has some impairment when mental balance has been lost. Care can never be given efficiently or scientifically to all when large numbers are being dealt with under one administration, for the needs of the individual must constantly give way to the urgent needs of the many. So our State Institutions for the Insane, of which we are so justly proud, prove but a makeshift, because there is not money enough to care for the poor in any other way.

There will not be time to deal fully with the ideal presentation of this subject, so I will just touch upon it. I hope to see the day when there will exist many Homes for Invalids, where voluntary cases of mental disease will be received; also a widely distributed number of regularly licensed houses for those cases which require commitment. In each of these I want a comparatively small number. I expect to accomplish much good work by utilizing religious orders for the care of the insane. In the Catholic Church there are trained organizations of men and women who work for the love of God and their neighbor, and who send their members to all parts of the world. By starting the first model houses on a solid foundation with religious in charge, no charitable plan for the suffering will be too bold to attempt. This is a matter of history.

In the meanwhile, let us try to deplete the ever-growing supply of mental invalids to the big institutions. Let us prevent many acute cases from becoming chronic, by giving them real care from the first. It would be deemed inhuman were a typhoid fever or a pneumonia patient obliged to wait two or three days for a legal process before skilled treatment could be given; the same would be the opinion regarding a surgical case. Yet in mental disease there does occur this often fatal delay of necessary care. It is an evil resulting from the legal measures required to prevent any unjust commitment. This protection for the many works injury to some.

How can we remedy this cruelty to so many in great suffering? In Germany, every university town has its psycopathic hospital. All crowded city districts should have these special hospitals for the treatment of acute cases of insanity. Our New York State Commission of Lunacy has taken active measures to establish two in Greater New York. There should also be mental wards in the general hospitals.

Mental patients are entitled to the consideration of

*Read before Sixth New York State Conference of Charities and Correction.

a general hospital. To those in whom has developed delirium and consequent irresponsibility, a general hospital should be open just as surely as to a critical surgical or medical case. The longer a disease goes unchecked, the less power remains in a patient's own system to throw it off. In very many cases of mental illness fear is an element of the disease itself, and this makes the physician's work more difficult. One of the first steps in the curative process is to establish confidence in the patient's mind. Confidence helps to quiet the nervous system, which is a dominant influence in resisting disease. This quieting of the nervous system is accomplished more quickly in a familiar environment with a well-known physician in attendance. Where will these be found? In a hospital near the patient's own home.

The consideration of environment is of great importance in the treatment of mental disease, for a consciousness of surroundings is very often most keen among the insane. How many of you have ever seen a ward of excited insane patients? Do you remember your fear and horror? Had you been ill at the time, would you have escaped an injurious effect? Yet it is almost a daily occurrence for a sufferer with a sensitive and disordered imagination to be cast into the midst of sights which it often takes years to drive out of the memory of an absolutely healthy mind. If we fully realize the conditions, the only rest from the thought of them is in work to make widespread measures for their relief.

All authorities on insanity agree that more is accomplished by means of moral treatment or appeal to the mind than by any form of medication. The foundation of success in treatment of the insane is sympathetic relations, and these can only be brought about by careful study of the individual cases. Any one who has made this careful study of many cases must reach the conclusion that cheerful companionship will be a very forcible appeal to many a diseased mind. This is the tonic treatment administered by a friend of my own—a woman who has received the insane into her home for the past twenty years. She can accommodate about eight invalids, and usually has some sane boarders in the house as well. The location is a small town, where at first the neighbors looked on critically. Now they aid by supplying the required cheerful and varied companionship when told there is a patient who will profit by seeing them. One woman cured in this Home for Invalids is especially worthy of mention, as she was pronounced incurable in two institutions. The husband had little hope when he brought her to this third place, as she was over sixty. At the end of five months he was able to take her home, and now they both return occasionally to show the continued good health resulting from the benefit of individual care. In the institutions, forced feeding had been considered necessary, as refusal to eat was a somewhat discouraging feature of the disease. In the Home for Invalids it sometimes took two hours to persuade the sufferer to take a glass of milk, but patient persistence won the day, with the resultant cure. This would not have been likely in a big institution.

Where small numbers are cared for, the motor restlessness characteristic of active mental disturbance may be permitted to some extent, and this will be beneficial to the individual patient. To restrain a harmless physical activity will breed resistance in the patient, and may result in undue violence on the part of the attendants. This is not only an outrage upon the patient, but it is also in direct opposition to the process of cure.

The fear already in a patient's disordered mind is often intensified by the sights he witnesses when put in a large institution for the insane, no matter how kind may be its executive management. It is impossible to estimate the number of cures prevented by this aggravation of the diseased condition as a result of the very surroundings which are supposed to cure. If the needs of the individual be protected, many acute cases of so-called insanity may prove no more serious than a prolonged delirium, and much useless suffering will be prevented, not only for them, but also for those whose disease is chronic or incurable. A number of chronic cases may recover even after years of illness, but it is less likely if they are lost sight of amongst hundreds of others.

Some of the opinions suggested in this paper are fully confirmed by the three annual reports of Ward F in Albany Hospital. In this hospital, Ward F deals with mental cases, coming directly, or developing in the other wards. The reports have been written by the attending specialist, Dr. Montgomery Mosher, to whom is due this most intelligent step in the care of the insane. For what is care of the sick? Evidently that which hastens permanent cure. Dr. Mosher's reports show that the real care of the insane is given in the Albany Hospital District, the opportunity for such being near at hand. I fully agree with his published opinion that there can be no greater charity than that which promotes the recovery from acute attacks of mental disorder.

Within the fortnight I have been asked where to send a case of acute mental disease. It is that of a woman who cannot pay for care. The physician in attendance claims that injury would be done by sending her to one of the big institutions. It is urgent that the invalid be cared for suitably, or the result will be prolonged and perhaps permanent illness, for speedy treatment is of paramount importance in cases of acute insanity.

I cannot but deplore the fact that we have no State provision for these borderland cases, nor for those among the poor who have recovered so far that removal from institutional care would be of great benefit, and yet who are not quite ready for absolute discharge. This need is filled in Massachusetts by the boarding-out system in homes near the hospital and under supervision of the hospital physicians. This has likewise been the method employed to relieve the crowded asylums in Berlin since 1888. Scotland has also had splendid results from this boarding of the insane in families. In Belgium and France the colony plan has worked much good, and thus have been established in all these places those sympathetic relations between the insane and their caretakers which is the foundation of success in their cure.

The increasing numbers of the incurable insane is undoubtedly due to lack of care in the beginning. It also seems as if all research in mental disease at this time is centered in the laboratory. The microscopical analysis of the brain of a dead patient does less good, because the living in many hospitals may not even enjoy rest at night, because of the screams and cries of their afflicted fellow patients. I cannot forget the facial emaciation of a man whom I saw in a well-known private institution where I spent some days to observe methods employed. The resident physician himself told me that what I saw was caused by weeks of unrest due to a continued noisy spell of a nearby patient. The condition was all the more pitiable because the institution was receiving only patients who could pay, and the grounds were spacious enough to have all the scattered buildings required to give comfort to each class of patients.

This is essentially an age of prophylaxis. This principle should be applied to the care of the insane. Germany sets an example well for us to follow. Besides having a psycopathic hospital in every university town, there is in Munich a new psychiatrical

clinic which we have reason to believe fulfils to the greatest degree anywhere existent the essential conditions and requirements of a modern hospital for the insane. These requirements I give in the words of Dr. Stewart Paton of Johns Hopkins University, as expressed in his forthcoming treatise on the treatment of mental disease:

"1. Ease of access. The institution should be near to or within the limits of a city.

"2. A limited capacity, in order that every individual patient may be made the subject of special study.

"3. Perfect construction, equipment, and organization, in order that a thorough and energetic treatment can be undertaken for all patients for whom there is hope of recovery.

"4. A relatively large staff of physicians and nurses.

"5. Ample provision not only for the teaching of students, but also for the prosecution of post-graduate investigations and research in clinical psychiatry, psychopathology, and in anatomy and pathology of the nervous system.

"6. The ready admission of patients and their prompt transference, when necessary, to other more appropriate institutions, and provision for outdoor and voluntary patients."

I cannot close without congratulating the administration of our public hospitals for the insane, upon the fact that many of these institutions employ more than the one resident woman physician required by law. The private institutions, as a rule, overlook the fact that great suffering is often added to that already existing in the mind of an insane woman if a man physician be in attendance. This is one more plea for my subject, for were these women patients outside of institutions, those physicians whom the individuals needed would be employed, and the result would be the care of the sick.

257 East Seventy-first Street.

A Study of Mental Diseases Associated with Cerebral Arteriosclerosis.—Albert M. Barrett has analyzed clinically and anatomically a graup of sixteen of these cases. Of ten of these, concerning which information could be gained, seven had a hereditary history of insanity or shocks. These latter as a rule occurred in antecedents during their senile years. There wasm not one history of excessive alcoholism. The average age of fifteen cases was above sixty-eight years. The duration averaged three and one-half years. Eight out of fifteen cases gave a history of shock, and in all except one mental symptoms were noted before the shock. Six were aphasic. In five this was a simple paraphasic disturbance, while one had a total aphasia following hemorrhage. Out of twelve cases in which the condition of the superficial arteries was noted, signs of sclerosis were noted in eleven, six gave clinical evidence of heart lesion, and seven of nephritis. Knee-jerks were noted in twelve; eight times they were normal, twice unequal, and twice they were exaggerated. The pupils were normal in ten, sluggish in two; there were unequal reactions in one, in four they were of regular outline, and four were of unequal size. None of these cases were free from arteriosclerosis of the vessels of the internal organs. Twelve practically presented general arteriosclerosis. In thirteen the vessels of the circle of Willis or their branches were sclerotic. In eight cases this sclerosis was limited to the larger brain vessels, while in eight it involved the finer cortical vessels, or both. The average grain weight was diminished. Eight patients had some time during their disease an apoplectiform attack; five of these had cysts or areas of coarse lesion; in the other three there were very severe changes in the finer cortical arteries. There were cysts indicative of old brain lesions in four cases in which there was no history of shock or clinical evidence of focal lesion.—*American Journal of Insanity.*

Two Eye Diseases of Children of Interest to the General Practitioner.—H. C. Moffett refers in this paper especially to phlyctenular keratitis and phlyctenular conjunctivitis. These affections are the result of the same pathological process. Phlyctenular conjunctivitis begins as a small nodule in the conjunctiva, at or near the edge of the cornea. It is caused by an efflorescence of round cells which raise up the conjunctival epithelium and then break down to form small ulcers. There are generally two or more of these ulcers, and in certain cases the entire cornea is surrounded by them. A number of vascular triangles with apices at the efflorescence are formed by adjacent conjunctival vessels which run directly to the elevations. These triangles are very characteristic of the disease. When the nodules form on the cornea the disease is known as phlyctenular keratitis. The large number of these cases are seen among the poorer class of children. The subjective symptoms are contradictory and variable. There is usually much lacromation and photophobia. The prognosis in phlyctenular conjunctivitis is favorable. In phlyctenular keratitis the prognosis must be more guarded. Here there is a possibility of secondary infection. In the diagnosis of phlyctenular keratitis it must be decided whether or not there is a deep advancing infectious ulcer. A bright illumination will demonstrate the superficial character of the lesion. Treatment of these diseases is local and constitutional. Proper diet and hygienic measures must be enforced. The hypophosphites are valuable. In phlyctenular conjunctivitis, a two per cent. yellow oxide of mercury ointment should be rubbed into the lesions by manipulation of the upper lid. If there is a great deal of irritation, however, it is better to begin with an impalpable powder of calomel followed in a day or two by the yellow oxide. In phlyctenular keratitis the yellow oxide is valuable in the cases presenting vascularization. But when this is not present and there is great irritation, a one per cent. atropine solution is used for a few days and then followed by mercurial ointment. Smoked glasses are always a necessity. The writer in conclusion calls attention to the remarkable disparity between the pathological indications and subjective symptoms found in phlyctenular keratitis.—*Iowa Medical Journal.*

Death Following Scopolamine-Morphine Injection.—J. C. Sexton reports this case. The patient, 47 years old, had been in poor health for five years, especially on account of excessive bleeding from the uterus. A uterine fibroid was found to be present and operation was decided upon. In all respects the patient gave no evidence of disease of any organ aside from the uterus and ovary, although the effect of the severe hemorrhages on all the organs was apparent. The hemorrhage was distinctly menstrual. Aside from this trouble, the patient had never had a severe illness. On account of sleeplessness the patient was given ten grains of trional at 8:30 P. M. on the night before operation. Menstruation came on some time after midnight. At 7:30 A. M. she was given by hypodermic injection scopolamine hydrobromate 1-100 grain and morphine sulphate 1-6 grain. In fifteen minutes the patient was sound asleep. In thirty minutes she was completely unconscious, and slightly cyanosed; the pulse was 120 and throbbing, and the respiration 20, but very shallow. The abdominal muscles and the intercostals were so rigid that it was impossible to compress the lower chest and epigastrium. Although every effort was made to resuscitate the patient she died at 9:15 A. M. without the least response to stimulants, pain, heat, flagellations, or changing posture. The heart continued to beat for a while after the feeble respirations ceased. After death a fibroid uterus and left ovarian cystoma were found. Unusual pelvic engorgement was present. This report shows the effect even of a single small dose of scopolamine administered to a weak patient. It also shows the uncertainty of action of this drug. Although excellent results have attended its use great care should be exercised in the choice of a subject.—*Lancet-Clinic.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

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PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, January 27, 1906.

THE CODE OF ETHICS AGAIN.

THE Medical Society of the State of New York is, we understand, to be asked, at the Albany meeting next week, to vote upon the adoption of the code (now weakly called the "principles") of medical ethics—the exact wording of the resolution to be voted upon being: "The principles of medical ethics of the American Medical Association, being suggestive and advisory, shall be the guide of members in their relations to each other and to the public." Before this indefinite resolution, drawn up in faithful imitation of the wishy-washy style of the "principles of medical ethics" is put to a vote, it should be amended so as to mean one thing or the other. The members of this great Society, the parent of the American Medical Association, are to be asked to stultify themselves (we use the term in its legal sense) by resolving to adopt as a guide of conduct a set of turgidly phrased truisms which are expressly stated to have no binding force! If they are merely "suggestive and advisory," why waste time in voting on them? Either there should be a code of ethical laws binding upon the members of the Society, under pain of expulsion, or the medical practitioners of New York State should be left to worry along—as they have worried along very well for about a quarter of a century—with only the Golden Rule and the law of the land to guide them. The adoption of this uncertain resolution would leave them where they are to-day and would only convict them of a lamentable lack of humor that would be ludicrous were it not humiliating. More than twenty years ago the Members of the Medical Society of the State of New York came to a realizing sense of the fact that they were full-grown men and fairly honorable, and they cast aside the antiquated rules of conduct which were even then as dead as the blue laws of Connecticut. Now the self-constituted mentors of the American Medical Association ask them to recognize officially that the code of ethics is dead—being only "suggestive and advisory"—and nevertheless to adopt it as a guide "in their relations to each other and to the public"!

What is this code, or these principles, suggestively and advisorily to guide men still presumably in possession of their reason and their risibilities? "Physicians shall not only be ever ready to obey the calls of the sick and the injured, but shall be mindful of the high character of their mission and of the responsibilities they must incur in the discharge of momentous duties." "Every patient committed to the charge of a physician shall be treated with attention and humanity, and reasonable indulgence shall be granted to the caprices of the sick." "Ordinarily, the physician shall not be forward to make gloomy prognostications." "The physician shall be a minister of hope and comfort to the sick, since life may be lengthened or shortened not only by the acts but by the words or manner of the physician, whose solemn duty is to avoid all utterances and actions having a tendency to discourage and depress the patient." "The opportunity which a physician has of promoting and strengthening the good resolutions of patients suffering under the consequence of evil conduct ought never to be neglected." "Everyone on entering the profession, and thereby becoming entitled to full professional fellowship, incurs an obligation to uphold its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness." "There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical; and to attain such eminence is a duty every physician owes alike to the profession and to patients." "It is incumbent on physicians to be temperate in all things, for the practice of medicine requires the unremitting exercise of a clear and vigorous understanding, and in emergencies—for which no physician should be unprepared—a steady hand, an acute eye, and an unclouded mind are essential to the welfare and even to the life of a human being." "Physicians shall not, as a general rule, undertake the treatment of themselves nor of members of their family." "The broadest dictates of humanity shall be obeyed by physicians whenever and wherever their services are needed to meet the emergencies of disease or accident."

We have transcribed only a few of the gems of this unequaled collection of Tupperian platitudes, but there are more. Dr. Benedict, in the MEDICAL RECORD of December 9, 1905, and Dr. Sturgis, in the present issue, have exposed the inconsistencies and the hypocrisies of these principles, and the latter has also drawn special attention to their ludicrous phraseology. It is inconceivable that a body of practical men, hard-headed and endowed, we trust, with a saving sense of humor, will write themselves down — subscribers to these Sandford-and-Mertonish moral maxims. If the medical practitioners of New York State cannot be trusted to be decently honorable and charitable without rules of conduct to teach them the way, let us, petition the two gentlemen of Chicago who have solemnly signed this absurd document to give us, of their benignity, something virile and mandatory which we can accept, if we really must return to leading strings, without total loss of self-respect.

SEASICKNESS AS A CAUSE OF ACUTE PSYCHOSES.

MAL DE MER in its various aspects may well be regarded as a state of severe bodily and mental exhaustion, comparable in its effects with those disturbances which are brought about by protracted labors, by extensive hemorrhages, by severe prostrating diseases, etc., but it has rarely been associated with the production of a true phychosis. Con-

ditions of acute delirium are not at all uncommon in seasickness, but it is very doubtful whether these are as a rule true psychoses, and in most instances they can readily enough be traced to alcoholism or to inanition. But that acute insanity may arise, however, during an attack of seasickness is well shown in a case reported by M. Dobrschansky (*Centralblatt für Nervenheilkunde und Psychiatrie,* November 1, 1905). The patient was a woman with several children, who, although greatly debilitated and weakened both in body and mind, and subjected for a time to much worry and excitement, had undertaken to cross the ocean. During the trip, which was a very stormy one, she was seasick a great deal, and suddenly developed a typical acute hallucinatory insanity, which failed to subside when the voyage was completed. Several months elapsed, during which time she was under treatment in a hospital, before a restoration to the normal mental condition took place.

It is rather a difficult matter to explain the etiological connection between these two conditions; and whether the insanity was the consequence or merely an accompaniment of the seasickness, cannot be decided with the data in hand. The idea, largely prevalent, that the latter is probably due to an autointoxication dependent upon a retention of metabolic waste products in the body, brought about by a temporary functional insufficiency of the excretory organs, does not afford a sufficient explanation of the origin of the mental disturbances. One of the modern conceptions of amentia, however, ascribes this to a form of intoxication, which would suggest the possibility that there are certain underlying factors which constitute a common cause for both complaints.

It seems more reasonable, however, to approach the subject from a different standpoint. We often see strong and healthy individuals completely prostrated and depressed as the result of the exhaustion, the cerebral anemia, the repeated concussions to which the internal organs are subjected, and a number of other well-known symptoms which are attendant upon an attack of seasickness. A much more serious symptom-complex would necessarily be expected in a case in which a person is already debilitated and weakened by severe illness, worry, or excitement, when there is added to this the shock and depression resulting from an attack of seasickness. There is a good practical lesson to be drawn from the narrative of the case above mentioned. The conditions referred to would apparently constitute a reasonable contraindication against indiscriminate advice in every case with regard to the good effects to be obtained from a sea voyage. There are undoubtedly certain mental and physical states in which, instead of being a benefit, such a course of action would constitute a decided detriment, so that the depressing and exhausting influences of a possible attack of seasickness should always be borne in mind when an ocean voyage is prescribed as a therapeutic measure.

The "Philippine Journal of Science" is a new monthly journal which has been established under the auspices of the Bureau of Government Laboratories, Manila. The journal will treat of all branches of science, but especially of medicine.

THE QUESTION OF FOOD PRESERVATIVES.

Ice, sugar, salt, and hermetically sealed receptacles have long served as legitimate and practically harmless means for preserving articles of food and drink until desired for future consumption. To overcome the inconvenience or expense of their employment, other methods have gradually been adopted, among the most common of which is the addition of chemical substances possessing mild antiseptic properties. Not only preservatives, but a large variety of other materials of doubtful character are being added for the purpose of imparting extra color or flavor. The idea has been gaining ground that the introduction of these substances exerts a deleterious influence on the organism, especially if they are taken more or less continuously, and efforts have been made by various States to abolish or restrict their employment. This has now been supplemented by legislation enacted or about to be enacted by the National Government, preliminary to which Congress delegated the officials of the Department of Agriculture to institute an investigation of the subject. Among the first of the reports to appear was that on the use of boric acid and borax as preservatives and their effect on the system, which was based on observations made by Dr. H. W. Wiley and others. These were made on a number of volunteers who agreed to live for a certain period of time under prescribed rules and regulations and were given the drugs noted with their meals. The experiments were necessarily surrounded by difficulties and some of the results obtained were rather uncertain, yet Dr. Wiley felt convinced, as stated in his report, that the continued administration of the preservatives in question to these persons produced a slight diminution in body weight, interfered with nitrogenous metabolism, and caused an increased secretion of phosphoric acid. In addition, there were disturbances of the appetite, the digestion, and the general health.

The chemical rather than the medicinal aspects of the question form the basis of the research and some of the evidence is marked by contradiction, but there are many elements of truth, and criticism can be directed only to the insufficient number of cases studied and the short period during which the latter were observed, rather than to any defects in the methods employed.

It is quite natural that a great deal of opposition should be manifested by the commercial interests affected by the provisions of a pure food bill, which should come before Congress and in which the manufacture, importation, or sale of food articles containing deleterious preservatives, coloring matters, etc., was absolutely forbidden. A law of this kind would mean a restriction of business and profits to which those affected would not submit without a struggle, and the opposition has extended to many countries outside of the United States. The attack has not been limited to the commercial aspects of the case, but the investigations of the department, as published in Dr. Wiley's report, are questioned by no less an authority than Prof. O. Liebreich of Berlin, the noted pharmacologist, in a pamphlet recently printed in Berlin. Nominally this is an effort to deny Wiley's claims, but practically it will be considered by those most interested as a defense of a system of food preserva-

tion by boric acid and similar substances. The criticism to which the Berlin professor subjects the report is marked by a spirit of ridicule and animosity, and to party politics is assigned the motive for the entire investigation. The disturbances to the general health which were noted are calmly attributed by Liebreich to faulty hygienic surroundings, to improper administration of the preservatives, and in some of the cases to idiosyncrasy. Granted that some of Dr. Wiley's conclusions have been hastily drawn and are based on insufficient evidence, most of us will agree with the main contention that the use of such preservatives must in the end be harmful to the organism, and even if this cannot be proved by laboratory tests, there remains a certain amount of clinical evidence which is more difficult to contradict. It is to be hoped that the publications of articles such as that alluded to will not stay the progress of the movement and that the production and sale of food supplies will be surrounded by restrictions sufficiently rigid to guarantee to the purchaser their purity and freedom from possible harmful results. Certainly if anything is added to any food preparation, whether it be coloring matter or preservative, the purchaser should know it, and then it would rest with him to buy it or leave it alone.

THE ENDONEURAL INJECTION OF TETANUS ANTITOXIN.

The prognosis attending the employment of antitoxic serum in tetanus seems to depend on two conditions—the time at which the serum has been administered and the mode of its application. The prediction made by von Behring that a reduction in the mortality of from 15 to 20 per cent. would result from injections of antitoxin, if this were done immediately on the first appearance of tetanic symptoms, has, unfortunately, not been fulfilled, and, in fact, it is in precisely these early cases that poor results have been obtained. The antitetanic serum has been employed in a variety of ways, by subcutaneous, intravenous, subdural, and intracerebral injection, without any agreement having been reached as to which of these was the preferable one. In addition to the foregoing, Meyer and Ransom, in 1903, suggested that the injections be made directly into the substance of the nerves, but this proposal met with little response, and we find reports of only a comparatively small number of cases in which this method was adopted. The majority of these were observed by John Rogers (Medical Record, July 2, 1904, and *Journal of the American Medical Association,* July 1, 1905), who reports five recoveries in a series of eight cases in which endoneural were used in combination with subdural and intravenous injections. Two of the patients who succumbed to the disease presented very extensive injuries of the soft parts, and offered a most unfavorable prognosis for any form of treatment. The percentage of recoveries must therefore be looked upon as very favorable.

Another successful case, treated in the same manner, has more lately been reported by P. Clairmont (*Wiener medizinische Wochenschrift,* December 7, 1905). In this patient, a little boy, tetanus developed from a severe compound fracture of the forearm. The conditions were rendered particularly bad by the presence of a malignant edema and an additional infection by a bacillus of the colon group. The period of incubation of the tetanus was six days, and the only way in which it was believed the original focus could be eradicated was by amputation of the arm. Some 200 units of tetanus antitoxin were injected subcutaneously with the idea of combating whatever toxin was still uncombined in the blood, and 100 units were introduced directly into the amputation stump without any difficulty at the time of operation. The effects of the antitoxin were developed slowly, but the boy finally made an excellent recovery. This good result in a very unfavorable case can fairly be attributed, it seems, to a combination of the local and the systemic treatment, and taken in connection with the observations made by Rogers, furnishes a sufficient plea for a further trial of the method, which does not appear to be attended by any special danger or difficulty in execution. When an amputation is rendered necessary the conditions are simplified, as no further exposure of nerves is required. The distribution of the tetanus toxin through the system makes it obligatory to combat its effects in all their manifestations by every means at hand, and the suggestions here referred to simply open up, as it were, an additional avenue for treatment.

The Treatment of Soft Chancre.

The application of heat locally to chancroidal ulcerations is the essential point in a method advocated by E. Welander (*Wiener klinischtherapeutische Wochenschrift,* November 19, 1905). It has already been claimed by others that a temperature of 40° C. will destroy the virus of this contagion, and Welander observed in addition that in individuals who may be afflicted with chancroids, the onset of any acute febrile disease with a constant temperature of 39° to 40° C., lasting for several days, apparently brought about a rapid improvement in these lesions. This seemed to be independent of the nature of the illness, and is attributed by the writer solely to the high temperature. He also subjected this observation to experimental test by attempts at inoculating with the secretion from chancroids, patients who happened to be afflicted at the time with an angina or other acute febrile disturbance. The results were always negative, whereas the control experiments in individuals with normal temperature were invariably positive. Welander therefore proposes the application to the ulcer of heat obtained from water circulating in a coil of small leaden pipes, and describes a special form of apparatus for this purpose. He has employed this method for a number of years, with uniformly good results. In from one to two days the ulcers are clean and granulating, and then irrigations with hot boric acid solution and the application of dusting powders bring about a rapid healing of the raw surfaces. The only disadvantage in the method must be referred to the complicated apparatus necessary, which can be employed only in hospitals or specially furnished apartments. A modified, but much less effective substitute is also proposed. The patient is directed to immerse the affected area in hot water of a temperature of 50° C. for periods of from 15 to 20 minutes, several times daily. The writer also used the method with good result in other forms of ulceration and likewise in trichophytosis.

The Value of a Therapeutic Card-Index in Practice.

Many physicians whose time for reading and study is very limited have found a therapeutic card-index to be the most useful aid imaginable to their daily work. All that is needed for such an index are some blank catalogue cards, such as are sold by the stationers, and a box or drawer to file them in. A few blank cards are kept on the desk, and when the physician comes across a useful therapeutic hint, a practical prescription, or a surgical suggestion which can be used in his work, he simply writes the information on the card and files the latter under the heading of the disease or condition with which it deals. The keeping of such an index engenders the habit of looking for what is useful and practical in the mass of reading that comes to one from various sources. Any given number of the Medical Record alone furnishes material for a large number of such cards, and each reader can cull what is most useful in his own work and what appeals to him as the most practical and best adapted for his purpose. Instant reference to the cards and great satisfaction in finding what he wants at once is the reward for the time thus spent, and as time goes on, the index gains in value as a ready reference guide in perplexing therapeutic emergencies.

News of the Week.

The Gibbs Memorial Prize of the New York Academy of Medicine.—Regarding this prize, the trustees of the New York Academy of Medicine publish the following correction of their previous announcement: (1) The prize amounts to two thousand dollars, this time; (2) The prize essays may be handed in October 1 (not January 1) 1907, or before that date. (3) The prize committee does not expect the "etiology, pathology, and treatment" of the diseases of the kidneys to be discussed with equal completeness, but will be satisfied with the thorough scientific consideration of part of the problem, provided an essay offered in competition contains new facts or discoveries or points of view of sufficient merit.

The Indiana Board of Medical Registration and Examination has elected the following officers for the coming year: *President*, Dr. J. C. Webster of Lafayette; *Vice-President*, Dr. M. S. Canfield of Frankfort; *Secretary*, Dr. W. F. Colt of Crawfordsville; *Treasurer*, Dr. Jas. M. Dinnen of Ft. Wayne.

Michigan Medical Registration Board.—In his annual report for 1905 Dr. Beverly D. Harison, secretary of the State Board of Medical Registration, announces that the office of the board will be removed from Sault Ste. Marie to Detroit. The change will be in the interest of economy for all concerned, as two-thirds of the applicants who appear before the board are in attendance at Detroit medical colleges or the University of Michigan. During the year the board issued certificates of registration to 240 persons, 120 being graduates of Michigan colleges, seventy-four being registered on examination, and forty-six receiving reciprocal certificates. The number of certificates issued in 1903 was 422 and in 1904 278.

Appointments at Bellevue Hospital.—The Board of Trustees of Bellevue and Allied Hospitals have accepted the resignation of Dr. Willam F. Fluhrer, who has been one of the visiting surgeons since 1882, and of Dr. Charles Phelps, who has been a visiting surgeon since 1878, and each of them has been appointed a consulting surgeon to Bellevue Hospital. Dr. L. W. Hotchkiss, who has been assistant visting surgeon for twelve years, and Dr. Thomas A. Smith, who has been assistant visiting surgeon for six years, have been promoted to visiting surgeons. Dr. James C. Ayer has been promoted assistant visiting surgeon in place of Dr. Hotchkiss, promoted, and Dr. Arthur S. Vosburgh has been appointed adjunct assistant visiting surgeon in place of Dr. Ayer.

More Model Tenements.—Another of the series of model tenements planned by several practical philanthropists of this city has been opened in East Seventy-eighth street, between Avenues A and B. The building embodies numerous improvements over the others built so far, yet the rents are only from $2.20 to $4.60 a week for two, three, or four rooms. There are no dark rooms, the building is heated by steam throughout, and gas stoves are provided for cooking

Pure Food Petitions.—Two petitions, signed by many of the best-known physicians of New York and Boston, have been forwarded to Washington in behalf of the passage of the pending bill prohibiting the adulteration of foods and drugs. The petitions urge the senators and representatives of the respective States to use their influence in aiding the passage of the bill and indicate its importance as a public health measure.

Mt. Sinai Hospital.—Gifts amounting to $135,000 were announced at the annual meeting of the Board of Directors of Mt. Sinai Hospital, held on January 14. In spite of the very extensive facilities offered by the new building it was stated that the hospital was pressed for room, and the erection of several additional wards was discussed. The figures made public showed that the general expenses of the hospital had been $296,000 and that the per capita cost had been reduced, despite the increase in the number of patients, from $2.51 to $2.18. Last year's report showed an average of 230 patients a day in the hospital, while there were at present said to be 404 in the hospital and 460 in the out-patient department. Of the total number of patients received during the year, 76 per cent. were gratuitously treated.

Ambulance Accident.—An ambulance from the Lincoln Hospital in which an eighty-year-old insane patient was being taken to the Harlem Hospital collided with an express wagon on the Willis avenue bridge on January 17. The collision threw Dr. Becker, the ambulance surgeon, and a policeman, both of whom were on the rear, to the flooring of the bridge, but they were not seriously injured. The ambulance horse became frightened and ran away, but was stopped before any further damage was done.

Epileptic Colony for Virginia.—The members of the general board of directors of the Virginia State Hospitals, at a meeting held at the Central State Hospital near Petersburg on January 11, adopted a resolution urging the Legislature to make provision for the establishment of a hospital for epileptics. The board appointed a committee to present the matter to the legislature and to prepare a bill for the establishment and organization of the proposed colony. At the same meeting Dr. W. F. Drewry, superintendent of the Central State Hospital was unanimously elected superintendent of the Western State Hospital at Staunton to succeed the late Dr. Blackford.

Sleeping Sickness.—An expedition to investigate this subject is to be sent to Africa by the German Government, which will appropriate 120,000 marks for the purpose. The leaders of the expedition are to be an investigator who is already well acquainted with protozoan parasites and their means

of transmission, a physician who has had experience on the East African coast, and a bacteriologist trained in matters relating to epidemiology. As no region under German control would furnish suitable opportunities for observation, it is proposed to send the expedition to the British possession of Uganda. The investigation would presumably require a stay of eighteen months. It is not yet known whether or not Dr. Robert Koch, who a short time ago returned from a journey along the African coast, will head the expedition.

The Yellow Fever Epidemic in New Orleans.—Reports compiled from official sources show that during the yellow fever epidemic of 1905 in New Orleans there were 10,804 known cases, of which 1,151 proved fatal. The average death rate, therefore, as shown by the records, was 10.46 per cent.

Death from a Synthetic Hypnotic.—That the dangers ascribed to the use of the modern synthetic remedies are not exagerated is shown by a recent death reported in the public press. The victim was a young school teacher who for insomnia took several tablets of one of the newer remedies usually affirmed to be particularly safe. It is not stated how many of these he consumed, but three hours after taking the first he was found in a stupor from which he could not be roused, and which ended fatally. The brother of the victim makes the remarkable statement, in a letter to the *New York Times*, that the physician who prescribed the drug had never heard of it, and ordered it at the request of the patient, knowing nothing of its therapeutic action, nor even the proper dose.

A Tuberculosis Exhibition is to be held in Springfield, Mass., during February under the auspices of the local anti-tuberculosis association. Preparations are also being made for a similar exhibition in Lowell.

Center District (N. H.) Medical Society.—At the eighty-fourth annual meeting of this society, held in Concord on January 9, the following officers were elected. *President*, Dr. T. M. Togus, Hooksett; *Vice-President*, Dr. G. P. Conn, Concord; *Secretary and Treasurer*, Dr. L. A. Sanders, Concord.

Eighth Councillor District (Ohio) Medical Society.—At the annual meeting of this society, held in Marietta on January 9, the following were elected as officers for the ensuing year: *President*, Dr. S. A. Cunningham of Marietta; *Secretary* and *Treasurer*, Dr. C. H. Higgans of Zanesville.

The New Bellevue Hospital.—After many weeks Judge Truax has dissolved the injunction of an unsuccessful competitor for the contract to build pavilions A and B of the new Bellevue. In a few days the two brick buildings on the southeastern part of the grounds will be demolished, and work on the new building will commence.

Annual Report of St. Anthony's Hospital.—The annual report of this Chicago hospital shows that 1,238 patients were treated in 1905, while 2,280 night watches were recorded

The Children's Memorial Hospital of Chicago will receive $25,000, realized from the Cribside Kirmess recently held.

The Children's Hospital Society of Chicago.—Dr. Frank Billings was reelected president of this society, at the annual meeting held recently, and Dr. Frank S. Churchill, secretary. In his address Dr. Billings announced that since the organization of the society, beds in children's wards in various hospitals in Chicago had increased from 290 to 450. It was proposed to establish tent sanatoria in all the small parks for the children of working mothers, where especially prepared milk might be obtained. Steps have been taken by the society to arouse public interest in the proposed Children's Hospital for Infectious Diseases.

Physicians as Dispensers of Liquor.—According to the Washington (D. C.) *Post*, Commissioner of Internal Revenue Yerkes has stated that druggists may use alcoholic liquors in compounding physicians' prescriptions and in making tinctures for sale in good faith for medicinal use only, without subjecting themselves to special tax as liquor dealers, but he decides that a physician cannot prescribe whiskey for a patient when not compounded with medicine, without involving himself in special tax liability, even though he prescribes it for use as medicine only.

New York Surgical Society.—At the annual meeting of this society, held November 8, 1905, the following officers were elected: *President*, Dr. George Woolsey; *Vice-President*, Dr. Joseph A. Blake; *Secretary* and *Treasurer*, Dr. John A. Hartwell.

Bequests to Philadelphia Hospitals.—By the will of Miss Marie Elizabeth Brasier the sum of $5,000 is bequeathed to St. Joseph's Hospital of Philadelphia for a free bed in the men's ward in memory of Charles A. Brasier. An additional sum of $5,000 is bequeathed to St. Joseph's Hospital for a free bed in the women's ward in memory of Mrs. Elizabeth P. Brasier. The sum of $10,000 is bequeathed to St. Vincent's Home and Maternity Hospital. A lot of ground containing four dwellings is also left to St. Joseph's Hospital.

Physician Obtains Verdict.—At a recent suit in a Salt Lake City court a physician who sought to recover $500 for his services as expert neurologist and oculist in a case against the Utah and Eastern Copper Company, was awarded $200 by the jury, although the defendants contested that $50 would be a proper fee.

Medical College for Lexington, Ky.—President James K. Patterson, of the Kentucky State College has asked the general council of Lexington, for an appropriation of $12,000 to establish a medical colege in connection with the institution.

United States Leprosy Station.—Dr. W. R, Brinckerhoff of Boston has been appointed pathologist to the Government Hospital, to be established on the Island of Molokai, of the Hawaiial. group.

New Secretary of the Ohio State Medical Board.—Dr. David N. Kinsman, the new Secretary of the Ohio State Board of Medical Registration and Examination, assumed charge of the office January 1. *vice* Dr. Frank Winders, resigned.

The State Board of Medical Examiners of California recently revoked the licenses of three practitioners, all of whom had been convicted in the U. S. district court of sending matter through the mails regarding criminal malpractice.

Los Angeles is planning to obtain its future water supply from the Kern river, nearly two hundred miles away, at a cost of more than thirty-six millions of dollars.

The "Journal of Medicine and Science," published at Portland, Me., under the editorship of Dr. Frank W. Searle, appeared for the last time in December, 1905. It was founded in 1891 by Dr. E. E. Holt.

For Cleaner Street Cars.—The dirty condition of the street cars of the Brook'yn Rapid Transit Company has given rise to many complaints, and the Borough President will appoint a committee of one hundred for the purpose of compelling the company to keep the cars clean and warm and also to improve the service in other ways.

Yellow Fever at Havana.—In spite of the asseverations to the contrary made by the authorities it is evident that yellow fever is not yet extinct at Havana. Two deaths from the disease have occurred recently, and several suspicious cases are said to be under observation.

A Race Suicide Investigation.—A member of the Massachusetts legislature has presented a resolution providing for the appointment of a committee to consider the matter of race suicide. The resolution states that the object of the commission shall be to consider what steps can be taken to counteract the tendency known as race suicide, and especially to prevent discrimination by landlords against tenants with children. The commission is also to determine what, if any, legislation in the premises is expedient or possible, and what means, if any, might properly be taken to arouse public opinion in respect to these evils.

The Health Department's New Transfer Boat, built at a cost of $75,000, was launched at the ship yards in Port Richmond, S. I., on January 18, in the presence of Health Commissioner Darlington and other city officials. The *Riverside* will transfer patients suffering with contagious diseases from all parts of the city to North Brother Island. She is 130 feet over all, and has twin screws. The lower deck is to be used as a hospital and will have eight separate rooms for patients, allowing contagious diseases to be completely isolated. On the upper deck are quarters for the crew and cabins for visitors to patients on the island.

Austrian Physicians Strike.—The physicians of the rural districts in Austria, in disgust at the niggardly scale of fees paid by the government for official services, have declared that unless the whole schedule of payment for public medical attendance is increased they will cease to serve in this capacity. It is stated that they receive only four cents a person for vaccinating the poor, whereas veterinary surgeons receive sixteen cents for inoculating each head of cattle, and qualified doctors for examining tramps and vagrants are paid less than barbers who cut the hair of the same individuals.

Michigan State Medical Society.—At a meeting of the council of this society, held in Detroit on January 12, 1906, Dr. A. P. Biddle resigned and Dr. B. R. Schenck was elected State Secretary and editor of the journal.

Obituary Notes.—Dr. Swan M. Burnett of Washington, D. C., died suddenly of heart disease on January 18. Dr. Burnett was born at Newmarket, Tenn., on March 16, 1847. He began the study of medicine under his father's tutelage and in 1866 entered the Miami Medical College of Cincinnati. In January, 1869, he was given charge of a military hospital at Nashville, Tenn. In the autumn of the same year he entered the Bellevue Hospital Medical College of New York and was graduated with the class of 1870. In 1873 he married Frances E. Hodgson, the authoress. After spending some time in Europe in special study he settled in Washington in 1876 and began to devote himself exclusively to ophthalmology, founding the Eye and Ear Clinic at the Central Dispensary in 1878. He established a post-graduate school of ophthalmology in 1881 and had made many important contributions to the literature of his specialty.

Dr. W. A. Payne of San Antonio died suddenly on January 10 of heart failure. He was soon to have gone to the Canal Zone in an official capacity.

Dr. F. P. Perry of Bucksport, Me., died on January 14 at the age of fifty-five years. He was graduated from Bowdoin College in the class of 1871 and received his medical diploma from the Long Island Hospital Medical College in 1873.

Dr. A. H. Cook of Chicago died on Monday, January 8. Dr. Cook was born in Mount Pleasant, Canada, in 1824, and was one of the oldest physicians of Chicago. He was on the staff of the St. Joseph's Hospital for a number of years and assisted in combating several epidemics which occurred in Chicago in the early period of its history. His son, Dr. John M. Cook, succeeded to his father's practice on the latter's retirement four years ago.

Dr. Charles Nelson Miller died at his home in German Valley, N. J., on January 14 of nephritis, aged forty-three years. Dr. Miller was a graduate of the Bellevue Hospital Medical College in the class of 1883, and an active member of the Morris District (N. J.) Medical Society and the Tri-County (N. J.) Medical Society.

Dr. William B. Neftel of this city died on January 20. He was born in Riga in 1830 and received his medical education in St. Petersburg. Dr. Neftel, in the Crimean campaign, was surgeon in the Russian army. In 1865 he came to the United States.

Dr. William Hillhouse of New Haven died on January 21 at the age of eighty-six years. He was graduated from the New York University Medical School in 1845. Dr. Hillhouse was the oldest living holder of a Yale honorary degree, it having been conferred in 1849 because of gifts to the university and in recognition of his high mathematical ability. He was the inventor of the old-fashioned trapdoor gallows used for years in Connecticut.

Dr. Abbie Cutler Tyler of Washington, D. C., died on January 6, at Warren, Mass., at the age of eighty years. Dr. Tyler was graduated in 1873 from the New England Woman's Medical College in Boston, and began her professional life in Waukegan, Ill. She went to Washington about twenty-five years ago and had since then practised there continuously.

Dr. W. B. Stoner, of Sunbury, Pa., died at Clifton Springs, N. Y., on January 9. He was graduated from the Kentucky School of Medicine in the class of 1892.

Dr. Hiram N. Rucker, Superintendent of the Masonic Home at Decoto, Alameda County, Cal., met with a terrible death on the night of December 13. During the evening, he had attended a meeting of the board of directors of the home, at San Francisco, and took the late train for Decoto. A short time after the train had passed the station, his mangled body was found upon the track beyond the stopping place. He had doubtless overlooked the stop and attemped to alight after the train was in motion. Dr. Rucker was sixty-one years old, a native of Missouri, and leaves a wife and daughter.

Dr. Richard L. Kendall, a prominent homeopathist of Aurora, Ill., died at San Diego, Cal., January 1, a few days after his arrival, in search of health.

Dr. Robert W. Steger of New York City died suddenly on January 10 at the age of forty-eight years. Dr. Steger was a native of Alabama and was graduated from the College of Physicians and Surgeons of New York in 1878. In a letter found after his death he directed that his body be given to that institution for dissection.

Dr. Selwyn A. Russell of Poughkeepsie, N. Y., died on January 11 after a short illness. Dr. Russell was a graduate of the Albany Medical College' class of 1877, and was for two years resident physician there. At different periods he had served on the medical staffs of the Utica and Poughkeepsie hospitals.

Correspondence.

PROTEST AGAINST ACCEPTING THE "PRINCIPLES OF MEDICAL ETHICS" OF THE AMERICAN MEDICAL ASSOCIATION BY THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

To the Editor of the Medical Record:

Sir:—On the first of October, 1905, a circular was issued to all members in good standing of the Medical Society of the State of New York and the New York State Medical Association, which contained the following: "Section 7. It is further covenanted and agreed by the parties hereto that as soon as practicable after the entry of an order for the consolidation of the corporations the following proposition shall be submitted by referendum to the vote of the members of the Society, namely:—'That the Principles of Medical Ethics of the American Medical Association, being suggestive and advisory, shall be the guide for members in their relations to each other and to the public.'"

The final consolidation of these two societies was perfected on December 9, 1905, and it is fair to presume that at the coming meeting of the Medical Society of the State of New York the matter will be submitted to the vote of the Society; and I take this opportunity to present to my fellow members of the Medical Society of the State of New York my reasons why this Medical Society should decline to be guided by or to accept the so-called "Principles of Ethics" of the American Medical Association. My reasons are as follows:

First: *Because these Principles are trivial and childish.* It seems hardly necessary that physicians should be instructed to be ever ready to obey the call of the sick and injured, or to be mindful of the character of their mission and the responsibilities they must incur in the discharge of momentous duties; or that they should be bidden never to forget that the comfort, the health, and the lives of those entrusted to their care depend on skill, attention, and fidelity. It seems absurd that they should be lectured upon their deportment, or that they should be told to unite tenderness, cheerfulness, and firmness, and thus inspire all sufferers with gratitude, respect, and confidence.

It would go without saying that patients committed to the care of a physician should be treated with attention and humanity and that reasonable indulgence should be granted to the caprices of the sick, or that the physician should strictly observe secrecy and delicacy; for medical men who require to be thus tutored in the first duties of their profession are unfitted to assume the responsibilities of their calling. Especially is the obligation of secrecy imposed upon physicians, for it is stated to be so great that they have been protected in its observance by courts of justice. As a matter of fact, this protection is not one extended to physicians, but to the patients, and on this point I shall have something to say later on.

When the Principles come to treat of the duties for the support of professional character, the medical profession is apprised of the obligation under which County Medical Societies are placed by affiliating themselves with their respective State Associations, and these in turn with the American Medical Association; and the profession furthermore is adjured that there is no profession from the members of which greater purity and a higher standard of moral excellence is required than the medical; and to attain such eminence is the duty every physician owes to the profession and to patients. It is due to the patients, as without it their respect and confidence cannot be commanded; and to the profession, because no scientific attainments can compensate for the want of correct moral principles.

Without stopping to argue as to the correctness of this statement, I should like to ask if such inane drivel is really required to instruct physicians as to their duties to each other in support of professional character. It seems to me to be among those things that physicians are grounded in before they are allowed to qualify for practice, and that it should be as unnecessary to inculcate these principles in a code of ethics as it would be to instruct physicians that they should not steal, that they should not commit adultery, and that they should not bear false witness against their neighbor.

There are scattered throughout this little pamphlet other absurdities which might be criticised, but I think I have shown enough evidence to prove my contention that these principles are trivial and childish, and I shall therefore pass to the next objection: that *these Principles are negative in character;* and I shall ask your attention to the Second Chapter, Article I, Section 7, which reads that "it is incompatible with honorable standing in the profession to resort to public advertisement or private cards inviting the attention of patients affected with particular diseases; to promise radical cures; to publish cases or operations in the daily prints, or to suffer such publications to be made; to invite laymen (other than relatives who may desire to be at hand) to be present at operations; to boast of cures and remedies; to adduce certificates of skill and success; or to employ any of the other methods of charlatans."

It is a time-honored belief in the medical profession that the code forbids physicians to advertise, but it will be seen on reading the above section that such is not the case. Physicians are instructed that it is incompatible with honorable standing to publicly advertise, *only when their advertisements invite the attention of persons affected with particular diseases;* in other words, it would be perfectly proper for a physician to insert a card in the public prints giving his name, his address, and his consultation hours. As regards the private cards, I have seen the cards of presumably reputable physicians which stated that they confined themselves to the treatment of particular diseases—to wit., diseases of the eye and ear, or diseases of the throat—and I frankly confess that I fail to see why they are incompatible with honorable standing, for certainly it is oftentimes of great service to know that a man devotes himself more particularly to, or claims to have a special knowledge of, a certain class of diseases. But while, after all, this is entirely a matter of taste, I admit that to promise radical cures, to boast of cures, or to adduce certificates of skill are all in bad form and much better avoided, as are also the business methods which are sometimes employed by physicians in paying or offering to pay commissions to persons who may recommend to them patients requiring general or special treatment, or surgical operations, or to solicit or to receive such commissions—and yet we all know of cases in which it has been done.

In the first and second sections of the third chapter, physicians are instructed that they should be ready to cooperate with the proper authorities in the administration and the observance of sanitary laws and regulations, and that it is the province of physicians to enlighten the public in regard to quarantine regulations; to the location, arrangement, and dietetics of hospitals, asylums, schools, prisons, and special institutions, in regard to measures for the prevention of epidemic diseases, etc.—but nothing is said or suggested as to how this instruction and cooperation should be carried out or to whom this duty should be delegated. It certainly is not for the honor and dignity or the interests of the profession to have new methods of treating diseases exploited in the public prints, as has been done within recent times, where the opinions advanced have been crude and ridiculous, and where the premises upon which these newspaper statements were based have been entirely insufficient; but I fail to understand why instruction given by competent authority should be frowned upon, even if the information is conveyed in the public prints.

The third objection I have is: that *these Principles are impertinent and intrusive;* and in support of this contention I invite attention to the fourth and eighth sections of the first chapter, the former of which reads that "frequent visits to the sick are often requisite, since they enable physicians to arrive at a more perfect knowledge of the disease and to meet promptly every change which may occur. Unnecessary visits are to be avoided, as they give undue anxiety to the patient," and the latter, that "the opportunity which a physician has of promoting and strengthening good resolutions of patients suffering under the consequences of evil conduct ought never to be neglected."

Visiting the sick, I maintain, should be left entirely to the discretion of the physician, and it is nobody's business to instruct him whether he should call frequently or infrequently, nor to invite his attention to the avoidance of unnecessary visits. This admonition seems to me an impertinence which does not come within the province of any code of ethics to advise about; and as to the physician's assuming the rôle of preacher and promoting and strengthening the good resolution of patients, I believe, from some experiences I have had—not only personal, but impersonal—that such admonition is usually resented by the patients as impudence. At any rate, it seems to me that all this ethical twaddle is better suited to the nursery or Sunday-school than to a code of ethics for grown-up men who presumably have some sense of decency and some knowledge of the proprieties of daily life and conduct.

Then again, in Chapter II, Article 1, Section 2, the physician is adjured, among other things, "to honor the fraternity as a body . . . and that he should entertain a due respect for those seniors who by their labors have contributed to its advancement." Now the fraternity as a body will be honored if honor is due it, and no instruction to honor it as a body will receive the slightest attention

if medical men themselves do not behave in such a manner as to command respect; nor should due respect be paid to those seniors who, notwithstanding their labors, show by their private life that they are not entitled to respect. On those matters each man will judge for himself, and he will wear the crown who most deserves it, irrespective of these paternal warnings which the American Medical Association seems to think necessary to inculcate in the minds of medical professional men.

Now, in the eighth section of this same article, after other advice which I think may be open to fair criticism, we find: "It is equally derogatory to the professional character for physicians to hold patents for any surgical instrument or medicine, and to accept rebates on prescriptions or surgical appliances, to assist unqualified persons to evade the legal restrictions governing the practice of medicine, or to dispense or permit the use of secret medicines: . . . it is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines or other substances used therapeutically."

As regards the first section, I cannot for the life of me see why a physician or surgeon should not be entitled to reap pecuniary benefit from a surgical invention of his own. In every other walk of life it is recognized that a man is entitled to such benefit, and I can see no good reason why the doctor should not also be granted a similar privilege. As it is, all the advantage goes to the instrument-maker, a man who, goodness knows, charges sufficiently for whatever work he does for both surgeon and patient. The surgeon devises the instrument and the instrument-maker reaps the pecuniary advantage, and the unfortunate surgeon gets nothing. It would be just as sensible to deny a man's right of holding a copyright on his book as to say that he shall not hold a patent on his own invention. It seems to me one of those instances of an impertinent interference with the rights of another. To hold a patent for a medicine is a different thing, for there is no invention nor anything which is peculiarly a part of the man himself. Of course it is improper to assist unqualified persons to evade the legal restrictions governing the practice of medicine, and yet I was somewhat amused at a recent meeting of the society which is a strenuous upholder of the code in this city to hear the name of a medical man suggested for membership who, it was admitted, had not complied with the laws of the State relating to the registration of physicians and that this infraction was known to the committee which reported his name. There was a slight demur as to passing the man and many members of the society were in favor of admitting him because—if I remember rightly—he was a good fellow; but I am happy to say, for the sake of consistence with the code of ethics, one member so strongly objected to the candidate's admission that the name was referred to the committee again with instructions to call the attention of the candidate to his delinquency. I only instance this to show how very lightly any of these obligations sit upon the average medical man when he wants something done that he has set his heart upon.

In Article 2 of that same chapter, in the second section, is a clause which reads that "all practising physicians and their immediate family dependents are entitled to the gratuitous services of any one or more of the physicians residing near." I think that a matter which could with propriety be left in the hands of the attending surgeon or physician himself, but I should like to ask if medical men would consider that the homeopath, the eclectic, the osteopath, and all of that tribe, are also entitled to gratuitous services, and whether the average medical man would feel disposed to extend such professional courtesy to them; for, mark you, it reads "all practising physicians," not "all legally qualified physicians." More than that, some doctors are able to pay and do not wish to be placed under an obligation, and I do not think that the attending physician has any business to impose such obligation if it is not desired; and, moreover, I would like to ask if any one has the right to take up the time or to call upon the skill of a physician for a private disease of any kind merely because he chances to be a doctor. This section seems to me therefore not only an impertinent interference with personal action, but anabsurdity on the face of it

I might go on and multiply instances, but if I did this letter would be spun out to interminable length, and I shall therefore close with my fourth objection, to wit: *That these Principles of Medical Ethics are deceitful and hypocritical.* They start off in the very preface with the statement that large discretionary powers are left to the respective state societies to form such codes and establish such rules for the professional conduct of their members as they may consider proper, which upon its face would seem to leave entire freedom to these different societies to formulate their own codes and rules; but mark well what follows: "Provided, of course, that there shall be no infringement of the established principles of this Association." In other words, while it seems to leave a free hand to the societies to establish their own rules, these rules must be in conformity to these principles, which is tantamount to enforcing them. Would it not have been more honest to have stated that these different state societies *must* adopt the ethical principles of this Association?

In addition, in the first chapter,—almost throughout the whole of it—the various sections which treat of the conduct of physicians to their patients bear the mark of cant to such a degree that it is difficult to read it without a feeling of profound contempt, and I should have supposed that Messrs. Mawworm and Chadband had between them concocted these rules, so replete are they with the unctuous cant and hypocrisy which characterized those two apostles of humbug.

In Article Third of this same chapter, in the second section, we read that "consultations should be promoted in difficult cases, as they contribute to confidence and enlarged views of practice." Now that is rank nonsense and deceit. Consultations certainly of the present day, so far as I have been able to observe, oftentimes do not contribute confidence nor do they enlarge views of practice, and many consultations are called for, not because the attending physician wants more light or instruction upon the case, but because the patient's family or friends have heard of the celebrated Dr. X. and feel that their friend cannot get well without his advice and cooperation, and therefore they insist that X. shall be called. Another objection to consultations which I have heard from juniors in the profession, is that after a consultation they see no more of the patient, and the feeling is by no means uncommon—I do not pretend to say whether it is right or wrong—among the younger practitioners of medicine that the senior is not above taking an unfair advantage and either retaining the patient himself or sending him to some one of his assistants, entirely regardless of the rights of the attending physician.

In Section Five of that same article the physician is adjured that "in consultations no insincerity, rivalry, or envy should be indulged; candor, probity, and all due respect should be observed toward the physician in charge of the case." "So mote it be;" but envy, hatred, malice, and all uncharitableness will be unknown things in this world only when the millennium occurs. We believe that the most sublime goodness should dictate our conduct to each other, but we also know it does not; hence it is probable that these Principles of Ethics, like the teachings of the Sermon on the Mount, will remain "only an iridescent dream."

In the earlier part of this letter I adverted to the obligation of secrecy imposed upon physicians, in which the code of ethics declares physicians have been protected in its observance by courts of justice. In this particular the Principles of Medical Ethics talks either without knowledge of facts or else with willful intent to deceive, for this is no protection designed for the doctor but for the patient, and courts of law have not protected physicians in the observance of secrecy but have *imposed* secrecy upon them, oftentimes to their detriment, for the *protection of the patient;* so that as this clause stands, I repeat, it shows either gross ignorance or something very like deliberate deception.

While I have by no means exhausted the many points which could be criticised in the Principles of Medical Ethics, I must forbear, but not before I have said a word in parting. Those of us who can "hark" back to twenty odd years ago when the so-called code fight took place in the State Society, will remember that the main grievance against the code was that it was "an impertinent interference with the rights of others." The Medical Society of the State of New York deemed itself amply able to look after the manners and morals of its medical practitioners and it required no interference and no kindergarten instruction from the American Medical Association. After the old code had been practically abolished in this State, a delegate was sent from the State Medical Society to the American Medical Association to explain the Society's action—a man whose name was known and honored not only in his own country but elsewhere throughout the world. When he appeared before the Association he was treated with contumely and denied the right granted the meanest criminal in this country—the right of a hearing; and we can also remember the kindly and fraternal, the amiable and dignified manner in which New York physicians were assailed as "sighing for the fleshpots of Egypt," and "aching for consultations with homeopaths or any other irregular."

Of course the State Society has not since been represented in the councils of the American Medical Association, but notwithstanding that fact the Medical Society of this State has not suffered. On the contrary, it has done so well in many things, not only in keeping up the honor

and dignity of the profession in both its ethical and scientific aspects, but it has instituted so many good reforms—such as the registry of physicians, state examinations, and the like—that the American Medical Association has expressed a desire to have the State Society come back; —to which I say Amen, provided that no conditions are imposed upon the Medical Society of the State of New York for readmission, no code, and no principles of ethics. New York can manage her own affairs and she will accept no dictation nor interference from any other society in this land. The American Medical Association pretends to be the *arbiter morum* of the medical profession in this country. It numbers officially 21,000.* The medical profession in this country numbers 118,000.† Does it not seem rather an assumption of arrogance that a small proportion of the medical men of this country should dictate to their fellows how they shall comport themselves professionally in public or in private? I confess it seems so to me, particularly as the proud boast of this country has been that the majority rules. Here we reverse it and make the minority rule.

I have never been able to share the enthusiasm of some of my medical brethren for the code of ethics. It has always struck me as being a rank humbug, good enough when it first began—as I understand it did before it blossomed out into a code of ethics—as the advice of a medical father to a medical son. It conveys sentiments and ideas which a father might very well impart to a son but which are entirely inappropriate as rules for the governance of a profession of grown men who are supposed to have put away childish things. Indeed I have never been able to regard the Code or its offspring, the Principles, as anything but "as sounding brass or a tinkling cymbal."

F. R. Sturgis, M.D.

16 West Thirty-second Street,
New York City.

*As given in 1905.
†As given in 1903; probably 200,000 in 1905.

THE FEE QUESTION.

To the Editor of the Medical Record:

Sir:—I have read with interest the correspondence on "The Fee Question," in your issue of January 6, 1906, as presented by Dr. Robert T. Morris of New York. As a general practitioner I cannot help sympathizing with Mrs. C. when she writes, "but we feel you make us pay too dear for it," and admiring Drs. A. and B.

Undoubtedly had Richard McCurdy, the late president of the New York Mutual Life Insurance Co. written to Pres. McCall, of the New York Life Insurance Co., to Pres. Alexander, of the Equitable Insurance Co., and to Pres. Heyeman, of the Metropolitan Life Insurance Co., concerning the fairness and justice of his $150,000 salary, they would have written similarly as did these three surgeons, justifying the enormous salary by the size of the reserve fund, the number of policies in force, the aggregate amount of premiums annually received, etc. Undoubtedly they would have called attention to the possible tremendous loss by an error of judgment in making investments. Now, as a matter of fact, while insurance companies, as companies, carry tremendous financial responsibilities, the work gradually becomes more or less mechanical, a cog with cog, self-perpetuating, automatic, not wholly dependent upon the president, but on the united efforts and judgments of the heads of departments. Indeed President McCurdy showed a lamentable lack of knowledge concerning many large details of the business, which, if the success depended so tremendously on him, he should have known.

Similarly the knowledge, ability, and success of Dr. Morris are not entirely to his own credit, but are due largely to his opportunity and environment. His opportunity for large hospital practice by which to perfect himself, an opportunity that almost any practitioner would court, even at the cost of thousands of dollars per annum, is one example of his opportunity. The perfection of the operation for appendicitis was not the result of his work alone. It is due to the compilation of the efforts and ability of hosts of others.

Undoubtedly the operation was worth $1,000 to the patient, and many times that. But on this score he would owe it to many a mechanic, who by his efforts and ability have rendered travel safe, or other individuals who might have saved his life when in danger from an unlucky accident. The value of the services is largely dependent upon the gray matter expended and effort and expense used in attaining the ability to perform a piece of work. The fact that perchance some lawyer or life insurance president receives an exorbitant amount does not justify another lawyer of a physician to charge exorbitant fees.

Two wrongs do not make a right. True, it is that it costs more to live to-day than formerly and that a professional man of standing is obliged to maintain a high standard of living in order to maintain his position. But these truisms do not permit an unlimited charge.

Dr. M. states that fifteen years ago he would have been longer in doing an appendectomy and it would not have equaled the operation of to-day. True, but this advancement is not due wholly to him. If it is worth $5,000 to-day to do the operation, it was worth $25,000 then, if the measure is to be in any degree the amount of anxious care and effort expended. The method, as he describes it, was the best way then known. In other departments of life, improved mechanisms and time-savers, which lessen care and time, have cheapened the product.

The success of the operation of the present day is due more largely to the evolution of the technique than to the individual operator. To this improved technique many have contributed. Dr. M. to-day can do more operations in a day than formerly. On that particular day he did three other operations, besides, probably attending to office work during office hours. Taking all things into consideration his fees seem to me to be exorbitant. The difference between the general practitioner of equal ability and him is not the vast chasm as represented by the difference of the fees of the two. Dr. M. exceeds in one line, the general practitioner in another, equally high grade and as representative of ability, effort, and time given to perfection.

Such an attitude as manifested in Dr. M.'s communication tends to breed anarchistic and socialistic spirit. It is unfair to patients and brother practitioners. Surgeons of that kind should not be sustained by the general practitioner. Truly, as he states, "We are going through a transition stage . . . but the right is certain to prevail." This is true in matters medical as well as in the commercially inclined life insurance companies, Standard Oil, railroads, etc. Allow a living fee, yea, a generous fee, but not an outrageously exorbitant one.

W. H. E.

Boston, Mass., January 11, 1906.

OUR LONDON LETTER.

(From Our Special Correspondent.)

EXTRAVAGANCE OF HOSPITAL MANAGERS—APPENDICITIS—HEALTH OF THE NAVY—CHILD LIFE IN LONDON—JOHN BURNS AND ANTIVACCINATION—SIR W. FOSTER, P.C.—THE MURDER OF DR. STEWART IN AFRICA—OBITUARY NOTE.

London, January 5, 1906.

I have several times referred to the extravagant expenditure in which hospital managers indulge with a light heart. They load their institutions with debt and on account of its extent claim assistance from the public. It has become a common proverb that a debt is a good advertisement. The absurdity of much of the costly outlay on improvements and extensions is becoming more recognized by thoughtful philanthropists as well as by some of the leading professional authorities. A forcible protest against it reaches me from Dublin *apropos* of a paper at the Royal Academy of Medicine by Dr. Hastings Tweedy, dealing with a series of 211 major operations he had performed in the Rotunda, which is, as we know, the great hospital for women and the chief school of obstetrics and gynecology in Ireland.

The cases included examples of all the usual run of gynecological operations and the series must be pronounced successful, but for the moment my concern is with the point mentioned above.

He said no failure could be traced to any defect in his operating room which was simple but adequate for all the requirements of aseptic surgery. In its very simplicity it is a crushing argument against the lavish expenditure so fashionable in the present day which is supplanting the modest workshop of the surgeon by an operating theater, which might serve as a dazzling advertisement for an electrical quack.

Dr. Tweedy met with support in this protest; Dr. Jellett agreed with him thoroughly and Dr. Horne also deprecated the tendency to expend enormous sums on the construction of operating theaters.

After this it is to be hoped there will be some searchings of heart among London hospital committees and that architects will learn that they must not regard these institutions as monuments to themselves.

It is not only in the charitable hospitals that extravagance has been growing. On a still larger scale the poor law authorities have been squandering money on elaborate buildings until one of them has been boasting of having erected the finest infirmary for paupers in the world. But the boast has attracted the attention of the press to these "palaces for paupers" and some wholesome advice has been offered to rate-payers who are being urged to cast

aside their foolish apathy and insist on economy in municipal expenditure.

The Balneological and Climatological Society has lately discussed the part played by their branch of medicine in regard to the prevention of appendicitis. Dr. Tyson began with a practical paper in which he expressed the belief that the most common cause of the disease is a lodgment of undigested matter or fecal masses in the bowel. He had himself gone through two attacks, both of which he traced to constitpation and it is the experience of many patients that the bowels were confined just before the attack. The older doctors certainly insisted much more on a regular evacuation than many do in the present day. Dr. Tyson said that dosing with salts and black draughts had more to do with the prevention of toxemic intestinal conditions than we are ready to admit. In those far-off days there was more time for study and observation of symptoms, and it was found that free stools kept the head clear and the body cool. Now there are many conditions which have increased of late which are more or less associated with constipation, such as oral sepsis, excessive or unnatural eating, as in modern hotels, unsuitable food, alcoholism, weakened abdominal muscles, and bad methods of defecation. The subject of oral sepsis was commended to the attention of our dental brethren, that of overeating was enforced, especially meat, game and ices, while irregularity of meals and bad cooking were held responsible for much disturbance of the alimentary function. With regard to the special part played by balneology Dr. Tyson said the continental custom of "water drinking" periodically must have a beneficial effect and we possess at home a number of spas where this treatment can be just as well carried out. Such regular washings out of the intestinal canal would do much to prevent many cases of colitis and appendicitis. There is a tendency to ignore treatment at the early stage, still more prevention, and yet much good can be done.

In the discussion that followed Dr. Symes Thompson held that disinfection and lubrication of the intestinal tract were the essentials of prevention. Salol, he thought, secured the first, but in compressed form was untrustworthy. He did not explain how its insolubility could be overcome but proposed to suspend it in petroleum emulsion. Fluid vaseline in dessertspoonful doses would keep up regular action without purging. Dr. Sandwith said the disease was not so common among colored as white races and he attributed this to the cahe to avoid constipation or hurrying over meals—still more, perhaps to efficient mastication. Dr. B. Thorne attributed the disease to habitual toxicity of the intestinal contents, chiefly traceable to catarrh leading to fermentative decomposition which throws on the cecum—the disinfecting chamber of the bowels—more work than it can do. He regarded castor oil as the best disinfectant and bactericidal purgative. Dr. P. G. Lewis also regarded sepsis as the most frequent cause and said people must be taught what to eat and how to eat, especially the importance of thorough mastication. Dr. Leonard Williams agreed as to septicity but thought there were causes additional to catarrh. The excessive amount of meat consumed of late might account for the increase of the disease for it had been observed that increase corresponded with the lower price of meat. Another factor was the extra work thrown on the bowel by neglect of other emunctories. He had no doubt much of the work of the skin was thrown on the bowel. Persons with active skins did not often get attacked with appendicitis. He thought wearing flannel next the skin an unscientific and even ridiculous custom.

The Blue Book on the Health of the Navy was issued on Saturday and the report is very satisfactory. With a personel increased by 7,440 as compared with the previous year, the statistics show decreases in the ratios of cases, invalidings and deaths as compared with the average of the last seven years. The ratio of cases per 1,000 of the force shows a reduction on all stations except the Pacific as compared with the septennial average. The invaliding ratio is 22.7 per 1,000 and shows a decrease of 7.28 compared with the septennial period. The death ratio per 1,000 was 4.45, a decrease of 1.01. The total number of deaths was 493, of which 348 were from disease and 145 from injury.

In a report of the County Council Education Committee issued on Tuesday the medical officer, Dr. Kerr, deals with the physical conditions of child life in London, especially in relation to mental activity and educational fitness. Increasing solicitude is reported as to personal cleanliness of the children attending elementary schools. A large part of the report refers to infectious diseases in relation to school attendance. With regard to underfeeding it is stated that it is "impossible to attain an opinion of any scientific value without the expenditure of much time and money on observations of the physique of sufficient children to establish standards."

The new President of the Local Government Board, Mr. John Burns, has stated that personally he has always been opposed to vaccination and will do his best in the direction of his private views. This is the official who is to have the administration of the vaccination arts while the new government lasts. It is not a pleasant prospect for sanatoriums.

Sir Walter Foster has been made a Privy Councillor.

Further details have arrived at Liverpool of the murder of Dr. Stewart. It seems on returning from an expedition he went somewhat in advance of his carriers and missed his way and got into a hostile village. The carriers found his bicycle, and on a further search portions of a body, which they identified. The appearances indicated that the body had been partially eaten. The village is only two days march from Calabar but the natives are known to indulge in cannibalistic orgies when they think they can escape detection.

Mr. T. Platt, J.P., consulting surgeon to the Oldham Infirmary, died on the 29th inst., aged 73. He had held many offices in the town where he was the senior surgeon and had practised between forty and fifty years. He was made a justice of the peace in 1877.

Mr. T. C. Langdon, consulting surgeon to the Royal Hunts County Hospital died on the 18th inst. Though his health had failed of late he kept to his work almost to the last. He was Medical Officer of Health for Winchester, superintendent of the hospital for infectious diseases and held other posts in the city, in which he practised for more than forty years.

Progress of Medical Science.

Boston Medical and Surgical Journal, January 8, 1906.

Open-Air Treatment of Bone Tuberculosis.—E. H. Bradford notes the experience of patients treated at the Wellesley (Mass.) Convalescent Home, and appends brief notes of thirty cases permanently cured. In this institution a large number of children are placed in shacks with free opening to the outer air, and it is kept open the year round. The author states that experience seems to have taught those who have had the direction and care of these cases that in our climate and environment a situation in the interior, if well selected, is, on the whole, more useful during all the months of the year than a sea-coast site. The sea-side sanatoria in Europe and in our country have proven their usefulness, but it must be remembered that the sea coasts in Europe present a different climate from that which in the winter surrounds the bleak coast of New England. Most of the patients had been previously treated in a well-ordered hospital but the marked gains in weight and increase in hemoglobin following their removal to the open-air environment are very striking.

What is the Relation Between Human and Bovine Tuberculosis, and How Does It Affect Inmates of Public Institutions.—Theobald Smith notes that investigations along the lines of relationship between human and bovine tuberculosis have firmly established two facts: 1. The conception of two types of mammalian tubercle bacilli, a bovine and a human type and 2. the occasional presence of the bovine type in cases of human tuberculosis. He is not willing to admit the validity of the evidence tending to show the transformation of the bovine into the human bacillus in the human body though granting that certain changes may occur as manifested by a reduction of virulence. The bovine bacillus has been found almost exclusively in children under ten years of age. Phthisis and other forms of tuberculosis in adults are, so far as we know, almost wholly of human origin. In institutions in which children are cared for, the source of the milk should receive careful attention and herds belonging to the institution should be free from any traces of this disease. In institutions harboring adults there need be less anxiety on this point, and if all animals of reduced vitality or whose udders are not above suspicion are eliminated, the danger of infection may be regarded as exceedingly small. This standpoint is based upon the following well-established facts: (1) With few exceptions, cattle reacting to tuberculin are in an early or latent stage of the disease, during which tubercle bacilli are not excreted in the milk. (2) When tuberculosis becomes generalized, which frequently happens after parturition, and the udder and uterus become affected, physical examination and microscopic examination of the secretions should detect it. To these we may add that it is highly probable that we can successfully resist an occasional tubercle bacillus, and that most of us, at one time or another, have ingested without harm a few bacilli in milk or butter. It is equally probable that our

resistance may give way at an unguarded moment when our alimentary tract is being daily flooded with bacilli from a tuberculous udder.

The Suppression of Tuberculosis in Our Dairy Herds.—A. Peters comments on the spasmodic and sporadic efforts often made to keep herds free from tuberculosis. What we need is a rational plan, rigidly adhered to. With tuberculin as a diagnostic agent it is perfectly possible to eliminate diseased and infected animals from a herd, and with thorough disinfection and the purchase only of tested animals with semi-annual tests of all the animals, a healthy herd may be maintained. A practical method of immunization is greatly to be desired. Stable hygiene should receive the closest attention, but this alone is not sufficient.

New York Medical Journal, January 20, 1906.

The Maintenance of Asepsis.—D. H. Craig expresses the belief that antiseptics with the possible exception of sixty per cent. acohol, should be absolutely forsworn in the disinfection of living tissues and in the operating room. Corrosive sublimate requires time for the penetration of the capsule of pathogenic organisms. As a mere rinsing solution it is no better than sterile water. Moreover it may irritate delicate tissues. He mentions several incidents occurring in the course of operations, which completely nullified elaborate aseptic precautions previously made. None of these occurrences may have done, the author admits, any serious harm to the patients in question, but they were full of possibilities for evil, and if left uncorrected would have placed an additional tax upon the patient's powers of resistance. He moreover declares his belief that, since the establishment and maintenance of absolute asepsis are impossible to living tissues, the so-called "reaction" temperature seen on the postoperative charts of surgical patients is in the vast majority of all cases, especially those in which no demonstrable degree of surgical shock obtains, neither more nor less than an index of the amount or dose of infectious material introduced. Consequently surgeons having learned how to acquire a practical degree of sterility in connection with operations should learn how to maintain that sterility to the very end of its need. They must acquire the aseptic conscience.

Some of the Uses of Pelvic Massage.—J. T. Johnson quotes from several of the current text-books on the subject of pelvic massage and states that his own experience with this procedure has been mostly in the non-operative treatment of uterine displacements. The displacements themselves cause, in his opinion, very little trouble, but the complicating effusions, exudations, adhesions, and inflammations are potent for evil. Acute inflammations, infections, the presence of pus, malignancy and ectopic pregnancy contraindicate pelvic massage, but we do have many distressing retrodisplacements unaccompanied by any of the above-mentioned associated contraindications, but complicated still by those other associated conditions which are not included among the contraindications. In those cases in which one possesses the expert skill to differentiate the safe from the unsafe conditions, pelvic massage can be relied upon to restore abnormal to normal states when intelligently and honestly carried out by one fully understanding its details. The author considers that surgery for the relief of displacement has been overdone, declaring that the number of operations devised exceeds that of Heinz's "57 varieties," and believes that there is a promising future for pelvic massage.

The Therapeutical and Prognostic Value of Occult Hemorrhage in the Stools.—J. D. Steele discusses this question with special reference to gastric ulcer in which malady, however, blood does not always pass in the stools. Its presence, however, is always a confirmation of a diagnosis made on other grounds, and it is of special value, first, in the differentiation of true ulcer from stomach pain due to neurosis, especially when the latter is accompanied by hyperacidity; and second, in the recognition of chronic gastric ulcer. The test for occult blood can be used to control and determine the length of the various periods of medical treatment of ulcer. The bleeding should stop within a week after the patient is placed on a milk diet and rest in bed. As soon as blood disappears from the stools, provided the other symptoms are favorable, the diet may be increased. If bleeding recurs during the period of increase in diet, it indicates that the change is being made too rapidly. Persistent recurrence of hemorrhage when the change from liquid to solid food has been tried a number of times would indicate that the ulcer will not heal under medical treatment, and that surgical intervention is called for. The author's final conclusions are as follows: The conditions in which the test for occult blood in the feces will be of prognostic and therapeutical value in the course of gastric ulcer are as follows: First, to determine the length of the various periods of the medical treatment of ulcer; second, to detect the tendency to bleeding during the course of gastric ulcer and by appropriate medical and surgical measures to anticipate and prevent serious hemorrhage; third, to determine when the medical treatment may have failed and surgical treatment is indicated; fourth, perhaps the test may prove helpful in certain circumstances in detecting the development of a cancer upon the floor of an ulcer.

Migration of Helminths.—H. Page operated upon a Filipino native for suspected appendicitis. The patient brought to him from a distance was suffering from severe abdominal pains. The whole belly wall was swollen and indurated, but was not particularly tender upon pressure. An ill defined large lump was felt over the region of the appendix, and this fact suggested appendicitis, though a definite diagnosis was not made. The incision through the abdominal wall passed through honeycomb granulation tissue to a depth of several inches. At the bottom of the wound there was eventually removed a great number of long ascarides, which were in several instances coiled in large cavities. This made the operator fear lest he had opened an intestine, and he put a hurried end to the operation. Administration of hematoxylon showed that there was no fecal fistula, and santonin cleared the bowel of a mass of worms, while for many days from the tissues of the abdominal wound, worms were extracted. The patient finally recovered.

American Medicine, January 20, 1906.

Acute Osteomyelitis.—Emil King emphasizes the necessity for early diagnosis. Cases running an atypical course, or not responding properly to treatment, should put the physician on his guard that he may revise his diagnosis. Greater care should be exercised in the examination of patients. The early diagnosis of osteomyelitis is not always easy, but can usually be made by bringing to aid all modern methods, such as a blood count and the Roentgen ray. Early proper treatment will save much suffering, possibly lifelong crippling, and perhaps life itself.

Etiology, Symptomatology, and Treatment of Anal Fissure.—Herman A. Bray states the most characteristic symptoms of anal fissure are: pain or irritation of the anus and paroxysmal contraction of the sphincters. While these symptoms may be considered as pathognomonic of the disease, without a local examination, comprising inspection and a digital exploration, it is not possible to reach a correct conclusion. Treatment may be either palliative or operative. The former is sufficient in most cases. It consists of measures for preventing constipation, observation of local cleanliness, and local applications to the ulcer. The method of operation employed by Dr. Bray is divulsion with incision, trimming at the same time the indurated margin of the wound, and curetting the base. The bowels should be kept confined for three days, and after this time daily movements are secured by laxatives. The ulcer usually heals in about two weeks.

Diagnosis of Incipient Genitourinary Tuberculosis.—G. Frank Lydston emphasizes the fact that greater care in diagnostic methods will enable us to discover genitourinary tuberculosis in its incipiency much more frequently than is ordinarily supposed. He reports a number of cases showing that after every other test failed inoculation of a guinea pig with the urine was reported to with the result that in each case the animal developed distinct tuberculosis.

Ectopic Gestation.—William H. Randle believes that many patients die each year of so-called heart disease and other causes, when in reality the death is due to internal hemorrhage from ectopic gestation. He discusses the pathology symptoms, and diagnosis of this condition. In cases of doubtful diagnosis a small vaginal incision may be made through the posterior vaginal vault, when the escape of free blood will verify the diagnosis. The treatment is invariably surgical. As little anesthesia should be used as possible, and stimulation should be withheld until the bleeding point is secured. When the abdominal incision is made no attention should be paid to the enormous quantity of blood that usually gushes forth, but the surgeon should place his hand directly on the ruptured tube and clamp the bleeding parts. After this vigorous stimulation may be employed. The blood clots may be rapidly ladled out and the abdominal cavity flushed with a large quantity of sterile saline solution. A quantity of this fluid may be allowed to remain in the pelvic cavity. Drainage is rarely necessary, in fact it is detrimental. In all cases in which a hematocele has formed, a vaginal incision may be made with the evacuation of the clots which lie in large quantities in the pelvic cavity; but the patient should be prepared for the abdominal operation should it prove necessary because of the recurrence of hemorrhage.

Diabetic Purpura.—C. H. Lefcowitch reports the coexistence of purpura and alimentary glycosuria in a boy of 3. The patient was nervous and suffered from enuresis and a stomatitis of moderate severity. His appetite was poor but his general nutrition was fair. After two months' treatment, largely dietetic, the boy apparently made a complete recovery. One year later the patient presented the typical aspect of a true diabetes mellitus, but no symptoms of purpura. After nine months constant attention under the family physician, the boy remains comfortably healthy while under a judicious diet. Lefcowitch emphasizes the importance of urinary examinations in the infant and child in making a diagnosis and in the study of metabolism.

Journal of the American Medical Association, January 20, 1906.

Rhythmic Sounds in the Alimentary Canal.—W. B. Cannon describes and differentiates the various sounds produced under normal conditions in the alimentary canal. Their most characteristic feature is their rhythmicity, over the stomach rhythmic persistaltic waves pass in regular succession; in the small intestine the most usual activity is the rhythmic segmentation of the food; and in the large intestine rhythmic antiperistaltic waves follow each other at short intervals in the ascending colon toward the cecum. Gas mixed with the food favors the production of these sounds and when air-containing food is taken, and frequently after an ordinary meal, rhythmic sounds can be heard over the pyloric end of the stomach, and later over the small intestine. The gastric sounds are best heard after a bountiful meal, say an hour after dinner and with the subject lying on the left side with the pyloric end of the stomach uppermost. The disk of the stethoscope should be placed near the end of the eighth rib on the right side. The sounds heard are usually loud, rattling, explosive, and of characteristic quality, sometimes lasting several seconds. They recur at intervals varying in the neighborhood of every 20 seconds and are sometimes strikingly regular. During the height of digestion there is usually a confusion of abdominal sounds, especially over the right lower quadrant of the abdomen. It is, therefore, better to listen first in the night, or better still, an hour or so after waking in the morning before breakfast. The stomach is then quiet, and with the disk of the stethoscope over the lower left quadrant the active part of the large intestine is avoided. The rhythmic sounds of the small intestine then heard are quite different from those of the stomach. They vary in quality, sometimes a soft, muffled rumble, sometimes fine crepitation, and sometimes a group of little rattling explosions. There are, however, three distinctive features. There are, first, the slow crescendo followed by a diminuendo in the sound, so that each sound lasts two or three seconds or more; second, the persistence of the rhythm in one place; and, third, the distinctive rate, the usual interval being every seven or eight seconds. In the morning, after a full dinner the night before, Cannon has heard these sounds continue an hour and a half without interruption, but they can also be heard at other times, and even in the midst of active digestion. The variations of these sounds in pathologic conditions and the sounds of the large intestine have not yet been studied, and the bearings of these studies on clinical medicine are yet unknown. Cannon suggests that the method may be used in some cases to differentiate "motor insufficiency" due to imperfect peristalsis from that caused by pyloric obstruction.

Amaurotic Family Idiocy.—M. Frank reports briefly a case of this condition, describes the characteristic fundus changes, and reviews the literature regarding them. The characteristic ocular symptoms which remain unaltered through the course of the disease, consist in a nebulous grayish white area surrounding the macula about three times the size of the disc, somewhat oval in shape, with the major axis horizontal, and gradually bending at the edges with the normal fundus. At its center, coinciding with the fovea but larger, is a clearly defined dark red or liver-colored spot. Surrounding this can be seen the tiny retinal vessels. Strabismus and nystagmus have been observed in some cases. There is no recorded regularity in the pupillary conditions. The other symptoms of the disease, the marasmus, the mental failure, and ultimate paralysis, together with the hereditary or family tendency are mentioned, together with the optic atrophy and blindness. Frank attributes the pathognomonic eye changes to swollen and degenerated ganglion cells rather than to an edema; the constancy of the phenomenon and the lack of veiling of the vessels are against edema. He summarizes the cases reported up to date, 54 in all, with 22 others referred to. Where race data were given the great majority are Jews. There have been 12 post mortems, and in 6 cases the eyes were microscopically examined.

The Actual Cautery in Leucorrhea.—G. L. Hunner describes his method of treating leucorrhea by making deep radial incisions of the cervical tissues by means of the cautery blade. With the patient in the dorsal or lithotomy position, a broad-bladed Sims speculum is introduced into the vagina, the anterior lip of the cervix is seized with a tenaculum, and the cervix is pulled down as near to the vulva as possible. The nurse works the cautery bulb with one hand, while she holds the speculum with the other, and the operator keeps the tenaculum in one hand and manages the cautery with the other. The strokes should be made one at a time, the cautery is removed from the vagina after each stroke as the patient feels the radiated heat on the vaginal walls. She must be warned not to move and she will feel no actual pain, unless there already exists a painful cervical scar, in which case Hunner uses preliminary cocain anesthesia by means of a tampon soaked with 20 per cent. cocain solution applied for ten minutes. The number and depth of the strokes vary with conditions present, but he usually gives six, ranging from 2 to 5 mm. in depth, and extending across the whole hypertrophied mucosa. The treatments are given once in three weeks and usually number from three to six. A sterile strip of gauze is left in the vagina against possible hemorrhage and the patient is instructed to withdraw it the following evening. If the bleeding is profuse she should go to bed. There is often a little hemorrhage after three or four days, and in one or two of his cases this was enough to alarm the patient. A daily douche is advised during the interval between treatments. So far as Hunner knows, there have been no bad after-effects as regards parturition. He emphasizes the importance of a correct diagnosis before treating any case of leucorrhea. If there is any suspicion of cancer, he advises an examination by a competent pathologist. In fresh gonorrheal cases he does not use the cautery or anything that can excite or extend a cervical infection. In chronic gonorrhea he does not persist too long with the cautery or cervical treatments, as there may be infection higher up, but cases not extending above the cervix may be considered curable. The quickest and best results are obtained in a cervical hypertrophy and eversion due to multiple childbirth. One advantage of the method is that it can be used in office practice and without anesthesia.

The Lancet, January 6, 1906.

A Case of Ochronosis.—F. M. Pope and A. E. Garrod report a case of this rare affection and tabulate ten other cases previously reported. Their own case is illustrated with a colored plate which shows very well the peculiar hue of the skin and also the microscopical findings of sections of skin and cartilage. The patient was a woman of forty-seven years, with a large ulcer on the leg, of twelve years' duration, and discoloration of the skin. The ulcer had been dressed continuously with carbolic acid solutions. The discoloration had existed for five years. The face was a dark brown. Inside the lips were blackish patches. The hands and ears were bluish and a small patch of similar hue existed on each conjunctiva about midway between the inner canthus and iris, when the iris was central. There were signs of a cavity at the apex of the right lung and the patient was much emaciated. Her mother had suffered from pulmonary tuberculosis. The urine was almost black in color; it gave a dark brown precipitate with liquor ferri perchloridi and a slight white precipitate with bromine water. No sugar or copper-reducing substance was present. The urine was not of the same color every day. Gangrene of the toes came on and the patient died in a few days from exhaustion, there having been no material change in the symptoms. Post mortem, the right lung had a dry cavity at the apex. The suprarenal bodies were hard and dark in color. The rib cartilages were stained bluish-black; the color was more marked in the central area than at the periphery. The cartilages of the ears were bluish-black. The intervertebral cartilages were not examined. The patches of pigment in the eyes were seen to be due to a deposit of pigment in the superficial layers of the sclerotic. The diagnosis from autopsy was tuberculosis of the lung and disease (Addison's) of the suprarenal bodies. The color of the urine was regarded as due to carboluria.

Operation on the Vestibule for the Relief of Vertigo.—The paper of R. Lake is illustrated with several anatomical diagrams showing the various steps to be followed in the operation referred to. The paper is in the main the report of one case with comments thereon, the patient being a woman of twenty-nine years, who had been for some time absolutely deaf on both sides. Several attacks of otitis media had occurred and the left ear was liable to relapse. Bilateral aural vertigo was pronounced, and when she walked she described, so to speak, a series of curves with the major tendency toward the left.

The operation is described in full, but space does not allow us to go into details. At the end of three weeks the woman was able to walk fairly straight, to go up and down stairs and to make all the usual motions of daily life without inconvenience. Only one side was operated on, but the results were so satisfactory that the patient expressed a desire for operation on the other side. A slight and transient facial paralysis remained. Lake notes in comparing this operation with the successful cases of intracranial division of the auditory nerve, that direct successful destruction of the posterior half of the membranous labyrinth would have been equally successful so far as vertigo is concerned; and what is of greater importance still, judging from experience thus far accumulated, the latter procedure is without danger to life.

Syphilis Following the Bite of a Human Being.—J. G. McNaughton reports the case of an adult woman who was bitten on the back of the hand by another woman. A sore formed subsequently at the place and required about six weeks for healing. About five weeks after the bite spots began to appear on her body and a little later her hair began to come out. When the patient was seen by the author the sore on the hand was quite healed, leaving a dark red scar of the size of a florin. The rash had quite disappeared but the woman was still suffering from condylomata. Her mouth showed several mucous patches, especially on the inner surface of the lips. In the larynx there was considerable infiltration of the interarytenoid region, with ulceration of one vocal cord. The patient is a widow; but there seemed to be no reason for believing that the disease had been contracted in any other way.

British Medical Journal, January 6, 1906.

Medical Aspects of Carcinoma of the Breast.—W. Osler notes that examination of the breast is often overlooked though extensive general lesions may be associated with a small latent carcinoma. There is one form of disease, carcinomatous mastitis, presenting the aspect of a diffuse, rapidly spreading inflammation, rather than of a new growth. Metastases may be intrathoracic, abdominal, cerebral, spinal and osseous. Illustrative cases are given with comments under each of these headings. Thus in one case, the initial symptoms were those of long standing neurasthenia, the onset being marked by pains in the back and legs and thought at first to be due to pleurisy. The peritoneum may be involved by direct extension and often there is a recurring carcinomatous ascites. Metastases in the liver are perhaps more frequent than in any other organ. Cerebral symptoms may be caused by involvement of either the cranial bones or of the brain itself. Symptoms of cerebral tumor may follow years after the removal of the breast or in a patient with an old atrophic scirrhus. The most common and most serious as entailing a maximum of suffering are lesions of the spine. These were present in ten out of a series of twenty-nine cases collected by the author. They are more common in the atrophic form of scirrhus and are often regarded as evidences of spinal cord affections. Actual kyphosis is rare. As a rule the pains are thoracic and lumbar, but may be at first sciatic, shooting down the legs. After the painful pressure symptoms there ensues pressure paraplegia, usually of the spastic type. Rarely there may be an involution of the metastases.

Lepra Ophthalmica. K. Grossman contributes an elaborate statistical paper describing cases examined at the leper hospital in Langarnec, Iceland, in 1901 and 1904. He notes that the disease is more rapid and more pernicious in the nodular form, both generally and as far as ophthalmic leprosy is concerned. From his personal observations he concludes that in lepra tuberosa the eyes become specifically affected in all cases, provided the patient lives long enough while in lepra anesthetica the eyes may remain unaffected if the nerves supplying the ocular adnexa remain free. The nodular form generally affects the adnexa first, supercilia and lids and attacks the eye itself later, though the eye may be affected when no nodular infiltration of the lids is present. When the eye itself is the seat of the leprous infiltration, or more accurately, when the episcleral tissue is attacked, the appearance is so characteristic that it cannot be mistaken for anything else. The pericorneal region of the sclera generally in a quarter or half its circumference becomes a pale, greyish-yellow color, quite anemic, and the slightly translucent and raised part looks like ivory. This infiltration has a tendency to spread, especially laterally, so as gradually to surround the whole cornea but it also often encroaches on the cornea itself, which thereby becomes opaque in the affected region. The anesthetic form of leprosy has no such characteristic or specifically leprous appearance; the affection of the fifth nerve produces anesthesia of the conjunctiva, and even of the cornea, and if the facial nerve is attacked, wholly or in part, lagophthalmos results, as well as all the consequences of the eye being unprotected from injury.

The Treatment of a Common Cold. In the experience of F. P. Atkinson the quickest relief in case of a common cold is obtained by giving 30 minims of sweet spirits of niter and the same quantity of aromatic spirits of ammonia in 1 ounce of water, repeating the dose in two and then every four hours. Three or four doses are generally sufficient to put a stop to the discharge. Should the discharge happen to be thick when first seen, then a snuff composed of 1 gr. of cocaine, 2 gr. of menthol, and 100 gr. of boric acid quickly effects a rapid cure. When the cold has run down into the trachea, as shown by a tickling of the throat whenever a long breath is taken, then a mixture of liq. ammon. acet. ʒij, sp. ether. nit. ɱx in 1 oz. of water, every four hours, rapidly gives the required relief.

A Series of Cases of Icterus Neonatorum in a Family.—J. Busfield reports the history of a family in this respect, the children, ten in number, being born while the mother was between eighteen and thirty-four. The first, a boy, had no jaundice; the second, a girl, had it, but recovered; the next four all died with it; the seventh, a girl, and the eighth, a boy, had it but recovered. These cases were given a small dose of calomel followed by large and repeated doses of castor oil and a rhubarb and soda mixture. The same treatment was without effect on the ninth child, a boy, who died on the fourth day, as did also the tenth child, a girl. All of the children were born at full term and syphilis could be excluded.

Berliner klinische Wochenschrift, January 1, 1906.

Spirochæta Pallida in the Tissues.—Buschke and Fischer have found spirochetes in the organs of two out of six syphilitic infants. The Giemsa method was found unsatisfactory in studying sections of tissue, and the authors recommend the following method of preparation. The bits of tissue are hardened in formalin and alcohol, and are then put for three days into a 1.5 per cent. solution of silver nitrate, kept at a temperature of 38° C. They are then for twenty-four hours treated at room temperature with a mixture containing pyrogallic acid 0.2 formol 0.5, distilled water 100. They are then imbedded in paraffin and the sections may be stained either with Giemsa's fluid or with toluidin blue. The organisms are more conspicuous, however, if no counter stain is employed. By using this method the authors discovered the organisms in the liver, spleen, and kidneys as well as in the cutaneous lesions. The spirochetes appear to be the most numerous in the walls of the larger and smaller blood vessels close under the endothelium.

Enterogenic Cyanosis.—Vander den Bergh and Grutterink describe six cases of cyanosis dependent on the absorption of toxic products from the intestine. These cases could be divided into two distinct types. In one set the blood gave the spectrum and chemical properties of sulphohemoglobin while in the other genuine methemoglobinemia was present. In the cases of the former class the condition was promptly relieved by a thorough course of intestinal pugation, and in the others the cyanosis would disappear after one or two days of rigid milk diet to return again when vegetables were added to the regimen. After considerable time had been spent in experimentation it was discovered that the cause of the reduction of the hemoglobin was the presence in the blood of nitrites, probably dependent on their increased production in the diseased intestinal canal.

Münchener medizinische Wochenschrift, January 2, 1906.

Thoracic Operations in the Pneumatic Cabinet.—Sauerbruch describes the operations which have so far been performed in the pneumatic cabinet designed by him for the purpose of rendering operations on the thoracic viscera possible without giving rise to danger from the pneumothorax. He first reiterates his former claims to the effect that it is preferable to use the negative pressure apparatus containing the patient's body together with the operator and his assistants, rather than to resort to the so-called positive pressure apparatus advocated by several other authors and in which distention of the lung is maintained after opening the pleural cavities by the increased atmospheric pressure in a small chamber containing the patient's head only. In practice it was found that a negative pressure of 8 mm. was most suitable for the routine adjustment of the apparatus. According to the conditions this was occasionally allowed to rise to—4 or—6 mm., and before closing the thorax was reduced to—12 mm. in order to insure close adaptation of the lung to the chest wall. Chloroform was found to have distinct advantages over either as an anesthetic. In some in-

stances a simple intercostal incision gave sufficiently free access for the performance of the necessary manipulations, but in others one or more ribs were resected. In all sixteen operations were performed; two of them on the thoracic wall, eight on the lungs; one on the heart and five on the esophagus. In connection with the first class of cases the authors point out the advantage that results from the possibility that is now given of successfully attacking mammary carcinoma even after the deeper structures are involved. In one of his cases portions of several ribs, together with the adjacent soft parts, were resected on this account and the resulting gap covered over by a large pedicled flap of skin and muscle taken from the other side of the chest. The result was excellent, the flap apparently becoming firmly fixed to the underlying lung, which was in direct contact with it. The operations on the lungs for various conditions, were also for the most part satisfactory in their outcome, but the cases of resection of the esophagus all resulted fatally. The author attributes this largely, however, to improper selection of patients and to the imperfection of the technique in dealing with this hitherto unexplored province of surgery.

Experiments on Anthropoid Apes in Regard to the Tuberculosis Question.—Von Dungern went to Sumatra in order to carry out experiments on gibbons relative to the comparative virulence of human and bovine tubercle baccili. Owing to the susceptibility of the animals to various forms of infections they are difficult to maintain in captivity even in their native country, but a sufficient number of experiments were brought to a successful termination to permit of definite conclusions. So far but little unimpeachable evidence has been secured to indicate that the bovine tubercle bacillus is less virulent for man than for cattle, and von Dungern's experiments seem to be in accord with the view that there is little if any difference in virulence between the two organisms. One set of the apes were given human bacilli subcutaneously and by the mouth, while another set were similarly infected with bovine bacilli. The infections in each case resulted fatally at about the same period, and though some differences in regional distribution were observed, the series of experiments was too small to justify the author in drawing conclusions in regard to this matter. The fact that the Perlsucht bacilli are just as virulent for apes as for cattle, whereas the former are much more closely related to man than are the latter animals, warrants the conclusion that they would be equally hostile to the human organism.

Fatigue Toxin and Antitoxin.—Weichardt continues the description of his observations on the fatigue toxin and states that he has discovered that it is possible to produce artificially a substance which apparently is the same as that formed in the bodies of experiment animals subjected to excessive muscular work. The artificial fatigue toxin can be obtained by subjecting albuminous material of various sorts to reducing or oxidizing agents. Egg albumen, placental extract, plant albumins, and pollen, all yielded substances apparently similar to that already studied. Although numerous chemical processes were found to produce active toxins the most satisfactory method for their manufacture was discovered to be by means of electrolysis. In this way fatigue antitoxin was obtained from the bodies of dead tubercle bacilli, and also from the fresh serum of a rabbit. The author concludes that the molecule of albumin when undergoing decomposition has the tendency to form as byproducts to more stable compounds certain toxic substances which belong to the class of genuine toxins. In response to the presence of these the animal body forms antibodies. The fatigue toxin is probably neither a reduction product nor an oxidization product of the albuminous molecule, but is a byproduct formed in the process of decomposition.

Deutsche medizinische Wochenschrift, January 4, 1906.

Miliary Tuberculosis.—Ribbert reiterates his former statements to the effect that the view as to the causation of miliary tuberculosis held by Weigert and his followers is erroneous. Their theory is that the dissemination of the bacilli takes place through the sudden escape into the blood stream of a large number of tubercle bacilli which are at once spread about through the various viscera. Ribbert takes the stand that the process of dissemination is a more gradual one, and believes that this must be so owing to the fact that tubercles which are manifestly of very different ages often occur side by side. In his opinion minute tubercles of the intima of the blood vessels play a prominent part in the process. By making serial sections of the lung, for example, he says that it is possible to discover them in their earliest stages as minute prominences of the arterial wall, and from these he believes a further propagation of the organisms takes place. Circulating blood does not afford a favorable culture medium for tubercle bacilli, which soon disappear from it unless the supply is constantly reinforced. According to Ribbert the original point of entrance of the bacilli into the blood does not discharge its whole cargo of germs at once but continues to permit their escape over a considerable period of time. The intima foci of the pulmonary arteries when occurring in the smallest branches promptly cause these to be occluded, and the identity of the vessel can then no longer be recognized when sections of the tissue are examined. In this way the uniform distribution of the tubercles throughout the entire lung is explained.

Local Anesthesia.—Braun in discussing this subject attributes a great deal of importance in the development of the technique to the introduction of the use of adrenalin solution. This greatly increases the efficacy and reduces the disadvantages of cocaine and its congeners. Tropacocain alone is an exception and cannot be used in combination with any of the suprarenal preparations, as it almost entirely destroys their specific action. In discussing the various fields of utility for local anesthesia the author says that both laryngology and rhinology owe their modern state of perfection almost entirely to the possibility of producing local anemia, abolition of reflexes, and insensibility to pain in this way. Esophagoscopy also has been rendered possible through the application of cocaine. In dentistry it is claimed that the introduction of the adrenalin mixtures is going to render the administration of general anesthetics unnecessary except for children or nervous individuals. Operations on the bladder and urethra while possible under local anesthesia are preferably done with the aid of medullary anesthesia. The author is not in favor of attempting to extend the field of local anesthesia into the domain of major surgery except in the case of especially suitable operations and patients, such as the radical cure of hernia in thin individuals. In any event the most precise anatomical knowledge, particularly regarding the innervation of the parts involved, and judgment in the technique of administration are essential in producing successful results in the use of local anesthesia.

The Effect of Cholin Injections on the Leucocytes.—Werner and Lichtenberg describe experiments in the course of which cholin was injected subcutaneously into rabbits and leucocyte counts made at short intervals. It was found that a prompt and often extremely marked diminution in the number of leucocytes was produced. On comparing their own results with those obtained by Helber and Linsner who examined the blood of rabbits that had been exposed to the *x*-rays, the authors found numerous points of similarity. These comprised the rapid diminution in the leucocytes, the increased tendency to hyperleucocytosis following prolonged application of the irritant, individual peculiarities in the reaction of different animals, the evidence of degenerative changes shown by the leucocytes, and the slightness of the general disturbance produced by the treatment in either case. These considerations induce the authors to suggest the advisability of making therapeutic trials with cholin in diseases that are amenable to treatment by the *x*-ray.

French and Italian Journals.

The Toxicity of Eggs.—Linossier declares that the toxic action of eggs is sometimes noted in man following the ingestion of perfectly fresh hens' eggs. The symptoms of intoxication are exclusively gastrointestinal. Very few people suffer from the symptoms due to intoxication by eggs; but when they are affected in this way the susceptibility is constant and sometimes they are sensitive to the smallest quantity. In certain cases it might be thought that autosuggestion plays a part, but the writer has been able to convince himself that the phenomena of intoxication manifest themselves when egg is introduced into the food unknown to the patient. There is a strong analogy between the toxicity of eggs and that of substances causing urticaria which is manifested in only a small number of people who have this predisposition. Brocq considers that the white of egg causes urticaria.—*La Presse Médicale,* December 6, 1905.

Extensive Lupus of the Face Cured by Radiotherapy.—Barjon reports the history of a patient who was completely cured of very extensive lupus of the face after suffering from this disease for nineteen years. The woman, 41 years old, had come to the hospital for treatment of osteitis of the foot, and during the period of surgical treatment of this lesion Barjon applied the Roentgen ray to the lupus. This affection which had at first shown itself nineteen years before, affected the entire left side of the face. It was characterized by a series of nodular and scabby foci surrounded by red inflammatory zones. The treatment

by the *x*-ray, which comprised fourteen sittings, was given within a period of about two months. Improvement was rapid. At the last nothing abnormal could be noticed on the face. This healed condition at the time of Barjon's report had lasted for more than six months. The cosmetic result was excellent. The rapidity of this recovery is remarkable especially when the extent and the age of the lesions is considered.—*Lyon Médical*, December 3, 1905.

Osteomyelitis of the Upper Extremity of the Right Femur.—Princeteau had this case under his charge. Several operations were performed during the course of the disease. The first consisted of incision followed by drainage. At the second, curettage of the femur was performed. After this intervention the albuminuria almost disappeared and a notable improvement in the general condition of the patient took place. Three or four months later there supervened facial paralysis of peripheral origin, anasarca, oliguria, uncontrollable vomiting, and a semicomatose state. At the third operation the right kidney, which seemed to be the more diseased, was exposed, and two grafts of a rabbit's kidney were made. A notable improvement followed, but death took place after some days from pulmonary congestion. At autopsy the other kidney was found to be very much diseased. A nutmeg liver was found, and the spleen was very diffluent. Princeteau felt that in spite of the termination of the case, surgical intervention had been of use.—*Journal de Médecine de Bordeaux*, December 3, 1905.

Rheumatism, Its Pathogenesis and Treatment.—Albert Robin recently presented to the French Academy an original work by Pénières bearing the above title. This writer believes that rheumatism is due to autointoxication provoked by the introduction into the blood of a toxin, a ferment analogous to the fibrin-ferment of coagulated blood studied and isolated by Schmidt. He thinks that this ferment is eliminated by the urine as it is formed, just as are other toxins contained in the normal urine. Thanks to this elimination, the organism does not suffer from the absorption of the poison. But when a lesion develops in the mucosa of the genitourinary apparatus, the rheumatic poison shows its effect on the individual because it is absorbed and enters the blood. If the epithelium of the urinary passages which serves as a defense to the organism against urinary poison is eroded, the way is opened for absorption of the poison and autointoxication follows. The writer calls attention to the fact that various affections of the genitourinary system, such as ureteritis and cystitis, are the forerunners of rheumatism. This new conception of the disease opens up fresh lines of therapy. The lost epithelium must be renewed and the elimination of the toxins must be favored. The writer makes use of mild and easily digestible antiseptics that he has discovered in the resins of cubebs and juniper. In this work are cited observations of patients with rheumatism of various types treated successfully by this new method.—*La Tribune Médicale*, November 18, 1905.

Position as a Diagnostic Sign in Angina Pectoris.—Leone Minervini regards the position of the patient suffering from an attack of angina pectoris as of much importance in diagnosing the attack from asthma and cardiac diseases of a different nature, as well as from renal disease. He gives the histories of nine cases observed by him, with photographs of the positions assumed when attacked walking, sitting, or in bed, to show that there is a uniform position assumed, which is the one dictated by nature to relieve the increased arterial pressure which accompanies the attack. The position assumed by the asthmatic is bending forward, with the elbows supported. That of the angina patient is fixed with the head and body thrown backward and the arms raised. When seized while walking the patient seeks a support against a wall, or sinks into a chair. When in bed the patient sinks his head in the pillows, with the body in extension, or slight opisthotonos. Angina pectoris is a cardiac neurosis occurring in persons with high arterial tension and in arteriorscleorosis, interstitial nephritis and aortic insufficiency. In these conditions the circulation is not influenced by gravity; hyperextension is instinctive in order to produce congestion of the bulb and the neck, and thus get vasodilation to relieve the attack. The patient thus aids the effect of the medicinal vasodilators that are administered. There is a true compensatory reaction that is instinctive to the patient. This position serves to diagnosticate between asthma produced by the respiratory system, and angina, which arises from the circulatory system. In laryngeal dyspnea the patient throws himself about.—*La Riforma Medica*, November 18 and 25, 1905.

Passage of Anti-Bodies into the Blood of Infants.—Felice la Torre experimented on 17 nurses, suckling 17 babies from one month to two years old, all healthy and in good condition. From 3,000-6,000 units of Behring's serum were injected into the women, in three injections at intervals of three days. The first blood was taken from the infant before the injections, the second, three days after the last injection. The author concludes that the passage of specific anti-bodies into the blood of the infant takes place through the means of homologous sera. Such passage takes place in very small amount: it does not vary with the age of the child: injection of ethereal sera are not devoid of bad effects on adults, because they have not the toleration of infants: owing to the small quantity of anti-bodies that pass into the system of the baby from the milk, and its slowness of passage, the gastrointestinal method of introduction has no value, either prophylactic or curative.—*Il Policlinico*, December, 1905.

Regeneration of Nerve Fibers.—Perroncito finds that the regenerative processes in several nerve fibers begin at the end of forty-eight hours after the wound, much earlier than is generally supposed. At this time there already exists a small cicatricial zone invaded by the new-formed fibers. Studying the question up to the twentieth day after the injury, the author shows that the fibers originate from the cut ones and follow the process and the method of development by which they are produced, their progress into the cicatrix and its entrance into the peripheral fragment of the nerve. He describes special formations found in the zone in which regeneration takes place, represented by terminal buttons of fibrillar nerve structure, in relation with nerve fibers and with special cellular elements. In the peripheral segment of the nerve the medullated nerve fibers do not degenerate, and terminate at the central extremity with characteristic swellings, of granular masses of unknown significance, related to certain nuclei. These formations exist until the entrance of the nerve fibrillæ from the central portion.—*La Riforma Medica*, November 25, 1905.

Antagonistic Action of Normal and Therapeutic Serum Against the Development of the Tubercle Bacilli.—F. Figari and G. Porrini, after experiments on the antagonistic action of serums against the development of the tubercle bacillus, gives us these conclusions: 1. Preventive injections of physiological serum and of horse serum are incapable of preventing the development of the tubercle bacillus when injected into the peritoneum. Injections of antitoxic serum help the localization and impede infection. Injections of goat serum from animals treated with aqueous extract of living bacilli render guinea-pigs refractory to tubercular infection. 2. Normal and physiological serum mixed with living bacilli exert no action on the development of the bacilli. Antitoxic serum emulsified with living and virulent bacilli circumscribe their action and oppose a barrier to the invasion of the bacilli. 3. *In vitro* normal serum does not inhibit the development of bacilli. Antitoxic serum does inhibit their growth.—*Annali dell' Istituto Maragliano*, August, 1905.

Bactericidal Power of the Organism.—G. Saccone tells us that there is a natural power of inherent in the human organism that destroys bacteria when they enter the body. He has made experiments on rabbits, by injections of the vegetative form of the bacillus sottilis, and also by injecting its spores into the peritoneum, pleura, blood, and under the skin, to ascertain the length of time it takes to destroy a given quantity of the culture or its spores. The author sums up his conclusions thus: 1. The spores and bacilli are more quickly destroyed when injected into the circulation; it takes a longer time for them to disappear from the peritoneum and pleura; the skin destroys them most slowly. 2. The bacilli are more quickly destroyed than the spores, the bacilli disappearing in 2 to 3 hours, the spores in 27 to 28 hours. 3. The spores are transported to some distance from the site of injection and are destroyed in the hematopoietic organs, while the bacilli are destroyed locally. 4. The bacilli and spores are destroyed extracellularly, being reduced to granules except when injected under the skin, when some are taken up by the cells. 5. The organism reacts locally by the appearance of leucocytes of the polynuclear variety; even the blood shows a hyperleucocytosis when injections have been made directly into it, and when the spores have been introduced the hematopoietic organs also show a reaction marked by hyperemia and efflux of leucocytes.—*Annali di Medicina Navale*, October, 1905.

Near the Danger Line.—In an account of the Deptford tragedy a slip is made by a contemporary. It explains that "three doctors are in attendance, but the woman is not yet dead." Not long ago a daily nearly got into a libel action by saying that a patient was "no longer in danger, though Dr. X. is still visiting him."—*London Globe.*

Book Reviews.

A Text-Book of Practical Therapeutics with especial reference to the Application of Remedial Measures to Disease to their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; one-time Clinical Professor of Diseases of Children in the University of Pennsylvania; Laureate of the Royal Academy of Medicine in Belgium, of the Medical Society of London; Member of the Committee of Revision of the United States Pharmacopœia of 1905. Eleventh edition, enlarged, thoroughly revised and largely rewritten. Illustrated with 113 engravings and four colored plates. Philadelphia and New York: Lea Brothers & Co., 1905.

The chief new features in the eleventh edition of this well-known work are the changes and additions rendered necessary by the recent appearance of the new United States Pharmacopœia. This means that the whole book has been carefully revised, new preparations and doses have been added, and some old ones have been omitted. Among the additions we note a comparative table showing the strength of the more important pharmacopœial preparations in the preceding and in the present pharmacopœia; also a list of the changes in the strength of the official tinctures in the U.S.P. of 1905. The most valuable sections of the book are those dealing with drugs and the treatment of diseases.

The success and popularity of this work are due to its sterling merit and to the author's skill in supplying the general practitioner with just the right kind of information on the best methods of treating disease. The book pays no attention to numberless preparations that flood the market; nor does it notice every line of treatment that has been suggested. But it explains fully the recognized modes of procedure, and not only states what measures should be adopted, but also tells how and when to employ them, and when not to employ them. We have noticed only one weak spot in the book, and that is the attempt to compress the Latin of prescription writing into the brief space of a page and a half; this should be expanded or omitted.

A Compend of Histology. By Henry Erdmann Radasch, M.S., M.D., Associate in Histology and Embryology in the Jefferson Medical College; formerly Fellow in Chemistry in the University of Iowa; formerly Lecturer on Chemistry and Director of the Chemical Laboratories in the College of Physicians and Surgeons, Keokuk, Iowa, with 98 illustrations. Philadelphia: P. Blakiston's Son & Co., 1905.

This compend begins with a chapter on technique, and then takes up the histology of the cell, and the various tissues and organs of the body, and concludes with chapters on the special senses. The book is well written, accurate, sufficiently illustrated, and will serve the purpose for which it was published.

Clinical Treatises on the Pathology and Theriphy of Disorders of Metabolism and Nutrition. By Professor Dr. Carl von Noorden, Physician in chief to the City Hospital, Frankfurt a.M. Authorized American Translation. Edited by Boardman Reed, M.D., Late Professor of Diseases or the Gastrointestinal Tract, Hygiene, and Climatology, Department of Medicine, Temple College, etc. Translated by Florence Buchanan, D.Sc., and I. Walker Hall, M.D. Part VII. Diabetes Mellitus, its Pathological Chemistry and Treatment. Lectures delivered in the University and Bellevue Hospital Medical College, New York. Herter Lectureship Foundation. New York: E. B. Treat and Company, 1905.

The well-known part that Prof. von Noorden has played in bringing the knowledge of diabetes out of its formerly chaotic state into what, if not complete understanding, is now at least orderly ignorance, entitles the present volume to careful study on the part of all those interested in this mysterious disease. The reader's expectations will not be disappointed, for these 200 pages of large print contain an admirably concise exposition of what is known and what is yet to be learned concerning diabetes mellitus, expressed in simple and practical fashion so as to be of the greatest possible service to the practitioner. The first eighty pages are concerned with the problems involved in the question of the various forms of glycosuria; a discussion of the chemistry and significance of the acetone bodies occupies the next twenty pages; and the remainder of the volume is almost evenly divided between the section on the general course and prognosis of the disease and that on its treatment. The latter is perhaps the portion of the volume that will prove most interesting to the practitioner, and it embodies in little space the modern doctrine of the management of diabetics. The necessity for radical individualization in each case is insisted on, and the author's plan of determining the patient's carbohydrate tolerance is explained. Dr. von Noorden lays rather more stress on keeping the glycosuria down to a minimum than has been the custom with some writers, and he states that the appearance of a small amount of acetone or diacetic acid in the urine is not necessarily the signal for a panic-stricken return to a carbohydrate diet it is usually supposed to be. Under suitable conditions, if the rigid diet is persisted in, the acetone bodies will disappear again, and the patient will be left much better off than before. Of drugs he gives opium and the salicylates first place, and also considers the coaltar products and jumbul of use. The oatmeal cure is highly praised. A series of analytical food tables closes what is an extremely useful and practical book.

Indigestion. The Diagnosis and Treatment of the Functional Derangements of the Stomach. By George Herschell, M.D. Chicago: W. T. Reener & Co., 1905.

This is the third edition of Herschell's well-known work. It well serves the purpose of guiding the physician in the management of the functional derangements of digestion, which form a large part of his daily work. Good rules are laid down in this book for the hygiene of nutrition, and a warning is given regarding the use of alcohol, tobacco, and tea. Recipes are also given for the preparation of the different foods for the dyspeptic. The book deserves to be well recommended.

The Diagnosis of Tuberculosis of the Lung. With Special Reference to the Early Stages. By Dr. K. Turban of Davos, Translated by Egbert C. Morland, M.D., and with an Introduction by Sir Dyce Duckworth, M.D., LL.D., F.R.C.P. New York: William Wood & Company, 1905.

In placing before English readers three sections of Dr. Turban's valuable work on the diagnosis of tuberculosis, Doctor Morland has rendered no inconsiderable service to English readers. Turban's work was originally published in 1899, but the present translation has been carefully edited by the author, and pertinent annotations have been made by the translator, making the little work thoroughly up-to-date and succinct.

The first section bears entirely upon the diagnosis of early tuberculosis of the lung, and, while containing little that is actually new, brings into compact form all available data on the subject. In a forcible way it emphasizes points of diagnosis which, while probably at some time learned by every medical student, are certainly in the majority of cases forgotten. A familiarity on the part of the general practitioner with this section of Turban's work would undoubtedly make for much earlier and more exact diagnosis in tuberculosis.

The second section takes up the question of classification and nomenclature, upon which there has always been and still remains an unfortunate confusion of ideas. The schema for tabulation of individual cases suggested in this section and adopted recently by the International Conference of Tuberculosis held in Copenhagen and later by the American National Association for the Prevention and Study of Tuberculosis, is, while excellent in its way, more elaborate and consequently confusing than would be practicable for ordinary use outside of a sanatorium.

The third section is devoted to physical examination of the lung and contains many excellent suggestions, notwithstanding that the nomenclature is somewhat confusing. As remarked by Sir Dyce Duckworth in the introduction, Turban shows an evident unfamiliarity with English and American writers on the subject. Otherwise the references and the index of authors and subjects make up by no means the least valuable portion of the work.

Traité de Pathologie Interne. Par G. Lemoine, Professeur de Clinique Médicale à la Faculté de Médecine et de Pharmacie de Lille, etc. Two volumes. Paris: Vigot Frères, 1905.

The chief criticism which must be recorded against this book is the extreme scantiness with which the subject of treatment is considered. The title "Pathologie Interne" stands for what we classify under "Practice of Medicine," and the book aims to cover a field similar to that taken up by our own text-books of moderate size. Etiology, pathology, and symptoms are treated fairly completely, while diagnosis, and, as has been said, treatment, receive but slight attention. Thus the treatment of acute meningitis is dismissed in a few lines; uremia is accorded exactly ten lines; in acute articular rheumatism twenty lines are given to describe the treatment of this common affection for which so much can be done by a skilful physician. A little over half a page is devoted to the treatment of pneumonia. The book in other respects is accurate and thoroughly modern, and owing to its elementary character and its simple diction is to be recommended to American physicians who wish to become familiar with medical French.

Society Reports.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, Held in Kansas City, Mo., December 28 and 29, 1905.

(*Concluded from page 122.*)

The Effects of Osmic Acid Injections.—Dr. Joseph Rilus Eastman of Indianapolis said the injection of ten drops of osmic acid in a two-per cent. solution into sensory nerve trunks was safe. The likelihood of irritation of the kidney, however, should not be forgotten. Injections into the inferior dental or other nerves should not be made through the mouth, since infection of the wound and necrosis might result with consequent failure in the action of the acid. Immediate relief should not always be expected, notwithstanding the patients of Bennett and Murphy were all immediately relieved. No one of the writer's patients, even in those cases in which the acid was accurately injected into the nerve trunks and into the perineural fat, was promptly cured, relief coming only after one or two weeks. The observations on this point of Wright, who had a large experience with osmic injections, corresponded to those of the writer. There was very little doubt that the stretching of the nerve trunk necessarily incident to the injection was productive of good, supplementing, as it did, the action of the acid. There was no good reason why the stretching should intentionally be avoided, except perhaps for experimentation. In the case of small nerves, it would be found exceedingly difficult to inject directly into the nerve trunk, that is, the needle point would pass to the distal side of the thread-like nerve, or perhaps not enter the nerve substance at all, or, in spite of the utmost care, the fibers might be so teased apart by the needle point that the fluid would simply be spilt about the nerve. In such a case, in order to bring the acid in contact with all of the fibers, it was wise to clip the nerve so that the end might be bathed in the fluids. The effect of manipulation of the nerve, as by stretching, had not as yet been eliminated as a possible aid to the chemical action of osmic acid; therefore, a general anesthetic should be administered so that neurectasy or section of the nerve might be practised, if desired. The writer's experiments had shown no other changes in the nerve tissues as the result of injections of osmic acid than the disintegration of fat and oil globules in the perineural space and in the white matter of Schwann, such white matter of Schwann being simply fatty matter in a fluid state, insulating and protecting the essential part of the nerve. The degenerations appearing in the nerve itself were only such as might be fairly attributed to nutritional changes and exposure, the indirect result of the selective action of osmic acid in destroying fat. There was no reason why this fat should not be restored and the nerve again become capable of transmitting sensation, and the neuralgia return after injection of osmic acid. The injection of osmic acid for the relief of tic douloureux was quite justifiable even if it should become necessary to repeat the injections at intervals of a few months, particularly in view of the unfavorable results of the so-called radical operation. The solution of osmic acid should be made fresh for each operation, as deterioration was rapid.

Twentieth Century Surgical Problems.—This was the title of the President's address, which was delivered by Dr. H. D. Niles of Salt Lake City, Utah. No one who had kept in touch with our recent experiences in the surgery of the brain, lungs, pancreas, spleen, peritoneum, and other organs, he said, could escape the conviction that with a clear idea of the physiology of these parts the result of surgical endeavors would be infinitely more satisfactory than we were able to obtain with our present knowledge. In brain surgery our many failures could not be charged to any lack of operative skill, but to inability to locate accurately the exact lesion early enough to insure its safe removal or correction. The same might be said of the morbid conditions of the spleen, pancreas, and in a degree of the stomach. Until we were better informed by the physiologist of the normal functions of these organs, we could not hope always to differentiate between the normal and the abnormal. The evidence that pointed to the one and excluded the other could come to us only through concentrated specialized efforts which the average surgeon was technically unfitted to undertake. The line that divided surgical diseases from non-surgical was still somewhat vague and indistinct, and one of the most common sources of error in treatment arose from the fact that we were often in doubt as to when and how far we might safely trust to the reparative resources of nature, and under what conditions prompt operative interference should be resorted to. Thus far success in surgery had been measured largely by the ability to cope with advanced disease after it had become an immediate menace to life and health. But the time could not be far distant when the importance of recognizing the antecedent pathology of cancer, ulcer, surgical kidney, pus tubes, prostatitis, and many other grave lesions, would be impressed upon the profession, and the public would be educated to choose preventive rather than last-resort surgery. If we were ever to solve the problems that baffled our endeavors to-day, and place surgery upon a much higher plane than it now occupies, he thought scientific workers must become more practical; practical workers must become more scientific, and physicians and surgeons must become more nearly united in their ideas of pathology and treatment. All this could be accomplished only by an organized movement tending to bring all workers into closer touch and sympathy with one another.

Chylous Cysts of the Mesentery.—Dr. Miles F. Porter of Fort Wayne, Ind., said that a study of the literature together with the reports of twenty cases, including one of his own, formed the basis of the paper. The literature was very meager; the best of it was to be found in current publications. The history was bound with that of mesenteric cysts in general. Cysts of the mesentery were first classified by Portal, in 1803. Killian reported the first cyst treated surgically, but Bramann's was the first one operated. Carson was probably the first in America to report a case of chylous cyst treated surgically. These cysts were very rare, more so than were serous cysts. The origin of chyle cysts must be regarded as manifold. They might be single or multiple, unilocular or multilocular, and multiple cysts might become multilocular single cysts and later unilocular by pressure absorption. There was nothing distinctive in chylous cysts save their contents and location. An exact diagnosis was neither possible nor necessary. A centrally located movable tumor crossed by bows would be almost diagnostic of mesenteric cyst. Puncture for diagnostic purposes was condemned. Belly pain was a common symptom, and recurrent attacks of pain accompanied by vomiting and other symptoms of bowel obstruction were very significant. Chronic increasing constipation was a frequent symptom. A history of trauma was common. The treatment was surgical and the technique would depend on the findings in each case. The fear of permanent chylous fistula in cases treated by drainage was unfounded.

Treatment of General Peritonitis.—Dr. Donald Macrae, Jr., of Council Bluffs, Iowa, read a paper on this subject, in which he advocated the Fowler position in all suspected peritoneal infections; also the institution of free drainage at the time of the operation by means of large-sized rubber tubing only. Drainage of the most dependent part of the pelvic peritoneal pocket was imperative. He urged the removal of the primary pathological factors when possible, and spoke against the use of gauze and flushing. He said the drainage tubes should be aspirated at frequent intervals.

Appendicitis.—Dr. I. B. Perkins of Denver read a paper in which he gave further reports from physicians who had suffered from this disease. He discussed the diagnosis of chronic appendicitis and the prodromal stage in acute cases.

He expressed himself in favor of early operation in all cases. The interval cases should be operated upon. Fatalities were usually chargeable to delay. The management of delayed cases was discussed; also the attitude of the profession and of the public toward operation.

Treatment of Appendicitis.—Dr. O. Beverly Campbell of St. Joseph, Mo., followed with a paper on this subject, in which he drew the following conclusions: (1) In incipient appendicitis, until the patient was placed in the hands of the surgeon, all food and drink should be withheld, and the patient nourished per rectum. (2) Every patient should be advised of the advantages of an early operation. (3) Radical work, that is, the removal of the appendix, or the closure of an opening in the cecum, should be made, in abscess cases, when it could be done without additional risk to the life of the patient. (4) The practice of merely draining in every abscess case should be condemned as non-surgical. (5) Operation during a progressive diffuse peritonitis was attended with a higher mortality than the method of procedure recommended by the writer. (6) If the internist would direct his efforts in the treatment of appendicitis toward the protection of the peritoneum until he could transfer his case to the surgeon, the mortality in this disease would be greatly lessened. (7) The adoption of the more rational method of dealing with diffuse peritonitis would convert a large percentage of these cases into circumscribed peritonitis, when they could be rightly classed as large abscess cases, having the same mortality.

Treatment of Appendicitis in its Various Stages as it Comes to the Surgeon.—Dr. C. H. Wallace of St. Joseph, Mo., contributed a paper with this title, and summarized by saying that (1) appendicitis was always a surgical disease; (2) every patient should have and was entitled to operative relief within the first forty-eight hours; (3) the rapidly progressing stage was the stage of applicability of the Ochsner treatment, which was attended by the lowest mortality; (4) cases coming to the surgeon with evidence of gradually subsiding symptoms should be deferred for a more favorable operative period; (5) every interval or chronic case should be urged to the operating table; (6) abscess cases should be given two safe rather than one hazardous operation; (7) in cases of diffuse peritonitis all dependent cavaties in which there was accumulation of fluid should be carefully incised and drained, but not flushed, and secondarily the offending organ should be incised.

Dr. Van Buren Knott of Sioux City, Iowa, followed with a paper in which he set forth his ideas at length concerning the management of appendicitis, his conclusion being based upon one thousand operations.

Extrauterine Pregnancy.—Dr. J. W. Andrews of Mankato, Minn., read a paper on this subject, in which he reported having operated upon a woman who was ten weeks pregnant; the sac ruptured, and the operation was delayed thirty-six hours. The case was reported in detail. The steps of the operation he performed were not very different from those of an ordinary laparotomy. He counseled accuracy and rapidity in operating in these cases, and emphasized the necessity in many cases of thrusting the hand down through the pool of blood and securing the blood-vessels before attempting to mop out or otherwise remove the blood and blood clots. He thought drainage, as a rule, should be employed after laparotomy for extrauterine pregnancy.

Post-climacteric Hemorrhages; their Cause and Treatment.—Dr. A. L. Wright of Carroll, Iowa, called attention to the frequency of occurrence of hemorrhage after the establishment of the menopause. He spoke of how often it was passed over slightingly, with the thought that it was incident to the woman's age until grave complications were at hand, or the true cause—carcinoma in most instances—was so far advanced as to place the patient beyond the pale of surgical interference. He called attention to the several changes that take place in the uterus at this time, and cause hemorrhage. The trend of the argument was to recognize early the pathological changes taking place in the uterus, and if in doubt to remove the organ rather than take chances that would invariably result in death.

Gunshot Injuries of the Stomach.—Dr. J. N. Warren of Sioux City, Iowa, gave the history and analysis of 144 cases of gunshot injury of the stomach. He spoke of the character and location of the lesion in uncomplicated cases in determining the prognosis. In operative cases the time elapsing from the time of injury and the operation showed that the earlier the operation was performed, the more favorable was the result. In complicated cases the number of lesions found and viscera injured added to the gravity of the case. He spoke of the results in the cases that were not operated upon. He said the presence of food in the stomach with the discharge of the same into the abdominal cavity added to the danger of general peritonitis, either with or without operation.

The Symptoms of Spinal Disease.—Dr. S. C. Baldwin of Salt Lake City called attention particularly to the early symptoms of spinal disease in order that suffering might be earlier relieved and deformity avoided. The general or more common symptoms, and then such symptoms as rigidity, gait, pain, paralysis, abscess, etc., were considered. The symptoms differed when different regions of the spine were involved. For instance in the cervical region the first symptom noticed might be pain in the head, and, according to Whitman, earache might be a symptom of cervical disease. Before there was any sign of deformity the patient might complain of difficulty in swallowing and even in breathing. In the cervical region there might be and often was grunting respiration. Such general symptoms as weakness, loss of appetite, loss of weight, rigidity, and general change of gait in walking, were apparent in disease of all parts of the spine. The writer had seen a number of case of Pott's disease developing in patients over forty years of age, and two cases which he recalled occurred after the age of fifty. Weakness might show itself in a general drooping of the trunk, an unsteady and stumbling gait, and exhaustion requiring rest after the slightest exertion.

Drainage of the Male Pelvis.—Dr. William Jepson of Sioux City, Iowa, read a paper on this subject, in which he pointed out the indications for drainage of the male pelvis, and spoke of the obstacles in the way of instituting such drainage as compared with the female pelvis. He described a method of instituting drainage of the male pelvis, and reported the results he obtained in nineteen cases. In all of these cases there existed a diffuse pelvic peritonitis, with accumulations of purulent fluid often elevating the distended bowel high into the abdomen, and in two cases ascending between the mesentery and descending colon and overflowing from the pelvis into the left subrenal fossa, which was also opened and drained. In all but five cases free pus existed in the space to the outer side of the ascending colon, which in each instance was drained through the ileocostal space. In one case the distention of the paretic bowel necessitated opening and the establishment of an artificial anus. Three of the patients thus treated had died, one after an illness of nearly five months, during which time death on three or four occasions was threatened by intestinal obstruction, while a number of abscesses followed in the abdominal wall. Death resulted from exhaustion incident to the prolonged suppuration. In the second fatal case death took place ten days after the operation, due to toxemia.

Gastric Dyspepsias Amenable to Surgical Treatment.—Dr. William E. Ground of Superior, Wis., said it was now recognized that many forms of digestive disturbance were dependent upon conditions entirely outside the stomach, and involved this organ either by direct extension of the pathological process, or indirectly by nerve influence. Among these might be mentioned inflammatory or irritative conditions in the biliary apparatus, pancreas, duodenum, or appendix, and adhesions of the stomach to the surrounding viscera. Within the stomach conditions remediable by

surgical means were perforative and non-perforative gastric ulcer, chronic gastric ulcer, hemorrhage, pyloric obstruction, gastric dilatation with stasis, hyperchlorhydria, and cancer. The question of operative interference in some of these conditions was still in dispute, but the wisdom of referring cases of perforating gastric ulcer with or without adhesions, cicatricial stenosis of the pylorus, adhesions of the stomach to any of the surrounding structures, and perhaps chronic gastric ulcer to the surgeon was now pretty firmly settled. Closely associated with ulcer was the sequence of cicatrization and contraction, and when this process involved the pylorus, it led to stenosis and obstruction, and later, if this were prolonged, gastric dilatation and atony would result. Whether the pylorus was obstructed by spasm due to the presence of the ulcer or to hyperchlorhydria, which almost always accompanied non-malignant ulcer, or by the cicatricial contraction following the healing of an ulcer, the pylorus was rendered incapable of readily transmitting its contents, the stomach became distended, and its muscular walls weakened, leading ultimately to permanent atonia gastrica. Stomach dilatation might be due to atony alone, but it was much more frequently due to mechanical obstruction at the pylorus. In this condition of gastric stasis, food might remain in the stomach a day or more, whereas, as Riegel said, it should empty itself within seven hours at the most. In fairly advanced cases, when the obstruction had given rise to a compensatory hypertrophy of the stomach, the peristaltic movements might be seen and felt through the abdominal walls, usually accompanied by pain and vomiting. Later, when the stomach began to dilate and assumed a more passive state, the patient complained of fullness and epigastric pains after meals. Fermentation took place, causing eructations and heartburn, and frequently vomiting. Vomiting was a most prominent symptom when gastrectasia and fermentation were well-established. When this sequence of events was set up, there was but one remedy, and that was surgical intervention. The curative effects of operation could not be attributed to drainage of the stomach alone or to short circuiting of the food current, as was so often contended, for unless the pylorus was closed food would pass through it. The explanation the writer had arrived at was to the effect that the cutting of the circular fibers in the pyloric end of the stomach did away, to a considerable extent with the muscular unrest accompanying gastric digestion, especially when ulceration was present. To the author's way of thinking, a gastroenterostomy acted much the same as cutting the fibers of the sphincter in anal fissure. In this latter condition the feces continued to pass over the ulcer, but the paralyzed sphincter prevented friction, and it healed readily.

Restoration of the Perineum.—Dr. Howard Hill of Kansas City, Mo., said that the perineum was divided into three layers: A superficial sphincter layer; a middle ligamentous layer; and a deep layer consisting of the levator ani muscle and its fascia. An ideal operation consisted in restoring the different planes of tissue to their normal position. It mattered little which incision was used to expose the structures mentioned, but he had used a transverse incision which consisted in raising a flap of the posterior vaginal wall and had done the operation by using three layers of sutures. The first included the levator ani and its fascia, reattaching that portion of the muscle which helped to form the perineal center in front of the rectum. Next he identified and sutured the triangular ligament and attached the sphincter ani to the perineal center. A single suture was used for the bulbocavernosus.

Gluteal Cavernous Angioma.—Dr. J. E. Summers, Jr., of Omaha reported this case and said that cavernous angiomata of voluntary muscles were comparatively rare, and in the case of this report the size of the growth was exceptional. It was excised while the circulation was controlled by direct digital pressure of the common iliac artery through an abdominal incision.

Preoperative Thrombi in the Region of the Field of Operation as a Cause of Postoperative Complications and Death.—Dr. A. W. Abbott of Minneapolis said that thrombosis, especially of the veins, was often to be found, if looked for, in the vicinity of the field of operation. It might result from the pressure of a tumor, from cancer or tuberculosis, etc., or might be the result of adjacent inflammation of traumatism. Usually no attention was paid to the condition. Thrombosis in the field of operation increased the danger. Were there any practical methods for avoiding these dangers? The author believed that many cases of fatal sepsis, pulmonary embolism, and particularly many cases of so-called ether pneumonia that were otherwise inexplicable could be rightly ascribed to the infection of a clotted vein or its disturbance by rough handling, or both; so also pyemia, abscess of the liver, osteomyelitis, and other evidences of metastatic infection. Aural surgeons had formulated a definite operation for thrombi of the lateral and sigmoid sinuses, namely, ligation of the internal jugular vein and clearance and drainage of the sinus. This was an eminently successful operation considering the desperate condition which called for the interference, and, so far as the speaker knew, was the only established operation for thrombosis complicating operation. He thought a similar course should be pursued in all operations complicated by thrombosis.

Conservatism in Postoperative Treatment.—Dr. S. C. Beede of David City, Neb., referred to the increasing tendency among surgeons to hasten their patients out of bed and hospital after grave operations. His attention was first directed to this matter when members of the laity began to mention frequently the shortness of time patients were detained by this or that surgeon. Nurses would speak with pride of the fact that their favorite operator would send a hernia or an appendix case home in two weeks. Then another one, not to be outdone, made it twelve days instead of fourteen. Another, to make a better showing than his competitor, shortened the period of disability to ten days, only to be met by a more daring rival with an eight day period for a clean abdominal section. This was not the limit of extravagance in this strife to make it appear easy to be operated upon, but patients after extensive abdominal work had been carried out of bed and placed in a chair on the third day, and allowed to walk about the room on the fourth. It was creditable that the many weeks in bed once necessary could now be avoided by a more perfect technique, especially in the matters of more perfect control of hemorrhage, aseptic precautions, discarding irritating antiseptics, avoiding unnecessary traumatism, and care in suturing and suture tension. These gave the best possible opportunities for nature to do her reparative work, but nature would work only so fast, and he thought there was a limit in time beyond which it was unsafe to urge her. His contention was that this limit had been overstepped, and that the perfect result which should be the aim in every case was thereby marred.

Officers.—The following officers were elected for the ensuing year: *President,* Dr. Malcolm L. Harris of Chicago; *Vice-Presidents,* Drs. A. L. Wright of Carroll, Iowa, and C. Lester Hall of Kansas City, Mo.; *Secretary-Treasurer,* Dr. Arthur T. Mann of Minneapolis.

Salt Lake City was selected as the place for holding the next annual meeting.

For the Control of Nasal Hemorrhage tampons can be readily prepared as follows: A layer of cotton is wound around a penholder or similar object until the desired thickness is obtained and then withdrawn. The cotton cylinder is then moistened, squeezed dry and inserted into the nasal cavity. If the projecting end of the tampon is now moistened it will swell up and thus produce sufficient compression.—*International Journal of Surgery.*

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, December 5, 1905.

THE PRESIDENT, DR. JOSEPH FRAENKEL, IN THE CHAIR.

A Case of Blindness, with Astereognosis.—Dr. J. F. TERRIBERRY presented a patient, a man, 55 years old, native of Canada, married, and of intellectual pursuits. His father met a violent death at the age of 30; his mother died at 70 of "dropsy." The patient stated that he came from a healthy stock, with no hereditary entailments. He was strong and vigorous in his early life, and continued to enjoy good health up to the time of his present trouble. For a period of about twelve years, after the age of 40, he used alcoholics freely but not steadily, and was exposed to venereal disease. He admitted having had gonorrhea and a soft chancre, but denied syphilis. He denied having been injured, and gave no history of malaria or rheumatism. He was greatly disturbed by business misfortunes and reverses for some years prior to his present illness. Between three and four years ago, while his general health was apparently good, he became aware of a slight indistinctness or blurring of his vision, both eyes, seemingly, being equally affected. His vision slowly but steadily failed for a year and a half to two years, when it was reduced to its present condition of light form perception only. This failure of sight had been unaccompanied by symptoms of any kind until about one year ago; he had had no headache, no dizziness, nausea, or vomiting, no phenomena of irritation of the visual tracts. About a year ago his wife noticed some awkwardness in his movements while dressing, and this had gradually become more marked, particularly on the left side. Upon examination, the patient presented a good general appearance. He was well nourished, and his complexion was good. His face had the blank expression of a sightless person. The left shoulder dropped a little. The left hand, in repose, gave an expression of weakness quite evident when contrasted with the right. He was able to stand and walk well. There was no tremor of the hands, tongue, or facial muscles. The left knee-jerk was normal; the right was present, but less active. The Achilles jerks were obtained, but their action was slight. Stroking the soles of the feet caused slight flexion of all the toes excepting the great toe, which remained motionless. No Babinsky sign. The tendon reflexes of the upper extremities were normal. A chain reflex was obtained. Tapping the branches of the facial nerve elicited no response. The pupils were regularly and equally dilated to double normal size. Light reflex was present, but reduced, and attempts at psychic accommodation by imagining that he was looking at near and remote objects caused no action in the pupils. The senses of smell and taste were apparently normal, a watch was heard at the normal distance. The patient was now handed a dynamometer and requested to grip it with all his strength, when it at once became apparent from the awkwardness with which he handled the instrument that there was some difficulty with the stereognostic perception. Placing the instrument properly in his grasp, he recorded with the right hand, 18, 32, and 25; with the left hand, 25, 25, and 22. The patient was requested to raise his arms above his head: this he did hesitatingly, raising the left arm part way only. He was asked to execute a number of arm movements, and was found utterly unable to do so. A number of different objects were placed in his hands, none of which he could name properly. His arms were placed in various positions, and he was unable to say what the positions were. In all of these movements, the left side was less competent if possible than the right. When asked to stand on the right foot, he stood on the left, and *vice versa*, or, apparently guessed at it. The muscle sense in the arms was absent and was very poor in the legs below the knees. When asked to cross his legs, he did so poorly. The sense of touch was good in the upper and lower extremities, and the same was true of pain and temperature perceptions. There was, however, som delay in recording these impressions. The localizing sense was *nil*. There was no ataxia of the upper or lower extremities. The bladder and rectal functions were normal. There was no change in his disposition. Attempts at determining the condition of the visual memories were not conclusive, but were suggestive of partial failure. When asked if he recalled the appearance of his friends, he replied that he could recall the sound of their voices much better than their appearance, and he believed that his memory for things seen was not good. The ophthalmoscope revealed a normal looking fundus. The urine was normal; the blood examination was negative.

Dr. DAVID WEBSTER who had made repeated examinations of the eyes of the patient said there was nothing in the appearance of the optic nerves that would account for the loss of vision. The patient still had some vision, and it was apparently growing no worse. He was unable to count fingers, but distinguished objects that were placed before his face, and was able to exercise regularly in the corridor of the hospital without coming in contact with objects. The astereognosis, which was first noticed by Dr. Terriberry, was a very interesting symptom. Any piece of paper that was placed in the patient's hand he would simply recognize as money. His symptoms pointed to a cortical degeneration, which had perhaps invaded the visual centers. The case might be put down as one of visual astereognosis.

Dr. WILLIAM M. LESZYNSKY said he had had the opportunity of examining the patient shown by Dr. Terriberry, and could corroborate all that had been said in regard to the symptoms. An interesting question to decide was whether the man's blindness was due to a lesion of the optic centers or to one anterior to the corpora quadrigemina. This could not be satisfactorily determined from a study of the reaction of the pupils, as atropine had been instiled daily. The speaker said he was inclined to the diagnosis of diffuse cortical degeneration involving the parietal and occipital areas, this being secondary to arterial changes.

Dr. TERRIBERRY in closing, said the duration of the man's illness was about four years, during which time there was a gradually increasing loss of sight. No other symptoms were noticed until a year ago. While the diagnosis was somewhat in doubt, the case was probably one of cortical degeneration. The etiological factor for this had not been made out. The man had used alcohol, but not to excess; he had never been injured; he denies having had syphilis. The change apparently began in the occipital region and extended forward toward the motor area, a little farther on the right side than on the left.

Osteoma of the Spine in the Cauda Equina Region.—Drs. MAX MAILHOUSE and WILLIAM F. VERDI of New Haven, Conn., reported the case of a man, 44 years old, a widower. His family history was unimportant. He denied all venereal disease, and had two healthy, grown-up children. For one year prior to the onset of his symptoms he had smoked and drank to excess. Early in the summer of 1905, he had first noted increased sexual desire, at times going to the extent of four or five sexual acts daily. He consulted Dr. Verdi on account of pain in the hypogastric region coming on in paroxysms, increasing in severity and frequency. Subsequently he had severe pain radiating from the suprapubic region to the back, at about the second lumbar vertebra, a little to the left. Later on the pain extended to the upper testicles and the upper and inner part of the thighs. In addition to his spinal symptoms, the patient had noticed in August that his eyes began to ache, and early in October he observed that the vision in his left eye was failing. On October 17 he consulted Dr. A. N. Alling, who found a retrobulbar neuritis, as evidenced by a central scotoma, the disk appearing normal. When Dr. Mailhouse first saw the patient, on

November 1, 1905, he obtained the same history as did Dr. Verdi. There was no spinal tenderness, and nothing visible on the back. There was no anesthesia nor analgesia on the trunk, legs, buttocks, genitals, or perineum; no paralysis; no contractures. The patient was able to stand on either leg. The knee-jerks were active, but there was no ankle-clonus nor Babinsky sign. The plantar reflexes were extremely lively, and the tactile sense very acute. Kernig's sign was marked. The general musculature was flabby, but there was no localized atrophy; no special idio-muscular contractility. No vesical symptoms were present. On November 12, there was observed some weakness of the left internal rectus, as evidenced by a deviation of the left eye.

A diagnosis was made of a tumor pressing upon the cauda equina at the level of the second lumbar spine, and, owing to the prominent irritative phenomena and the absence of motor involvement, and to the simultaneous involvement of the second and third cranial nerves, it was supposed to be a gumma. Operation was performed on November 21, by Dr. Verdi, assisted by Drs. Wm. H. Carmalt and L. W. Bacon, Jr. The spines and laminæ of the first and second lumbar vertebræ were removed, and nothing but a tense dura found. On removing the spine and upper edges of the third vertebra, however, the dura was seen to be pushed forward and compressed against the body of the bone at an acute angle, and the finger could feel a bony growth occluding the canal. The remainder of the laminæ and the tumor were then removed with the biting forceps, as the condition of the patient did not warrant a prolongation of the operation, such as the use of the saw and the removal of the tumor *en masse* would necessitate. It was estimated that the anteroposterior measurement of the tumor was about five-eighths of an inch, and its vertical measurement half an inch. Two weeks had now elapsed since the operation. The wound had healed and the patient was able to sit up and was entirely free from pain excepting that referable to the wound. The eye symptoms were reported to have progressed to the degree of some ptosis, indicating greater involvement of the third nerve. The nature of the ocular affection had not yet been determined. It apparently had no connection with the spinal lesion.

Dr. FRAENKEL said these cases of osteoma of the spine were of very rare occurrence. He recalled a case seen seven or eight years ago in which there were evidences of a progressive intraspinal lesion, which were explained at the autopsy by an osteoma of the processus odontoides atlantis.

Retropharyngeal Carcinoma, with Metastases.—Dr. B. SACHS reported this case, and showed the specimen. The patient was a man, 35 years old, who was admitted to the Mt. Sinai Hospital last summer while Dr. Hirsch was on duty. The symptoms indicated increasing intracranial pressure, with more or less somnolence, slight hemiplegia, right-sided oculomotor palsy, and a double optic neuritis. There was a large retropharyngeal mass, which was regarded as the source of his trouble, and was supposed to have perforated the base of the skull. The patient's symptoms gradually became more aggravated, headaches were intense, and multiple tumors developed in the scalp and various parts of the body. The retropharyngeal growth was rather soft to the touch, and was at first supposed to be a gumma. A section of the growth was submitted to Dr. E. Libman, of the Pathological Department of the Hospital, who, upon examination, found it to be a carcinoma. The case resulted fatally, and the skull of the patient, which was exhibited by Dr. Sachs, showed multiple perforations, indicating the sites of the metastatic cancerous growths.

A Case of Brain Tumor.—Dr. WILLIAM M. LESZYNSKY reported the case of a man, 28 years old, single, born in Russia, a photographer. He was admitted to the Lebanon Hospital on October 28, 1903, with the following history: When he was four years old he was struck on the forehead by a stone, which resulted in momentary loss of consciousness, but no further trouble followed. After this, he was always very nervous. At the age of 13 he was frightened at the sight of the killing of a mad dog, and at once became hysterical and had convulsive fits several times daily for about three weeks. Soon after his hands and feet began to shake almost constantly, and he would often fall asleep while standing, walking, or eating. He recovered from this condition at the end of two years, and came to this country at the age of 15. Since then he had often complained of heaviness in his head, and when once asleep it was very difficult to arouse him. About nine months ago he began to suffer from frequent attacks of severe general headache, preceded or accompanied by vomiting, and this had continued. About two months ago vision began to fail, and blindness soon supervened. He now complained of headache, vertigo, and general weakness, with a sensation of falling toward the right side. On admission he was unable to stand or walk without assistance. His pulse was 84, regular; temperature and respiration, normal; heart, lungs, and abdominal viscera were normal. There was no tenderness on percussion over the skull; no rigidity of the neck muscles; both pupils were equally dilated and immovable; no perception of light in either eye; ocular motility normal; bilateral papillitis of six diopters, with numerous retinal hemorrhages; smell and hearing normal; slight left facial paresis of the lower branches; the grasp was weaker on the left side, and there was slight uncertainty in distinguishing objects with the left hand. Muscular power and resistance was otherwise good in all extremities. Both knee-jerks were equally active; no clonus; the plantar, Achilles, cremasteric, and abdominal reflexes were normal. No objective sensory disturbance. Urine and blood examinations negative. The patient was delirious at times, and had occasional attacks of headache and vomiting. These symptoms were relieved by cathartics and suitable diet. He gradually became worse, and for a time the symptoms increased in intensity, and there was paralysis of the right external rectus, with irregular astereognosis, slight ataxia, and exaggerated reflexes. He was kept in bed, and, in addition to general management, iodide of potassium was administered in increasing doses, and rapid improvement in all symptoms soon followed. In February, 1904, with the exception of the blindness and beginning optic atrophy, he was apparently in perfect health and able to walk about the wards and corridors without assistance other than the guidance required by a blind man in order to avoid accidents. He was then taken to an institution for the blind, where he remained until readmitted to the Lebanon Hospital on September 23, 1904. At this time his bodily condition and general health were good. Careful and frequent examinations failed to reveal any evidence of disease of the nervous symptom, other than commencing postneuritic optic atrophy. During his three months' sojourn in the hospital, he occasionally complained of headache and vertigo. He was discharged January 1, 1905, and remained at home about six weeks, when he was again placed in an institution for the blind for about six weeks, where he became so ill that he was removed to the house of a relative. While there he had frequent attacks of severe and uncontrollable headache, with vomiting, delirium, and general convulsions, with loss of consciousness, varying in frequency from one attack every twenty-four hours to one every two hours. During the intervals he was always rational. This condition continuing for several weeks, he was removed to the Kings County Hospital, May 15, 1905. He was admitted to the service of Dr. A. C. Brush, who noted, in addition to the blindness and papillitis, "memory poor, attention and volition slow; complained of headache, and had occasional outbursts of delirium; examination otherwise negative in result. The diagnosis of cerebral tumor was made, but the growth was not localized. He remained in the same condition for ten days, and was found dead May 25, 1905." The autopsy was performed by Dr. B. Joseph, resident

pathologist, to whom the speaker was indebted for the specimen and the following notes: "Skull somewhat enlarged. Calvarium normal. Numerous erosions of the internal surface of the right side of skull. Right hemisphere about one-third larger than the left and intimately adherent to the dura. Pia mater on the right side altogether obliterated; on left side edematous. Cerebral cortex on right side thinned. Ventricular cavities contained about eight ounces of clear serous fluid. Attached to the right internal surface of the right lateral ventricle was a tumor about the size of a hen's egg, of cauliflower-like appearance, and exhibiting discrete areas of darker and lighter colors. Upon section, the tumor gave a grating sensation to the knife. The posterior fornix of the right ventricle was enlarged to about twice its normal size. The tumor, upon microscopic examination, proved to be a small, round-cell sarcoma, containing areas of calcareous deposits." This is the second case of brain tumor occupying the lateral ventricle that had come under the speaker's observation. On account of the marked and rapid improvement following the use of potassium iodide, it was thought for a time that a mistake had been made, and that the case was one of syphilitic basilar meningitis, but the autopsy proved otherwise.

Dr. Arthur C. Brush of Brooklyn, who had seen the case reported by Dr. Leszynsky, said that while the patient was under his care he had shown symptoms of a brain tumor, but at that time it would have been difficult to localize it. No history was obtainable from the patient. He was dull and apathetic, and the answers he made to questions were not to be relied upon.

Familial Multiple Sclerosis.—Dr. I. Abrahamson showed two out of three brothers who were affected with this disease. The three patients, Edward M., aged 19 years, Louis M., aged 16 years, and John M., aged 15 years, were all born in the United States, of Bohemian parentage. Both parents and two younger children were alive and well. Two children, unaffected with this disease, had died in infancy. There was no history of miscarriages. The father positively denied lues; his sister was epileptic; the mother's brother was insane. Otherwise the family history was negative.

Etiology, Prognosis, and Treatment of General Paresis.—Dr. Joseph Collins read this paper. (See page 125.)

Dr. M. Allen Starr said that from his own experience he could corroborate much that Dr. Collins had said in regard to the etiology of general paresis. A year ago Dr. Edward L. Hunt, one of his assistants at the Vanderbilt Clinic, went over the statistics of the Clinic for the past seven years and analyzed the cases of general paresis that had come under observation there. The result of his investigations corroborated, to a large extent, the statement made by Dr. Collins, and the same was true of an analysis of one hundred consecutive cases seen by Dr. Starr during the earlier years of his practice. Of those one hundred cases the histories were practically complete, the patients having died. The statistics, both from his personal and dispensary cases, agreed very closely. Over 59 per cent. were clearly, unquestionably syphilitic. Of the cases he had seen in private practice, 64 per cent. were undoubtedly syphilitic. The speaker said that he differed with the statement of certain French and German writers that all cases of general paresis and tabes were syphilitic; on the contrary, he believed that in many instances both of these affections were distinctly non-syphilitic. Many, as Dr. Collins had said, were due to trauma, and many were due to alcoholism, and a certain number could not be accounted for on any of these grounds, but were due to the wearing out of the brain tissue in connection with the stress and strain incident to the worry of an active, energetic life. Dr. Starr said that an analysis of a large number of cases of general paresis had convinced him that the early symptoms of the disease did not correspond very closely with the statements in the textbooks. In only 20 per cent. of the cases he had observed were there any mental symptoms at the outset, leaving about 80 per cent, in which the physical symptoms appeared before the mental phenomena. In the latter cases there was no exaltation; no failure of memory at the beginning. The speaker emphasized, as Dr. Collins had done, the importance of a careful physical examination in every case of so-called neurasthenia, because the early symptoms of general paresis manifested themselves in ways that would tempt one to make the diagnosis of neurasthenia if one contented himself with a superficial examination. The presence of the Argyll-Robertson pupil, a tremor of the face and tongue, marked exaggeration of the knee-jerks or their persistent absence, were significant early symptoms of general paresis. Another symptom which the speaker had found of considerable importance was what he called the reaction time of the patient. This was measured by means of the Galton instrument, which consisted of a pendulum swinging backward and forward in exactly one second. The pendulum could be immediately started and arrested by the pressure of a finger on a key. The patient sat with his finger on this key, and was instructed to press the key simultaneously with the exhibition of a light or color, or upon the striking of a bell. By this method it was a very simple matter to determine the reaction time of the patient. Dr. Starr said he had resorted to this test in many cases of neurasthenia and general paresis, and he had found that in the former condition the perception was very keen at the beginning, but gradually decreased after repeated tests, while in general paresis the perception was below the normal from the very start, and the time reaction lengthened as the disease progressed. He thought this test was of some value in differentiating between general paresis and neurasthenia. The differential diagnosis was of great importance because of the question of prognosis and treatment. It was well known that there were cases that presented all the symptoms of general paresis that were actually cases of cerebral syphilis. He recalled such a case where, after a diagnosis of general paresis, the patient recovered under antisyphilitic treatment, and was now in good health after fourteen years had elapsed. About 15 per cent. of the cases of general paresis began with the symptoms of hemiplegia; about 20 per cent. with the symptoms of neurasthenia and sleeplessness, and about 20 per cent. with some signs of exaltation. This behooved the neurologist to be very careful in his diagnosis, and in every instance the patient should be given the benefit of the doubt and put upon specific treatment.

Dr. B. Sachs said that the difficulties of the subject were largely due to the fact that although the greatest effort had been made during the past fifteen years to establish an accurate clinical picture of general paresis, the more closely the disease was studied the more we became impressed with the idea that the term, general paresis, unquestionably included a number of very divergent clinical pictures, and for that reason any statistics that were collected would naturally differ and be somewhat misleading. The speaker said he was in entire agreement with Dr. Starr that there were certain cases of cerebral syphilis or pseudoparesis which could not, at certain stages, be differentiated from genuine dementia paralytica. In discussing the question of dementia paralytica occurring late in life, Dr. Sachs said that of 283 cases seen at Bellevue in the year 1904 at least 14 per cent. occurred after the age of fifty; 4 per cent. after fifty-five, while only 0.7 per cent. occurred after the age of sixty; 72 per cent. occurred between the ages of thirty and fifty. In regard to the interval between the original syphilitic infection and the development of the first symptom of general paresis, Dr. Sachs said he could recall at least two cases in which the mental disorder was recognized within less than one year after the initial infection, and the subsequent course of events verified the diagnosis. He had seen a number of other cases in which the general paresis developed within three years after the chancre. As to the curability of the disease, the speaker had written an article some years ago in which he was very hopeful of the prognosis, especially

if the condition was recognized early. That paper was written some eight years ago, but he was now prepared to make one statement very positively. After an experience of over twenty years, during which he had observed several hundreds of cases of general paresis, he could not recall a single instance in which the patient had survived over eight years. When the diagnosis of general paresis was honestly and carefully made, the claim could not be established that the disease was curable. In spite of that fact it would be a great mistake to abandon efforts at treatment, and simply pronounce every case incurable. Mistakes in diagnosis were not infrequent, and with that possibility in mind the patient should always be given the benefit of the doubt and receive a thorough course of antisyphilitic treatment, particularly if the case was seen early. While he was far less hopeful in regard to the curability of the disease than he was eight or ten years ago, he still believed that justice to the patient demanded that antisyphilitic treatment should be given a trial. So far as the etiology of the disease was concerned, Dr. Sachs said he believed there was at least one other important etiological factor besides syphilis, and that was trauma. The same was true in reference to tabes. Syphilis, of course, was the most important factor.

Dr. Adolf Meyer said we should always be prepared to acknowledge that a diagnosis of general paresis could not be said to be absolutely certain in more than about 90 per cent. of the cases that came under observation under that name. There was a margin of about 10 per cent. where we had to depend upon the autopsy and anatomical findings, and then the question arose, what anatomical findings should we consider as being conclusive evidence of general paresis, a question which should be discussed to put the entire problem of the etiology and therapeutics of general paralysis on a safe basis. There were, of course, cases in which alcoholism was the only ascertainable etiological factor, while other cases appeared to be due to trauma. We should, however, remember how very difficult it was to absolutely exclude syphilis in a case of general paresis, and while it was not necessary nor even justifiable to proclaim, *pro publico*, that every case of tabes and general paresis must be of syphilitic origin, we could give our statistical facts as evidence in favor of our conviction, and we should with equal sincerity admit that we had no means to exclude previous syphilis positively in any case. The speaker suggested that when Dr. Starr claimed that in only 20 per cent. of his cases were early mental symptoms noted, he must have had in mind the so-called legal insanity. If we took legal insanity as a standard in psychiatry we would have a poor task in psychiatric diagnosis. As a matter of fact, we had to depend on much more subtle evidence, and we would consider above all things the nonconcern over blunders by the patient which made even slight memory defects appear as an ominous feature. These, and many changes of character and judgment need by no means reach the standards of legal insanity to become decisive factors in the diagnosis, and were certainly much more conclusive than changes of reaction time. A great difficulty was connected with our ignorance of the bearing of many relatively insignificant disorders that sometimes appeared after syphilis, such, for example, as an Argyll-Robertson pupil. He referred to cases with previous syphilis, and perhaps with one Argyll-Robertson pupil, in whom recurrent attacks of manic excitement were very difficult to interpret. With regard to the administration of antisyphilitic remedies, Dr. Meyer said we should realize that it meant hardly more than a desire to spare the patient the consequences of a possibility of error of diagnosis. It had really no other logical foundation, inasmuch as there was hardly any reason to fear that a case of cerebrospinal syphilis would become one of general paralysis on account of delay of such treatment. Probably nothing would be lost in any case if we should wait until the diagnosis became more obvious. Under all circumstances, the "result" of such treatment would be a treacherous guide in the diagnosis.

Dr. R. A. Diefendorf of Middletown, Conn., said that on account of the lateness of the hour he preferred not to read his paper on the etiology of general paresis. He wished, however, to record the fact that in his series of 164 cases, in a community one-third the population of which was rural, he had found that the prominence of the various etiological factors certainly was at variance with that brought out by some of the previous speakers. He had become convinced that excessive alcoholism was an important primary etiological factor, and in the cases he had observed it occurred in over 54 per cent. In his community the negress paretic was far in excess of the white female paretic, in the proportion of ten to one. In 5 per cent. of his cases the mental symptoms had immediately followed an injury.

Etiology of General Paresis.—Dr. M. S. Gregory read this paper which he said was based upon a fragmentary résumé of his clinical experience gained during the past four years in the psychopathic wards of Bellevue Hospital. Over 1,000 cases of general paresis had been admitted during that time. The disease had represented 13 per cent. of the total admissions into those wards, and composed 21 per cent. of the total male, and 5 per cent. of the total female insane patients. The relative proportion of the sexes suffering from general paresis had varied from year to year. In 1903 there were more than six times as many male as female paretics; in 1904, the proportion was four to one. For the three years, the average had been five men to one woman. Thus the women represented about 20 per cent. of the paretics admitted. In at least a third of the patients, the histories obtainable were for obvious reasons not so complete as might be desired; many of the patients were foreigners, without any friends, and one had to depend entirely on the history as given by the patient, who was frequently brought to the hospital following an episodic attack, and was, as a rule, in a condition of extreme mental confusion. Most of the patients admitted to the psychopathic wards at Bellevue came from the very lowest strata of society, and they, as well as their friends were usually too ignorant to give a complete history. Owing to the short time the patients remained in the hospital, the opportunities for obtaining adequate histories were necessarily limited. In view of those difficulties, therefore, the histories of 250 cases had been selected for analysis. They were those of patients admitted consecutively, and did not include those in which the defects spoken of had been marked. In the 250 cases analyzed, the age of the patients ranged from 18 to 65 years, the majority being in the fourth and fifth decades of life. Several were under 22 years, the youngest being a woman of 18 who had contracted syphilis at the age of 13. The oldest was a man of 64. Of this series, 75 per cent. of the patients were married. Almost all nationalities were represented. There were 76 native born; 70 Germans, 48 Irish, and 35 Hebrews; two were negroes and one Japanese. Laborers were naturally the most numerous. Among the better class of patients were five actors, three merchants, two physicians, and two lawyers. A family history of mental disease was obtainable in about 20 per cent. of the patients. In 12 per cent. the family history showed various disorders, such as Parkinson's disease, hysteria, epilepsy, neurasthenia, etc. In about 25 per cent. of the patients there was a distinct history of alcoholic abuse. In six cases, the intemperate use of alcohol was given as the chief cause. In 12 cases the assigned cause was traumatism to the head; in 6, overwork; in 4, grief and business worry; in 3, "stomach trouble"; in 3, rheumatism; and in one, grippe. A positive history of syphilis was obtained in 99 of the male patients; about 45 per cent. In 33 others there was a strong presumptive evidence of syphilis. In 16 cases, in which specific disease wes denied, there was a history of repeated miscarriages or sterility in the patients' wives.

In addition, several presented superficial scars and bone enlargements. Twenty-one gave a history of chancroids, or repeated urethritis. Among the female patients, a positive history of syphilis was present in six cases; 20 per cent. Two gave the history of an initial lesion, and in four the husbands admitted having infected their wives. In nine, there was a history of repeated miscarriages, with a confession on the husbands' part that they had had chancre "many years previously." Two patients had had chancroids and gonorrhea. If these incomplete histories could be regarded as indications of luetic infection, the percentage of syphilis in this series would be 80 in men, and 56 in women, the average for all being 78. In these 250 cases, the shortest period of development of paresis after the initial lesion of syphilis was 5 years; the longest, 36 years. In recapitulation it seemed that clinically speaking, three factors were necessary for the development of paresis, and they were, in the order of their importance; (1) hereditary or constitutional predisposition; (2) syphilis; and (3) an exciting cause, such as stress of life, mental or physical strain, trauma, or intoxications of various kinds. The prognosis of a true case of paresis, Dr. Gregory believed, was uniformly fatal. He was inclined to think, however, that the general tendency had been to give too gloomy a prognosis as to the rapidity of the progress of the disease, for at least some of those patients. One could never be certain as to remissions.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending January 20, 1906.

	Cases	Deaths
Measles	1487	17
Diphtheria and Croup	359	46
Scarlet Fever	237	10
Small Pox	..	..
Chicken Pox	205	..
Tuberculosis	448	159
Typhoid Fever	35	5
Cerebrospinal Meningitis	28	15
Typhus Fever	..	..
Yellow Fever	..	..
Cholera	..	..
Total	2,799	252

Leg Ulcers.—For obstinate ulcers that resist the simpler plans of treatment, H. A. Pulsford recommends Unna's zinc-gelatine dressing. This, he says, is made in the following way: Daily wet dressings of acetate of aluminium or boric acid are used until all sloughs have come away, and the floor of the ulcer is smooth and clean. Then the skin of the foot and leg is thoroughly scrubbed with hot water and tincture of green soap; after drying, alcohol is applied freely, and the skin is again washed in a solution of bichloride, 1-2000. The next step is the application to the skin immediately surrounding the ulcer, and to all eczematous surfaces, of a layer of Lassar's paste, without salicylic acid. The ulcer is thickly covered with subnitrate of bismuth or any unirritating powder, and a gauze bandage is smoothly applied from the toes to the knee. Upon this is spread with a paintbrush a layer of the hot zinc-gelatine paint, which has the following formula: Oxide of zinc, 8 parts; gelatine or glue, glycerine, each 5 parts; water, 22 parts. When first prepared, it should be kept at the boiling point in a closed vessel for half an hour, and it should always be sterilized in the same way just before using. Over the paint is put another layer of bandage, and over that a second coat of paint, continuing in the same way until from four to six layers of each have been applied. It dries in from six to twelve hours, but is always more or less elastic. It should be left in place until a spot of discharge shows through just over the site of the ulcer, which will happen, according to the quantity of discharge, in from four days to three weeks. The formation of granulations and the spread of epidermis goes on rapidly under this dressing, and often results in a comparatively speedy cure, even when the ulcer seems hopelessly indolent. As a method of treatment it is almost universally applicable, doing good even where there is an extensive loss of tissue to be filled with granulations and covered with epidermis. In the larger ulcers, where skin-grafting is resorted to, it is an ideal dressing to apply after the grafts have taken.—*Journal of the Medical Society of New Jersey.*

Milk and Scarlatina.—Alice Hamilton presents the folfowing conclusions: The literature of milk-borne epidemics of scarlet fever contains many which are (a) based on insufficient evidence as to the agency of milk in the dissemination of the disease; (b) based on the erroneous belief that a disease in cows is capable of causing scarlet fever in man. The disease in cows supposedly responsible for scarlet fever in man is ordinary cowpox, and the disease in man supposed to be caused by it is either septic fever from infection with pyogenic organisms or coincident scarlet fever. There is no good evidence that milk from diseased cows can cause scarlet fever in man. After rejecting many reports of milk-borne outbreaks of scarlatina there remains a fair number which are above criticism, and which apparently prove that milk is a good culture medium for the scarlet fever virus, and is the most frequent agent of indirect infection in this disease.—*American Journal of the Medical Sciences.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service duringthe week ending January 20, 1906:

			CASES.	DEATHS.
SMALLPOX—UNITED STOTES.				
California, Imperial and vicinity	Jan.	5	7	..
San Francisco	Dec.	23–30	4	..
Delaware, Wilmington	Jan.	6–13	2	..
District of Columbia, Washington	Jan.	6–13	4	..
Florida, Jacksonville	Jan.	6–13	3	..
Mascotte	Jan.	6–13	1	..
West Palm Beach	Jan.	6–13	1	..
Oviedo	Jan.	6–13	1	..
St Petersburg	Jan.	6–13	7	..
Illinois, Chicago	Jan.	6–13	1	..
Indiana, Lafayette	Jan.	1–8	1	..
Louisiana, New Orleans	Jan.	6–13	6	..
Maryland, Baltimore	Jan.	6–13	5	..
Missouri, St. Louis	Jan.	6–13	2	..
New York, Buffalo	Jan.	6–13	1	..
New York	Jan.	6–13	2	..
Ohio, Cincinnati	Jan.	5–12	2	..
Dayton	Jan.	6–13	1	..
South Carolina, Camden	Jan.	6–13	1	..
Washington, Spokane	Dec.	1–31	2	..
Wisconsin, Appleton	Jan.	6–13	4	..
La Crosse	Jan.	6–13	1	..
SMALLPOX—FOREIGN.				
Brazil, Pernambuco	Nov.	15–Dec. 15	..	80
Rio de Janeiro	Dec.	3–10	..	1
Chile, Iquique	Dec.	2–9	20	6
France, Paris	Dec.	23–30	13	..
Gibraltar	Dec.	18–24	8	1
Great Britain, Cardiff	Dec.	23–30	1	..
India, Bombay	Dec.	12–19	..	2
Karachi	Dec.	10–17	4	..
Madras	Dec.	9–15	..	5
Italy, General	Dec.	21–28	26	..
Palermo	Dec.	16–23	2	..
Russia, Odessa	Dec.	9–16	9	1
St. Petersburg	Dec.	3–9	6	..
YELLOW FEVER.				
Brazil, Rio de Janeiro	Dec.	3–10	7	1
Cuba, Habana	Dec.	30–Jan. 16	2	2
Mexico, Veracruz	Dec.	23–30	1	1
Nicaragua, Managua	Dec.	9–16	..	1
CHOLERA—INSULAR.				
Philippine Islands, Manila	Nov.	18–Dec. 2	5	4
CHOLERA—FOREIGN.				
India, Madras	Dec.	9–15	..	8
Russia, Lomza District	Dec.	7–17	4	4
Mazow	Dec.	7–17	11	4
Ostrow	Dec.	1–17	3	..
PLAGUE—INSULAR.				
Philippine Islands, Manila	Nov.	18–25	1	1
PLAGUE—FOREIGN.				
Brazil, Pernambuco	Dec.	1–15	..	2
Rio de Janeiro	Dec.	3–10	7	..
Great Britain, Liverpool	Dec.	22	On U.S.S. Oropesa from South American ports.	
India, General	Nov.	18–Dec. 16	11376	8801
Bombay	Dec.	12–19	..	8
Karachi	Dec.	10–17	6	6

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 5.
Whole No. 1839.

New York, February 3, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

CLEAN AIR.*

By T. MITCHELL PRUDDEN, M.D.,

NEW YORK.

From the beginning to the end of his life three things man must have, whatever else he may lack. These are air, water, and food. Under natural conditions the air is everywhere abundant; the supply of water is bountiful or may be obtained in nearly all regions naturally fit for human habitation. Under almost all circumstances the consumer or somebody else must work for his food.

But the securing of these three essentials of life becomes more complex and difficult as men herd together in communities, and especially in great cities. The air gets contaminated by enclosure in the confined spaces in which we live. The water becomes scanty from the large local demands upon a limited supply, or unwholesome by its pollution through community waste. Food grows costly by the increase in population and the grouping of people who are not themselves food producers; it becomes deficient or harmful through the rapacity of its purveyors and the ignorance and intemperance of its consumers.

Of these three essentials to life it is the air alone which now concerns us. We need not dwell upon the harmful products of human waste in the air, nor upon the various other ways and forms of air contamination which involve its gaseous constituents. These have been the subject of extensive studies, and their nature and significance are well known. The common problems of ventilation find adequate treatment in the standard treatises on hygiene and sanitation.

But there is another kind of air contamination which has not hitherto received as much attention as its importance justifies, namely, floating dust, to which this paper is largely devoted.

Dust as an inciter of disease has long been recognized in occupations which involve the setting free in the air of large quantities of finely pulverized material. Such trades as certain forms of mining, wool sorting, stone cutting the making of certain pigments and chemicals are placed in a class by themselves as especially dangerous occupations.

But it is comparatively recently that the significance of floating matter in the air in relation to the health of the people at large has been realized, and the accumulation of this new lore is closely linked with the development of our knowledge of bacteria and other minute infectious agents.

It was clear enough from the beginning to the devotees of the new science of bacteriology that among these minute commensals of man only a few were of sinister import. But to most physicians and to the public, bacteria were things to conjure with, and all shared in the bad repute of the few which were demonstrably pathogenic. So for a time the mere presence of many bacteria in food or water or air was looked upon as a serious menace.

But with the discovery of one after another of the inciting germs of various infectious diseases, a knowledge of their sources and the conditions under which they flourish or are destroyed, a more intelligent and discriminating viewpoint was reached. Men came to dread the forms which are harmful, and set about finding means to curtail their ravages, and left the remainder, the great majority, to their own devices, or made them the subject of curious and fruitful biologic study.

It soon became clear that the infectious microorganisms are conveyed from an individual harboring them, either directly by personal contact or indirectly through some contaminated intermediary, or through some solid or liquid used as food or drink, or, finally, through the air in the form of visible or invisible dust.

We leave, as not bearing directly upon our theme, the various modes of conveyance of infectious agents by immediate contact and through contaminated food and drink, and turn to aerial infection.

Infectious material, depending as it always does upon microorganisms of some sort, can only pass from one individual to another through the air as particulate bodies. Thus the study of the physical conditions under which fine particles can be disseminated in the air, how long they can remain in suspension under various conditions, and how these conditions affect the viability and virulence of infectious microorganisms, has become of great importance.

It was early learned that bacteria are not readily separated from fluids or moist surfaces by air currents, and that the exhaled breath is practically germ-free even in those suffering from communicable infectious diseases. It was found that many microbes are killed by drying, by sunlight, by immersion in water; or if not killed, many pathogenic forms are greatly reduced in virulence.

On the other hand, a host of careful studies has been made on the various safeguards of the body against the entrance of microorganisms, and a flood of light has been let in upon the subtle and highly effective processes through which invading germs of all degrees of virulence are safely disposed of within the deep recesses of the tissues, when by some mischance they have overcome the barriers.

The early conception of the risks of aerial infection is clearly exemplified by the story of the Lister spray and its various modifications, which at one time dominated the field of practical surgery. It was then the endeavor at all hazard to remove the possibility of bacteria of any kind which might be floating in the air, entering the open wound. It did not matter much where these came from. All bacteria looked alike to these early devotees to antiseptics.

But the remarkable capacity of the living tissues to kill and safely dispose of most bacteria soon impressed itself upon the surgeons through practical

*Read before the Practitioners' Society, January 5, 1906.

experience and the studies of the laboratories. They began to realize that the direct conveyance to the wound of a few forms of well-known germs from an outside source of infection is a far more serious menace than the indirect conveyance even of the same organisms which have been subjected to the unfavorable influences of drying, sunlight, etc., usually involved in the formation of dust. Thus it is that most surgeons to-day, having secured what they consider reasonable cleanliness in their operating rooms, disregard the air as a risk, and concentrate their attention upon direct sources of infection, such as hands, instruments, dressings, the seat of operation, etc.

Similarly, the alleged sources and frequency of aerial infection through the respiratory apparatus began to be accepted with more reserve as knowledge grew on the one hand about the nature and vulnerability of infective microorganisms and on the other about the self-protective capacities of the human and animal body. Finally, one of the most significant features in infection secured recognition, namely, that the simple presence or growth of infective agents in the body does not suffice for the incitement of disease unless a series of favoring conditions of the body itself be present. This prerequisite to infection, sometimes very subtle, and often not yet at all clearly understood, is named predisposition or susceptibility, and its final recognition has contributed largely to the juster estimate of the common risks of infection, as well as to the brightening outlook for the suppression of many serious maladies.

Thus the drift of discovery and the perspective which our present outlooks furnish, lead to a more critical and a somewhat chastened estimate of the actual risks to which we are commonly exposed from floating matter in the air of inhabited regions.

Still, when all is said in favor of the saner view which the knowledge of to-day may justify, the proper disposal of infective secretion and the removal of dust which gathers in the close and often crowded spaces in which many pass a large share of their lives is of great importance, and its neglect has a direct bearing upon the increase in respiratory diseases which statistics show.

Let us therefore look more closely at some of the more recent studies on dust and its significance.

We seldom realize what an enormous number of dust particles may be floating in the air of enclosed places which in diffused light seems clear and pure. But let a beam of sunlight fall through a small opening into the air, or cast a powerful electric light across the dusty space. Then an incredible number of minute particles may be seen dancing about, forming indeed a sharp luminous pencil made up of the reflected rays thrown from each tiny mote.

How numerous these particles may be even in inhabited places, it is not easy to determine. But various methods have been devised for counting them.

Dust-containing air in measured volumes has been caused to bubble through fluids, the latter evaporated, and the particles weighed or counted. It has been filtered through cotton and the amount determined. It has been blown against glass plates covered with adhesive material, and thus an approximate estimate arrived at.

The most accurate and ingenious method of dust analysis is that of the English physicist Aitken, who has devised an instrument called the Aitken dust counter, by which we may determine the exact number of particles in any given volume of air.

It is worth looking at for a moment, this ingenious instrument of the English scientist. It is well known that when the air is fully saturated with moisture and is then suddenly cooled, the watery vapor condenses as fog or rain. It is not so well known that in the formation of fog or rain a particle of floating matter in the air, that is, of dust, forms the nucleus upon which every drop or droplet is condensed Now, it occurred to Aitken that if he could reproduce experimentally, in a measured volume of dusty air, the conditions under which fog forms, and then could count the fog droplets, he would know how many dust particles there were in the air; the counting of the fog droplets being easier than counting the dust particles, because they are much larger.

The "dust counter" as it was finally perfected consists of a small, accurately measured, air-tight chamber, connected with an air pump and with an arrangement for introducing small measured volumes of dusty air. The air chamber, saturated with moisture, is first charged with a measured amount of the air. Then with a sharp thrust of the air pump a partial vacuum is created in the chamber. The air expands, and as it does so suddenly cools, so that a fog droplet is formed around each floating dust particle. The operator is watching the illuminated interior of the chamber through a lens and can see the shining droplets as they suddenly flash into the field of vision and fall in a minute shower upon a ruled plate at the bottom of the chamber. Then, when all the fog droplets have fallen and the mimic shower is over, he counts the microscopic splashes, each one representing a whilom floating dust particle, and makes his simple calculation of the number which were in a thimbleful, or a breath, or a roomful of the dusty air. No matter how small the floating particles may be, the fog catches them every one.

I show to you Aitken's dust counter set up and ready for use.

Prof. Aitken has made many interesting studies of air under various conditions, and the revelations of his analyses are even more striking than those of the sunbeam, because they are expressed in figures. For example, he has estimated on the basis of counts with his instrument, that the devotee to the gentle cigarette may set free upon an unwilling environment at one full average exhalation, not less than four thousand million particles of smoke.

The number of dust particles in the air we breathe, even when very impure, is of course usually much less than this, and many factors must be taken into the account before one ventures upon a numerical statement of the average number in any given place. For example, the air out of doors may be largely cleared of dust by rain and fog. On the other hand, dry winds may sweep dust particles upward in vast numbers from the ground, and hold them suspended for hours upon the air, driven hither and thither in clouds of varying density. Again, the great volumes of relatively clean air moving across a dusty region may so dilute the impure air that the number of dust particles in a given volume is greatly reduced. Or they may be carried away altogether.

Finally, one of the most important of the physical agencies determining the number of dust particles at any fixed place is the gradual settling of the dust whenever the air is moving slowly or is still.

In his studies upon the floating matter in the air, Tyndall found that these myriad dust particles, if enclosed in a tube, soon settle upon its sides and bottom and the enclosed air becomes as clear and moteless as are the stellar spaces. This is, indeed, only a more refined form of the experiment which every housekeeper makes who closes the room after sweeping to allow the dust to settle.

Thus it is evident that when we are told that somebody has found so many thousands or millions

or hundreds of millions of dust particles in the air of some town or street or building, we may justly insist upon knowing the conditions of his analysis before we can concede any special significance to his figures.

What the effect may be upon the health of persons who breathe this more or less dust-laden air can be more intelligently considered after we have glanced at one most significant form of dust, namely, that containing bacteria or other kinds of microorganisms.

Microorganisms floating in the air as dust are sometimes single, more often in small clusters or masses joined together as they have grown, and are very apt to be clinging to some other forms of dust particles.

The number of microorganisms which the air may contain varies, like other forms of dust, with varying conditions. In the case of these, as of other dust particles, the actual number determined by analysis is of little value as expressing averages, unless the conditions are carefully recorded. In general it may be said that the out-of-doors air contains far less microorganisms than that in rooms where men and animals gather, because of the dilution constantly occurring from the vast volumes of clean air sweeping across the country.

There are two common methods of determining the number of living microorganisms in the air.

The first and most accurate is by allowing a measured volume of air to filter slowly through a tube of dry sterilized sand, which retains all the dust particles, microorganisms among the rest. The entire content of the tube is then planted in a suitable culture medium. The number of colonies of microorganisms which grow under these conditions is taken to indicate approximately the number of living germs in the measured air volume.

Here is the apparatus which we use for quantitative analysis of air. This is a vacuum cylinder so adjusted that when exhausted to a certain point on the gauge it will draw in ten liters of air, which passes through this tube partly filled with sterilized sand. Here is a culture plate after the operation, in which you see among the grains of sand the scattered colonies of various forms of microorganisms.

The second method of so-called biological air analysis consists in exposing culture plates of nutrient medium to the air for a definite time, and then counting the colonies which develop from the dust which has settled upon the surface during the exposure. Care is, of course, taken in this form of analysis to secure quiet places for the plate exposures, and the results, while not so accurate as by the first method, are still of value in comparative studies, provided the conditions of the observation are carefully noted. To record simply the numerical result of such an experiment is of little value, because the bacterial content of the air in still places is constantly diminishing by the settling of the dust particles.

Here is a series of culture plates which have been exposed for fixed periods to the falling dust of an inhabited room. You see the great variety of forms in the germs which have grown to colonies upon the surfaces.

But whether the air contains few or many living germs, their significance as regards the welfare of those who use it rests most directly upon the forms which are capable of inciting infectious disease. The others are harmful in just such manner as all dust may be harmful when in the air we breathe.

As was natural, very careful search has been made in dwellings, public conveyances, places of public assembly, hospitals, etc., for living pathogenic microorganisms. And the booty has been considerable. Tubercle bacillus, pneumococcus, streptococcus, staphylococcus, diphtheria, anthrax, tetanus, are among those recorded.

But, as we shall presently see many of the pathogenic microorganisms which have been found in inhabited places have been gathered under conditions which did not indicate that they were in such a finely divided state that they could have contributed largely to the risks of dust infection through inspired air.

We may now concentrate our attention upon dust within doors since it is here that the most serious questions arise relating to the maintenance of health.

We shall first look at some of the physical conditions determining the distribution of microorganisms in the air as dust.

While it has long been known that dust particles settle in still air so that under experimental conditions the air of a small receiver may become quite dust-free, it was not clear that a similar condition could be secured with floating microorganisms in living-rooms and places of assembly, since here, though tightly closed, the air is always astir, sometimes with currents of considerable force.

But some years ago Stern found in a small, tightly-closed, empty room, whose air he had charged with certain easily recognized bacterial dust, that within from twenty to thirty minutes the larger part, in from one and one-half to three hours almost all the bacteria, had settled to the floor, so that the air was practically germ-free.

It had commonly been assumed that in ventilation the air renewal would suffice to remove not only the vitiated air, but its floating particles as well. So Stern studied the effect of ordinary ventilation on the dusty air of his experimental chamber. He found that with ventilation sufficiently effective to change the whole volume of air four times per hour there was little gain over the clearing of the air by simple settling. On renewing the air six to seven times an hour he found some gain; while if the whole were changed ten times per hour, there was a rapid removal of the bacteria from the room. It should be remembered that under suitable conditions the air in a room may be renewed four or five times per hour without the creation of an appreciable draft. It is thus seen that in the ordinary effective ventilation of a room bacteria are not removed from the air to any considerable extent.

Another point of great interest is covered by the experiments of Stern. It has long been a popular impression that the opening of windows, especially when the wind is blowing, is effective in the removal of dust from rooms, even though this has already settled upon the open surfaces. Stern found that this is not the case. He studied the effect of air currents upon bacterial dust which had already settled naturally to the surfaces of floors, fabrics, etc., and found that even very rapid currents of air—six to eight feet per second—blown across such surfaces do not dislodge the bacterial dust in appreciable degree.

It follows from these experiments that the ordinary ventilation, however effective it may be in the supply of fresh air and the removal of gaseous contaminations, has no noteworthy effect in the removal of dust, either floating or at rest.

Indeed, if the fresh air introduced in artificial ventilation contains dust, with the slowly moving currents between the entrance and exits, the dust steadily falls, so that the rooms are actually settling basins in which dust, unless otherwise removed, continually accumulates.

These experiments show also that the hanging of

garments out of doors in the air with the expectation that infective agents will forthwith abandon them, is not to be commended. For unless such articles be brushed, or beaten, or shaken, or flap violently in the wind, bacteria are not largely removed.

Although, as stated above, various pathogenic organisms have been found in the dust of inhabited places, the fact that a large proportion of most of them are killed by drying and by exposure to sunlight, as well as confidence in the effective safeguards of the normal body, led to a widespread disregard of the risks of dust infection except in a few instances, among which the most conspicuous is tuberculosis. The pulmonary forms of this disease so frequently involve the discharge of large numbers of living bacilli that this risk was recognized, while in other infectious diseases it has been largely ignored.

But some years ago, Flügge investigated the fresh infective material which may be discharged from the mouth in speaking and coughing, and from the mouth and nose in sneezing. The results of these studies, carried on largely by himself and his assistants in Breslau, brought to the front a series of new and sinister possibilities of air infection. In brief, Flügge and his associates found that not only in sneezing and coughing, but also in ordinary speech, the secretions of the nose, mouth, and throat may be cast forth in considerable quantity for a distance of several feet, not only in the form of visible droplets, but as a more or less abundant, invisible spray, which may remain suspended for from half an hour to several hours, and may be carried for long distances on such slowly moving air currents as are common in inhabited rooms.

The method by which these results were obtained was simple. The mouth and throat of the subject was rinsed with a small amount of an emulsion of a harmless bacterium—frequently the *B. prodigiosus*—and he was placed in or in front of a small sterile cabinet, in various parts of which culture plates were exposed. At the end of the seance, after speaking or coughing or sneezing, the dust and invisible spray were permitted to settle on the culture plates, where later the colonies which had grown were counted.

There is much difference in individuals as to the extent of dispersal of material in speech, as was shown by declamation into the cabinet by various persons. It is rather sharpness than loudness in speech, and especially the enunciation of certain of the consonants, such as t, k, p, b, f, which give rise to the most generous ejection of the secretions. There is a marked difference in individuals who cough, depending in part upon the vigor of the act, the character of the secretions, and the position of the lips. It was found that most of all in sneezing the air may be widely contaminated.

Not only was it possible to infect culture plates with microorganisms taken into the mouth with experimental intent, but patients with tuberculosis were so placed as to cough and sneeze in enclosed places in which animals were confined, with the result of tuberculous infection of the exposed animals.

These studies of Flügge and his followers have thus shown, among other things, that in the immediate vicinity of persons whose mouths harbor pathogenic microorganisms there is a varying but often considerable risk of the direct conveyance, especially in coughing and sneezing, of fully virulent infectious material, not only in the form of visible droplets, but as invisible spray.

Later studies of de Leon, Hamilton, and others, have emphasized the importance of this floating spray in the conveyance of streptococci and other pyogenic organisms from infected mouths during surgical operations, and the incitement of fresh infections in hospital wards and elsewhere.

While in general it may be said that the directly infectious zone does not usually reach beyond two or three feet, it is still to be remembered that so minute are the particles often expelled in enormous numbers in the commonly invisible spray of sneezing, that these may be carried for many feet on air currents as slow as those involved in ordinary ventilation or such as are invariably present in inhabited rooms.

Such minute particles, moreover, which harbor microorganisms not killed by drying, may ultimately form infectious dust so light that when wafted into the air by the movements of persons or by improper methods of cleaning, they may remain long suspended in suitable form and condition for inhalation.

The time during which bacterial and other dust remains suspended in the air is naturally dependent upon the weight of the particles, so that in forming an estimate of the risks of infection from floating dust, one has to consider not only the physical characters—size, weight, aggregation, etc.—of the various pathogenic microbes, but also the conditions under which they gain access to the air.

In this connection the critical studies of Flügge and his associates have brought to light some interesting points.

In the first place, it has become clear that not all the infectious material which may be cast out of the body as sputum is always readily and speedily transformed into dust. In the drying of the mucus with which much of this material is mingled, a process ordinarily rather slow, the bacteria are closely imprisoned so that only under certain conditions, such as the rubbing and beating of soiled clothing, the shuffle and tread of feet over contaminated floors, dry sweeping, and the like, is the excretion sufficiently comminuted to float in the air as dust. Even when this is the case, it has been found that a large part of such pulverized excreta is still in too large particles to remain long suspended on the air.

This condition of affairs was not appreciated in the earlier studies on dust infection, and in many instances the material called dust, collected in various places for analysis, was evidently not in such form as would have remained long in suspension. Thus it is that while the earlier identification of various pathogenic microorganisms in the dust of rooms was correct, the inference as to the constant risk of dust infection in such places was frequently at least somewhat overestimated.

Many studies have been made on the transportation of dry germs in floating dust, especially indoors. Such air-borne germs readily pass from room to room on the ordinary air currents. If doors are closed, they make their way through cracks and keyholes. They are wafted from one story upward to the next, and readily find their way into closed wardrobes, bureau drawers, and between the leaves of open books.

The effect of walking over floors on which bacteria-laden dust has settled is to set large numbers astir, but in still air these do not commonly rise more than a few feet and then slowly settle back again. Dry sweeping of such floors sends clouds of germs into the air, contaminating it in every part.

We have thus seen that the amount of dust in the air which we breathe is not only constantly varying, but that its significance in relation to health is closely linked to the sources from which it is derived. Among the microorganisms which form a constant part of the dust in inhabited regions, it is those which are derived from men and animals, themselves the subjects of infection or harboring patho-

genic microorganisms which are of dominant significance.

Let us now glance at some of the ways in which the body is protected against the entrance of dust and the means by which it is disposed of when it does pass, as is frequently the case, even the most effective barriers.

In normal breathing through the nose, the air impinging upon the moist surface of the tortuous passages loses a considerable part of its dust and bacteria. In the throat, larynx, and trachea, a similar clearing occurs, so that at the end of inspiration the air has been so far freed from its floating particles that it emerges in the expiration practically dust and germ-free.

If the nasal pasages are not normal, or breathing through the mouth is practised, the air contamnations may pass more deeply into the recesses of the lungs, or may still remain to a certain extent suspended in the expired air.

Many of the dust particles which may lodge upon the walls of the deeper air passages are swept upward by the ceaseless ciliary movement and cast out, as are the secretions and dust accumulations from the nose and throat. The growth of many microorganisms is inhibited by the mucus of the air-passages. Many inert dust particles which are taken into the tissues at the tonsils or in the deeper recesses of the air tubes are carried in the lymphatics to places of temporary or permanent deposit. Many microorganisms within the tissues are destroyed by phagocytes or by the body fluids.

Thus it is that although large numbers of dust particles may enter the respiratory passages at every breath, the larger proportion are usually safely disposed of, most of them through the secretions of the throat and nose.

It has long been known that a certain number of inert dust particles from the inspired air, in spite of the tortuous and narrow passages which they must pass in the deeper recesses of the lungs, do reach the air vesicles, from which they may be largely removed to the adjacent tissues or to the nearest lymph nodes.

Whether living bacteria can reach the air vesicles under the ordinary conditions of respiration, is a question much discussed and has given rise to many painstaking researches. One group of workers has concluded that the lungs, except for the larger air passages, are usually germ-free. On the other hand, many have concluded from equally careful studies that the lungs of both men and animals often, if not always, contain a moderate number of living microorganisms. The technical difficulties in this research are so great and the conditions under which they have been undertaken are so various, that this difference of opinion is not surprising.

Without attempting to marshal the evidence adduced on both sides of the question it appears that in most of the earlier studies on the artificial introduction of living microorganisms into the lungs, the time which was allowed to elapse between the introduction of the germs and the examination of the lungs was too long, so that the possibility that the lungs might rapidly dispose of germs lodged in their deeper recesses was overlooked.

In fact, it has been found that in experiments in which animals are exposed to an atmosphere laden with bacteria-containing dust or spray, if the animals be killed at once after the exposure, living microorganisms may be found even in the deepest portions, while if even a short time be allowed to elapse they will have entirely disappeared.

While, however, in the air passages and lungs we have a most efficient protective mechanism against the entrance and permanent lodgment under ordinary conditions of both inert dust particles and living microorganisms in such situations as would involve serious damage to these delicate organs, it should be remembered that the efficiency of these safeguards may be greatly diminished if they are overworked and abused.

The lungs of practically all persons who live indoors contain a considerable amount of soot, which blackens them. The irritation incited by this foreign stuff leads in most adults to some part of the lungs becoming dense and useless. The overworking of the delicate mechanism for filtering the foreign matter out of the lymph flowing from the lungs to the interior blood channels leads to serious damage of this mechanism and to an increased vulnerability to infection which the healthy body should and could resist.

These conditions resulting from excessive dust inhalation are not necessarily obvious through illness or apparent reduction in vigor. But in the long run, with many other offenses against personal hygiene, they are enough now and then to swing the balance toward disease and death.

There can be no doubt that various forms of catarrh of the nose and upper air passages, if not directly incited, are favored and perpetuated by the inspiration of dust-laden air.

Under these conditions, too, several forms of disease-producing bacteria find favorable conditions for continuous growth, while the discharges from such infected regions afford a perpetual source of widespread distribution.

It is not necessary for us to enter into the question much discussed of late, whether infective bacteria which enter the body by the inspired air commonly reach the lungs directly through the air passages, or whether in many instances they may not enter through the tonsils or the gastrointestinal canal, reaching the lungs by way of the blood or lymph vessels. The necessities for cleanliness in the air are the same in either case.

Perhaps the most common of the pathogenic microorganisms to be widely dispersed in the air as floating particles are the streptococcus and staphylococcus, which are apparently frequently concerned in the incitement of colds and of the lamentably frequent catarrhs. So general is the dispersal of these organisms and of those inciting influenza and pneumonia, that they are now generally recognized as regular denizens of the mouths of dwellers in towns.

The experience of those who come home to the cities after a summer of the most varied exposures in germ-free air without colds or other disturbances of the respiratory apparatus, only to inaugurate the winter with a bronchitis or influenza, is evidence of the vicious conditions in public conveyances and places of assembly.

Some slight exposure to draughts, overexertion, indiscretion in eating, and various other slight departures from healthful conditions, apparently suffice when these germs are present in virulent form, to precipitate an illness which often shadows the winter if it does not lead to serious or fatal disease.

It is clear to-day that in one group of infections, of which typhoid fever and cholera may be taken as types, the risks of the transmission of the infective material in floating dust are slight. In another group in which direct contact of vulnerable surfaces with infective secretions or exudates is requisite for communicability, such as syphilis, most wound infections etc., aerial infection may be left largely out of account.

On the other hand, in the exanthemata we have the clearest examples of aerial transmission of the

infective agents, though these are as yet unknown and can be guarded against only indirectly, or directly in the most tentative fashion.

Thus we have left the great and significant group of communicable diseases usually associated with the discharge from the mouth and respiratory organs of infective secretions and exudates in which the fact of aerial transmission is clear and frequent In this group are influenza, whooping-cough, pulmonary tuberculosis, diphtheria, cerebrospinal meningitis, and the various forms of exudative infectious pneumonia. It is in this group that many complex and urgent questions of prophylaxis center. Each of these diseases presents special conditions and individual problems.

For in order to gain a just estimate of the aerial communicability of any infectious disease in which the clinical evidence is not clear and abundant, it is necessary to consider the portals of entry of the special infective microorganism and the ways in which it may leave the body; its capacity for resistance to drying, sunlight, heat, cold, etc.; the condition in which it is given off, whether in fine particles or in masses more or less mingled with exudate which may materially modify its capacity for suspension in the air as dust.

We know that the tubercle bacillus may remain alive and maintain its virulence for long periods and under all conditions necessary for its complete desiccation and the grinding of the secretion which contains it into a powder so fine that it floats for a considerable time in the air. Similarly, though not to the same degree, the diphtheria bacillus, streptococcus, and staphylococcus resist drying for considerable periods.

On the other hand, the pneumococcus, the influenza and plague bacilli, and the diplococcus of cerebrospinal meningitis, like its relative the gonococcus, are all readily killed by drying.

The recent studies of Wood on the destruction of life in the pneumococcus by drying are most interesting in this connection.

But the capacity of a pathogenic microorganism to resist drying as a factor in aerial infection has become less significant since we have learned of the widespread diffusion of bacteria in the air by spraying in coughing, sneezing, etc., from the infected nose or mouth. Thus it is that the clinical evidence of communicability in the infectious respiratory diseases is not only sustained but largely extended by the direct studies upon the infective organisms themselves.

We have abundant evidence of the communicability of the air-borne infective agent in pulmonary tuberculosis and this has been generally accepted. We have quite as valid evidence of communicability in various phases of pneumonia, in influenza, in whooping-cough, and in epidemic cerebrospinal meningitis. But this has not yet become a part of the common professional belief, so that still in hospitals, asylums, and private practice, the necessary precautions against aerial communication are not enforced.

When we come to sum up the real risks from dusty air to which one is subjected indoors under the ordinary conditions of life, particularly in cities and towns, we see that they are very variable and depend upon a great many conditions.

There is more or less dust wherever man goes. It is usually most abundant and significant in densely inhabited regions and especially indoors. Under many circumstances the dust is moderate in amount, does not contain infectious material, and so forms one of the many conditions in modern life which, though detrimental to health, are not positive and direct incitants to disease.

The protective mechanism of the body is so nicely adjusted to the usual conditions that a moderate amount of dust in the air inspired is readily and safely cast off or otherwise disposed of.

On the other hand, there are many conditions under which the dweller in modern towns finds himself, in which the air is heavily and almost continuously charged with dust, some of it undoubtedly derived from the infectious waste of diseased persons who, through spitting or unguarded sneezing or coughing, or in other ways, have contaminated the air. But whether under these unfavorable conditions one shall suffer from his exposure to these various disease incitants depends in the largest measure upon his physical condition. If the natural safeguards against infection through his respiratory organs are in good working order; if he be not predisposed through some general physical disability to the incursions of such infectious microbes as may have survived the adversities of drying, sunlight, etc., to which his particular dose of dust has been subjected —then, indeed, he may for months and years together sustain without much obvious damage the burden of dusty and even infective air.

This is in fact the good fortune of most city dwellers. But now and then, here and there, with one or another of the crowd, the adverse conditions fit together and one or another falls victim to preventable dust disease.

If now we turn to those individual precautions and public measures by which we may strive to reduce the risks of aerial infection through floating dust, it is at once evident that there are two distinct parts to the problem: *First,* the prevention of the distribution of infective material in such condition that it floats in the air or may be converted into dust; and, *second,* the practice of such methods of cleaning as shall ensure the removal or destruction of infective or other dust from inhabited places and especially from dwellings and indoor places of assembly.

First, as to the distribution of infective material. It is fortunate that, so far as we know, very few of the infective microorganisms flourish or even survive for long periods outside the bodies of men and animals. Some, indeed, such as the germs of tetanus and anthrax, in the form of spores, may remain alive for an indefinite time; but dust infection from these sources is extremely uncommon and may, for our purposes, be left out of the account. So also we need not consider here the infective agents which are not likely to incite disease of the respiratory organs, such as the typhoid and cholera organisms.

We cannot discuss, except in a general way, the exanthemata because we do not yet know just what their inciting agents are. It is probable that they are extremely minute, air-borne organisms and that infection takes place through the mucous membranes of the nose, mouth, or respiratory passages. If this be true whatever measures are efficient against the distribution of infective dust in general will be, in a measure, useful with them also, since however minute they may be they must be particulate bodies and subject to the general laws of dust transportation and subsidence. However, in the case of the most important of the exanthemata—smallpox—the protective action of vaccination has largely reduced the risks from aerial infection.

Now in this class of diseases, which we may regard as most important from our present point of view, are, as we have seen, influenza, whooping-cough, pulmonary tuberculosis, diphtheria, various

types of pneumonia, various forms of nose, mouth and throat lesion associated with streptococcus and staphylococcus, and cerebrospinal meningitis. In nearly all of these diseases exudates are cast off in varying amounts which contain virulent micro-organisms.

It is clear that the golden moment for prevention is when these various infective excreta are cast out of the body. The methods for preventing the distribution of these are so well known that we need not rehearse them here. Two points, however, may be briefly touched upon.

First, the careful disposal of sputum is seldom practised to-day except in the case of pulmonary tuberculosis. Every reason for care which applies to this disease is pertinent also in nearly all of the others. Second, the wide and obvious distribution of infective stuff in a fully virulent condition by coughing and sneezing is still ignored. If, whenever it is practicable, the obvious precaution were taken to hold the handkerchief before the mouth and nose during these acts a very important advance would be secured in the prevention of the infectious maladies which we are now considering.

For this material, if it does not find its way directly to the respiratory organs of others, soon dries in the air and is then floating dust instead of floating spray, or dries upon the surfaces to which it has settled and then is subject to the various physical conditions under which it is ground into a powder.

The filthy and wholly unnecessary habit of spitting on the floors in public places and in many dwellings is still widely practised. The few instances in which legal measures have been resorted to to suppress this nuisance and menace to the public health have already led to a noteworthy sentiment against promiscuous spitting.

But in order to secure important results, offenders must be ceaselessly and relentlessly pursued. An occasional arrest at long intervals is of little value and whatever official shall undertake to do his duty in the matter will have to realize that the fish who come to his net are as likely as not to be quite exalted political personages, as well as others in fashionable attire.

But education in cleanliness is a slow and discouraging undertaking and involves a far more radical reform in the sense of decency than the law alone can ever secure. Moreover, under the most favorable conditions there will always be a considerable dispersal of infectious material in closely crowded communities.

Thus we are led at last to a consideration of those methods of cleaning and disposal of dust which our knowledge of the infectious diseases makes imperative and which our studies of dust have made entirely practicable.

In all living rooms the conditions are favorable for a continuous accumulation of dust. If there be an adequate ventilating system the so-called fresh air in our cities usually enters more or less charged with soot and other forms of dust. This in part settles upon the horizontal surfaces before the contaminated air leaves the room through its proper exits. The ordinary gas burners furnish an enormous number of minute smoke particles invisible to the eye. Shoes and garments worn upon the streets and in places of public assembly bring into dwellings large quantities of material of the most objectionable and often filthy or infectious origin, most of which presently takes its place with the rest of the floating and falling dust. Add to this the sprayed secretion in coughing and sneezing, the wear and disintegration dust from persons, garments, furniture, carpets, hangings, etc., and one has framed but an incomplete inventory of the aerial flotsam and jetsam of an inhabited room.

While dust in a condition to do harm is always floating in the air it is important to remember that in the long run dust is always falling. It is true that when the particles are small and light they may be temporarily swept upward or borne along on air currents so that the effect of gravitation seems to be temporarily suspended, but the steady pull is downward and they always come to rest on the lowest available surfaces. Thus it is that in enclosed places the air always tends to free itself from dust.

If some time in the twenty-four hours the room can be shut up so that the air is fairly still the dust will practically all settle to the horizontal surfaces. If now we can remove it from these without stirring it into the air again we may, once in the day at least, start with relatively dust-free and germ-free air.

If the rooms are uncarpeted it is easy, by the use of moistened sawdust, to sweep them with comparatively little stirring of the dust. Then if two or three hours be allowed to pass with the rooms closed or still, whatever dust may have been stirred in sweeping will have again settled and by the use of moistened mops and moist or dry cloths it may all be removed.

But as a rule this is not done. Dry sweeping is largely practised and this is, under all circumstances, an abomination. Then usually the so-called dusting is done before the proper time has been permitted for the dust to settle. Then, further, the most silly performance conceivable is indulged in, namely, instead of removing the dust, which has settled, in a safe and easily managed condition, it is set afloat again by dry dusting. Nothing is accomplished by this except to get the dust off from the shiny surfaces for a short time and to get it in a condition to do the greatest possible harm through its inhalation by the unfortunate victims of that most fatuous of housekeeping fetishes, the feather duster.

There appears to be no good reason why the simple procedures above recommended should not always be followed in those places of public assembly in which, at present, the risks of dust infection are most constant and most threatening. Such places are theatres, churches, clubs, schools, court rooms, factories, stores, office buildings, hotels, railway and trolley cars, hospitals, asylums, and the numerous rooms in which artisans are crowded together engaged in occupations involving the development of various forms of dust.

If all such places in which it is practicable were properly swept *at night* after their occupants had left them, and then closed until mornig, when, before the people returned, with moist mops and dust cloths the floors and all horizontal surfaces were intelligently cleaned, with the purpose of removing and not simply stirring up the dust, there would be an immediate and far-reaching reduction of the dangers from infectious and other floating matter in the air.

Of course in private dwellings the methods of keeping the air free from dust which commend themselves in public places are not wholly applicable. Sweeping cannot be done at night, and the elaborate furnishings which are in vogue make special procedures necessary. The scope of this paper does not permit me to enter upon these in detail. But here as well as in all carpeted places the use of moistened shreds of paper thrown upon the carpets and carried forward with the broom will be found most effective in gathering and holding the dust.

The vacuum process in cleaning, if this be properly administered, affords a valuable means of getting

safely rid of a considerable amount of dust which has gathered upon carpets, rugs, and other surfaces. But the plants for this purpose have not yet been widely installed, and in daily routine it is wisely combined with other and supplementary methods of dust removal.

The carpeting of places of public assembly involves the presence of filthy and dangerous dust in the air, and until proper notions of intelligent cleanliness shall prevail the frequenters of such carpeted places will pay the penalty of their indulgence by attacks of disease of the respiratory organs which might readily be avoided.

The chief error in the present situation is that these homely but necessary offices of daily cleaning are not intelligently directed and supervised, but are placed in the hands of ignorant persons, entirely willing and often furiously devoted to their tasks, but who are seldom advised as to the necessity for the removal, not the stirring up, of dust. The more devoted they are the more often do they appear with the feather duster to set astir the dust which for the moment may have settled to some inoffensive place upon the furniture or floor. The result is that in some of the most carefully and expensively administered places—the great city clubs, for example—the members are perpetually served with the most obviously dust-laden air.

It is a curious fact that in a large proportion of the various places of public assembly the only systematic and effective measure of removal of the often infectious dust is by the mucous membranes of the nose, mouth and upper air passages of the persons who frequent them. One inclined to figures may readily estimate the efficiency of this method of dusting a theatre, for example, if he considers that at each breath the average person takes into his respiratory organs about thirty cubic inches of air. This he immediately discharges, wholly purged of its dust and microorganisms which he retains and must presently dispose of as best he can. But the air of the theatre is free of them.

The trouble is that while some of us are mighty particular about the cleanliness of our clothing, of our food and drink and the utensils in which these are served, and the exterior of our persons, we make no protest as we bear away upon the delicate membranes of our respiratory organs, from places of public concourse, the pulverized excretions of the filthy and diseased. Fancy our reproachful protest should the breakfast of to-day be served upon utensils marked with the remnants of yesterday's repast! But in a considerable proportion of cases in theatres and court rooms, in offices and public conveyances, in factories and stores, the floating dust of to-day is pregnant with the spit of yesterday.

The tendency of the hour in cities is to cram people into box-like apartments in great, many-storied buildings. And while, in administering to the welfare of the tenants of these vast caravansaries in lighting, heating, plumbing, ventilation, etc., the most refined requirements of the day are not overlooked, it still remains a fact that against the growing menace of floating matter in the air there is seldom any safeguard. Whatever degree of intelligence the janitor and his satellites may bring to their tasks the tenant may thank his good fortune for. But he usually clears his air of dust by his own mucous membranes, and he is usually the victim of chronic nasal or pharyngeal catarrh.

Would it not be well to release our delicate and valuable breathing apparatus from the burden of the disposal of this contribution from all manner of men, animals, and things, and give it a chance to settle at least once a day and then, once for all, get rid of it?

Of course this does involve the higher education of the housekeeper and a certain degree of trained intelligence in the executives—and the total abolition of the feather duster.

Of course in time the steady breathing of dust-laden air does free it from its floating matter, but it is an expensive method of housekeeping and the final account is made up in the disease and death records of the Health Department.

It seems a little difficult for laymen—and for many physicians, too, for that matter—to realize that there is no mystery about the way in which the agents which incite infectious disease are conveyed from one to another. The tendency seems to be to look for some intangible miasm, some vague, half personified agency which moves about with sinister intent, and to insist that the only way to remove the risks of aerial infection is to use some more or less choking or bad smelling disinfectant, or to saturate the air with a highly aromatic vapor which may mask, but does not destroy, bad odor due to faulty sanitation.

The fact, however, is that a large part of the so-called disinfection might be replaced, to advantage, with proper methods of sweeping, dusting, and mopping, if these were not so simple and commonplace and all could and would realize the significance of floating dust in the conveyance of infectious agents.

But while the initiative and the moral support in such measures for safeguarding the public health must come from the medical profession, I should still have hesitated to direct the attention of the Practitioners' Society at such length to a subject so elementary and so time-worn, were it not that a specific and urgent responsibility appears to rest upon all physicians in the protection of patients in the hospitals to which they minister, against the dangers of infectious and other dust.

The large number of cases of secondary infection acquired in hospitals, and particularly in children's hospitals and asylums, is fairly appalling, especially in the winter months, and, while many factors are doubtless concerned in maintaining this sinister condition, there can, I think, be little doubt that aerial infection through dust-borne microorganisms plays a large and significant part.

The general aspect of most modern hospitals is one of extreme cleanliness, and certainly in most instances there is no lack of attention and willing service in the daily routine of cleaning. But, in fact, except in the case of tuberculous patients who may be admitted to general hospitals, there is no systematic attention paid to the directly infectious zone which surrounds each patient suffering from an infective disease of the respiratory organs, formed by the dispersal of secretions through sneezing and coughing.

Furthermore, the processes of daily cleaning are almost never specifically directed to the absolute removal of the finer dust.

I do not think that those concerned with the so-called dusting of hospital wards realize how large a proportion of the horizontal surface on which dust settles is made up by the floors and beds. A few square feet at most of tables, chairs, and window seats are attended to, but the larger part remains, to cast its accumulation into the air by the stirring of the beds and the tread of attendants and visitors upon the floors.

I need not detain you with a detailed description of the current methods of ward and corridor cleaning in hospitals. But in fact the one procedure by which the most satisfactory removal of dust may be secured is not practised. I refer to the use of moist

mops on the floors, and moist dust cloths on the solid furniture, and the careful removal and shaking out-of-doors of the night counterpanes, *all in the early morning before the stir of the day begins.*

Sweeping, if this be necessary, should be done before the quiet of the night is established. Then during the relative stillness of the night hours practically all dust and all floating infectious stuff will fall to the beds and floors and horizontal surface of the furniture, whence it may readily be removed. Thus once in the twenty-four hours a hospital may be largely freed from its irritating and infectious air-borne contaminations.

In speaking of the dusting of floors by a mop, I do not mean the usual mopping with the abundant use of water which leaves the floor more or less wet. I mean the use of a large mop, thoroughly wrung out so as to be only moist, not dripping, which is to be passed rapidly over the floor, touching but not lingering upon each part. In this way, as fast as the operator may walk, the whole floor surface is covered and a large area may be effectively cleaned of its dust before it is necessary to rinse and wring out the mop anew.

Of course the initiation of this procedure involves some slight change in the hospital cleaning routine commonly in vogue, which is largely directed toward the removal of visible dirt. But after all, the only essential change is in the moist dust removal, as indicated, in the early morning before it has been in any way disturbed.

Of course it will be said that this procedure is impracticable, that it is expensive, that it is useless, that it is based on finical, theoretical postulates, and savors of the laboratory. However, it has been the writer's good fortune to secure the cooperation of the administration in two large hospitals and in one large educational institution, in having the wards and public assembly rooms properly swept at night, while in the early morning before the wards were astir or the assembly rooms occupied, the settled dust was all removed in the manner indicated and safely sent to sea by the sewer.

In each instance, after the reluctance of the housekeeper to listen to the vagaries of sanitation had been overcome, the results have been most striking and satisfactory; nor has the expense of the change of routine been noteworthy.

In fact, it is much cheaper to get rid of the dust day by day than to keep it stirring, trusting to the chances of the hour that some of it will blow out of the window, or relying upon the friendly offices of the mucous membranes alike of the well and the sick.

In most modern hospitals much more money is wasted in overheating the wards and in blowing prodigious volumes of air out of opened windows in futile directions, that would be required to remove the dust in the most effective fashion. But this does require conviction, persistence, and unceasing supervision.

The tendency of modern medical practice to look at the sick man rather as a halting or disabled machine than as a diagnostic abstract to be dosed, as was so long the vogue, should, I think, lead the practitioner at least to a sympathetic attitude toward the efforts of modern hygiene to maintain an intelligent cleanliness of the air.

In all the delicate mechanism by which the healthy individual may, at need, protect himself against the ill effects of dust and infectious microorganisms, inspired in the air he breathes, the sick man is usually sorely handicapped. To put upon him the necessity of overwork by either his mucous membranes, his lymph nodes, or his phagocytes, or all of these together, is surely not more commendable than it would be to stuff with indigestibles a digestive apparatus of supreme importance in the emergency of illness, or in need of rest.

In view of the increase in respiratory diseases in cities, it is interesting to note that while water supplies are now at last usually subject to the most careful supervision on the part of municipal health authorities, while in well regulated towns food supplies are looked after with more or less intelligence and zeal, one of the three great necessities of human life, the air, which we are ceaselessly taking into the most delicate of our organs, is left almost wholly unguarded either by public supervision or private attention against wilful or careless pollution by the filthy, the vulgar, and the diseased.

While we are concerned in this paper especially with the accumulations of dust indoors where if proper methods of cleaning be not practised it is stirred again and again into the air we breathe, there are certain conditions out-of-doors in New York which deserve at least a brief mention.

An examination of the sanitary conditions in the subway is now being made by Dr. Soper for the Rapid Transit Commission, the result of which we may wisely await. Already many most interesting and significant facts have been brought to light. It is to be hoped that the Commission will realize the far-reaching importance of this research and see that it is carried to completion, so that we may definitely know in the future what to do and what not to do in the construction and administration of these important avenues of transportation.

But the stairways and platforms of the elevated railway have now, for many years, been swept with gross disregard of the welfare of its patrons, who are forced to breathe clouds of the most filthy dust when the attendants are sweeping. No public protest seems to be of avail with those responsible for this abomination. When the porters of the system feel like sprinkling the floor and stairs before sweeping, they do so; when they see fit, they omit it. Individual protest to the company meets with courteous response and the dry sweeping goes on just the same. The Department of Health has long been aware of this nuisance and danger. It has the power to stop it, but does not do so.

There was a time in New York when the street sweepers were required to sprinkle the pavement in advance of their brooms. But of late we are forced to lend to the Street Cleaning Department the good offices of our respiratory mucous membranes already overtaxed by the requirements of the theatre man, the storekeeper, and the trolley car folks, by the traditions of domestic service, and by the house committees of our clubs.

If, in New York, the beneficent law against the smoke pollution of the air were enforced; if the streets were properly cleaned; if the great passenger transport systems were placed under competent sanitary supervision; if the Health Department were persistently alert in enforcing the ordinance of the sanitary code which relates to spitting in public places; and if we could get sweeping and dusting indoors intelligently done, we should have in this city, in my opinion, a fair outlook towards a great advance in the reduction of diseases of the respiratory organs. These are indeed large and difficult "ifs" and they do not appeal as strongly to the public as does the search for a new "serum," but the demand which they imply seems not unreasonable.

The condition which we face is in short this: The infectious diseases of the respiratory organs are steadily increasing as people are more and more huddled together in offices, dwellings, traveling con-

veyances, and places of public assemblage. A large part of these diseases are directly traceable to infectious material cast off, in spitting, coughing, and sneezing, from the mucous membranes of those suffering from various grades of local disease, and floating for longer or shorter periods in the air as dust or invisible spray.

Promiscuous spitting can and should be stopped. Coughing and sneezing cannot be prevented, but in most instances their harmfulness can be controlled by the use of the handkerchief, or, in case of need, by such use of the hand as shall answer the dictates of primitive decency. This is a matter of public education. But when all is said and done in these directions there remain the humble offices of cleaning which can only be effective when conducted with trained intelligence.

The private citizen can stay away from the theatre and the opera, and this, if largely practised, would prove a powerful educational influence upon some of the worst offenders against the salubrity of the air. He may or may not be able to control his own office and workshop, but he can make the attempt. As for his home, he is lord of the castle—sometimes—and he may have clean air in abundance at the cost of a little vigilance and common sense; but he may, if he choose, and he usually does, contaminate his air with the floating refuse of the street and the wear and tear of his person and belongings, and breathe it so—*chacun à son goût*.

But as regards public conveyances and places of public assemblage, I see no reason why health authorities should not as properly prescribe regulations for cleaning and the removal of dust, and compel their practice, as they compel the sanitary disposal of sewage, secure pure drinking water, and condemn noxious articles of food.

WHAT CONSTITUTES PNEUMONIA.*

By ANDREW H. SMITH, M.D.,

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Allow me to suggest a concept of an average case of pneumonia.

1. Granted that the patient, to begin with, is one of the multitude of who have pneumococci on the mucous surface of the air-tubes where the conditions being unfavorable for growth, they are harmless;

2. Granted that at some point nature's provision for keeping foreign particles, including pneumococci, out of the air cells fails;

3. Granted, that perhaps only a single pneumococcus finds its way to the *pavement* epithelium that lines the infundibula and the air-cells, where the conditions for growth are every way favorable;

4. Granted, that from some cause, local or general, the vital resistance has been lowered;

These four postulates being granted, the succession of events will be as follows:

Where the coccus rests in contact with squamous epithelium a peculiar specific irritation will be set up in response to which a peculiar fibrinous exudation will take place into the air-cell. This exudate will constitute a culture-medium exactly fitted for the growth of the parasite which will immediately begin its multiplication and the formation of its appropriate toxin. This toxin being taken up into the blood will produce systemic effects in proportion to its amount and virulence. The exuded material constantly increasing in amount, will overflow into adjacent cells and adjacent lobules, carrying the infection with it, until a sufficient area is involved to give rise to appreciable physical signs. The advent of these signs will be earlier in proportion as the observer is a competent auscultator, and is thorough in his examinations. The proportion of toxin in the exudate will increase until the latter becomes so poisoned as to be unfit to act longer as a culture medium, when the further growth of the parasite in that immediate locality will cease.

Meanwhile the pressure of the exudate, aided by the coagulating effect of the toxin will have brought about arrest of circulation in the capillaries derived from the *pulmonary artery*, and the *function* of the part will be completely suspended. The nutrition of the tissues, however, will continue to be provided for by the *nutrient* capillaries derived from the *bronchial* arteries and having the greater power of the left ventricle behind them, and thus gangrene will be averted.

So long as fresh areas of lung are being invaded so long will the systemic disturbance continue; but when the formation of toxin in the zone last to be invaded has ceased there will be a cessation of the general toxic phenomena, and a fall of temperature marking the crisis will take place. There is evidence going to prove that the crisis is hastened by the formation of an antitoxin in the infected tissue as a secondary process. So soon as the active process in a given area has ceased a process of repair is set up in which the nutrient vessels and the absorbents are the principal agents. As the result of this process the exudate is liquefied and is removed, partly by expectoration, but mostly by absorption. As this is accomplished the circulation through the functional vessels is resumed, and the part is restored to its normal condition.

The local conditions in developed pneumonia are such that gangrene would be inevitable in every case were it not that the *nutrition* of the lung is maintained by a circulation distinct from that by which the *function* is carried on. While the capillaries derived from the pulmonary arteries are completely occluded for many days in the affected part, those from the bronchial arteries are scarcely implicated and the nutrition remains intact. The significance in pneumonia of this double circulation was overlooked until the writer drew attention to it in the early nineties, and even now is very generally ignored.

So, too, is the difference overlooked between the columnar epithelium of the tubes and the pavement epithelium of the air-cells in relation to the growth of the pneumococcus, though a factor of transcendent importance in the concept of pneumonia, since it makes it clear how it is possible to have pneumonia ever present potentially, and yet continue to escape it actually.

As to what constitutes pneumonia, I contend that a single pneumococcus lodged in an air-cell and causing there its specific irritation and consequent exudation, presents all the essentials of the disease. It matters not if, ten minutes later, the organism is dislodged and swept away by the exudate, the patient even then has had a pneumonia, if only a *monococcal* one. Or, if later the bronchiole terminating in the lobule invaded becomes blocked, and the further spread of the infection is prevented, the patient may escape with a *unilobular* pneumonia, but he will have had a pneumonia all the same. Indeed, I strongly suspect that such abortive attacks are very common.

But what then becomes of the notion that the disease is at first *general*, becoming afterward *localized* in the lung? As if an infecting principle settled

*A five-minute paper read before the Medical Association of the Greater City of New York, December 11, 1905.

down upon the victim, from somewhere, perhaps from the clouds, and, after rioting about for a while, in the system at large, at last selected the lung as a convenient habitat. And this because the *general symptoms* commonly precede the *local signs;* which is like contending that the fire is an after-effect of the smoke because we commonly see the smoke first.

Has it never occurred to these brethren that the fever thermometer is a more sensitive instrument than the stethoscope?

If any one take exception to this criticism, let him point out in the average pneumonia the *extra-pulmonary* source from which the system is infected while as yet the lung remains free.

18 East Forty-sixth Street.

DANGER AND PROTECTION IN *X*-RAY WORK.*

By W. LEHMANN, M.D.,
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Considering the many publications dealing with the dangerous effects of the Roentgen rays and the ways of avoiding them, and regarding the fact that already in textbooks, as for instance in Allen's excellent monograph, various devices have been given for protecting operator as well as patient, it seems almost superfluous to take the matter up again, but recent experiences have led me to review the subject.

When the Roentgen rays first were discovered it was necessary to make long exposures in order to get good pictures of the parts examined. Following these long exposures to which the patients were subjected, undesirable effects have been observed quite frequently. Burns, falling hair, atrophy of the skin, etc., were common occurrences. Soon the power of the apparatus was increased, and such a bright light from the *x*-ray tube could be obtained that the exposures which lasted for minutes in the beginning could be cut down to as many seconds, as early as 1896. The physiological effect of the rays upon the skin shown by the observed ill effects was then used to influence diseases of the skin. Thus use of the rays was made indiscriminately and again unexpected results reported. Only the wider and wider knowledge of the different qualities of tubes of lower and higher vacuum, of brighter and weaker light, enabled us to estimate the physiological as well as chemical effect of a given tube. Practical devices, as Holzknecht's chromoradiometer and others made it possible to give a certain therapeutic dose with an exactness approaching the well-known minimum and maximum dose of drugs. Our patients could be subjected to the rays for diagnostic examinations as well as therapeutic procedures in a comparatively safe way. Very few bad effects in patients have been reported lately. With experience we have mastered the difficult subject and are able to give the benefit of the rays to our patients without violating the first medical law: *nil nocere.*

But not yet have we overcome all difficulties of this work. Physicians themselves have experienced here and there the insidious effect of the new power upon their body. Every time the physician gave his patient a dose of his medicine he took it himself, taking a teaspoonful each time while the patient got a tablespoonful. These small doses had not the prompt effect of the large ones, showing results only with time and accumulation, so that years were necessary for all the dangers to the operators to be found and traced to their source.

The question of protection of the operator has become an important one, especially during recent years, when not only changes in the skin but the affection of vital organs have been reported as due to the ray.

Using their hands as a means to control the vacuum of the tube, a large number of operators have complained of a chronic eczematous condition of the skin, which became swollen, dry, boardlike, thickly skaling and cracking; ulcerations and sometimes unrelievable pains followed. The nails became dry, brittle, fissured and distorted, fell out, and were often permanently lost; the owner of such a hand was not only unable to do surgical work or disinfect the hand, but had in most instances to complain of severe pains beside the ugly appearance. We have too many examples of unlucky operators right here in town to necessitate a review of the existing literature. Repeated exposures often led to falling hair and permanent alopecia, and atrophy of the skin sometimes with a scleroderma-like appearance followed; the development of more or less extended teleangiectases did not only make conditions worse but soon proved to be incurable and not yielding to any therapeutic attempt whatever. Thus the soil was prepared for all kinds of infections, for painful and permanent ulcerations which in some instances finally became malignant, and cases have been reported in which amputation of fingers or even the whole hand has been considered necessary. It is not only in pathological ground that epitheliomata has developed—Mendes da Costa has reported seven cases of epithelioma in 71 cases of lupus treated with the rays—but an originally healthy skin, changed only by the Roentgen eczema, has degenerated into carcinomatous growth with sometimes a very rapid malignant course and leading to death in several instances. The ill fate of the Roentgen operator witnessed here in town is still vivid in our memory,* increasing the number of similar instances of which two years ago Allen reported four in his book. Since then about half a dozen more have been published.

Besides the local effects, general disturbances are not uncommon. Seguy and Quenisset have reported that continued work with the Roentgen rays caused peculiar cardiac palpitation with general uneasiness, followed by arrythmia. Probably everybody who operates Roentgen apparatus has observed accelerated action of the heart after prolonged exposures. Dr. C. M. Cooper called our attention to arteriosclerotic changes a few months ago. Likewise the extreme nervousness of some *x*-ray operators is probably due to the ray. Butcher is inclined to accuse the action of the ionized air in the *x*-ray room, an action which as yet is not determined but perhaps later will be considered as more important. On the other hand, we run across symptoms of the brain which are decidedly due to the Roentgen-rays. Dizziness, vertigo, headache, or a disagreeable full feeling of the head, and nausea have been observed. Walsh reported cerebral symptoms, closely resembling sunstroke. I do not think that this question has yet been settled; we probably will witness more serious disturbances with time. The peculiar affinity of the Roentgen rays to lecithin, which forms a large percentage of the chemical substances of the brain tissue, forces us to follow up the subject. Werner among others proved experimentally that lecithin exposed to the rays showed chemical disassociation, the products of which, like cholin, create, after injection into the body, symptoms very similar to the ones produced by the *x*-rays themselves. Gastrointestinal troubles can be found also in the

*Read before the San Francisco City and County Medical Society November 15, 1905.

*Mrs. A., who died of internal metastases of a carcinomatous growth which had developed on the soil of a "Roentgen-hand."

literature. Although in many instances not with certainty traceable to the rays, they are worth consideration in view of the publications of Oudin, Barthelemy, and Darier. Walsh reports the case of an *x*-ray worker, who gave his abdomen repeated exposures of long duration. After some weeks he complained of abdominal symptoms, pain, tenderness, flatulency, and diarrhea. While in the country these symptoms disappeared, but returned upon renewing the work. He got rid of them finally by protecting his abdomen with sheet lead. It seems the place here to mention Heller and Linser's experiments on rabbits which, after prolonged exposures, showed beside other changes, all symptoms of grave nephritis.

By far more important are the changes found in the genital organs, changes which lately have aroused the interest of the medical world and have frightened some Roentgen operators greatly. Already in 1903 Albers, Schoenberg, and Frieben published the results of experiments with animals. They kept rabbits in the *x*-ray room for several months several yards away from the tube and were surprised to see that these animals did not produce new generations, a fact which was found to be due to necrospermia, azoospermia, and even atrophy of the testicles. Buschke and Schmidt confirmed these findings and Halberstaedter in his experiments obtained the same results, apparently more quickly reached, in ovaries. Foveau observed cessation of menses following atrophy of the ovaries in thirty cases of fibromyoma of the uterus treated with the rays. The explanation of these facts, occurring without the slightest change in the integument, without burning or dermatitis of the skin, was easily given by the strong, almost specific affinity of the Roentgen rays for young, growing, constantly regenerating epithelial cells. These reasons, originally stated by Scholtz, had been supported by Heinecke, who found experimentally a destruction of lymphoid tissue, medullary cells and glandular substance, before other parts were affected.

By and by similar results came to the light in men: the treatment of pruritus ani was followed by the inability to generate and atrophy of the testicles. Philip dared to use this remarkable property of the rays therapeutically, sterilizing phthisical individuals. The proof of these astonishing and important facts was given by Brown and Osgood in the *American Journal of Surgery* in a paper which communicated the thorough investigation of the authors in an *x*-ray tube factory: eighteen workingmen, of strong good health and from twenty-two to forty years of age, were found completely azoospermotic. None of these had had a disease of the genital organs. None had functional disturbances or abnormalities. Men employed for more than three years had no spermatozoæ at all, others showed necrospermia and oligospermia alternately. Half of them were married and had no children since handling *x*-ray tubes.

It seems to me these facts are not only surprising but frightening. If somebody were to try to make inquiries of all men who have handled or are handling the rays, alarming results would be obtained. Not only among the early operators in this field who were ignorant of the dangers connected with the rays, but also among younger men who take up the work without proper knowledge and care, facts could be revealed which would not only deter them from further exposing vital organs and essential faculties, but would discredit the entire use of the Roentgen rays.

This is not the place to enter into a discussion over the theoretical ways in which the rays act. But it seems necessary to touch upon the experiments of Baermann, Linser, and Helber which convinced the authors that the primary changes produced are those in the endothelial cells of superficial blood-vessels, followed by the destruction of blood cells and the formation of certain toxins, which would be apt to transport the action and produce effects on parts of the body far distant from the parts treated. Fortunately these experiments are not quite conclusive—otherwise all our devices of protection would be useless if they leave the possibility of the rays reaching indirectly well guarded parts of the body. In this line an autopsy recently performed by Dr. Ophuels resulted in some surprises, revealing complete atrophy of both testicles, both seminal vesicles, and the prostate in a man who had been treated for months and months, and whose genital organs had always been carefully protected from the direct access of the rays. However, the man had an old gonorrhea and splenomyelogenous leukemia of the worst kind, both facts which would account for the findings. Furthermore, leukemic enlargement of neck glands which had appeared several months before had disappeared under continued treatment without being directly exposed. Still an explanation may be possible by the effect of the so-called "secondary rays."

As the cathode rays transform their energy into Roentgen rays by striking the target, so the Roentgen rays produce secondary rays by striking the glass wall of the tube, striking the air between tube and patient, and striking the tissues of the body itself. To be brief, this much may be said about the secondary rays, discovered by Walter, that they are very similar in action to the Roentgen rays, more highly penetrating, less effective physiologically and chemically, and produced more profusely by high penetrating *x*-rays than by rays sent out from a soft tube. As the secondary rays move from the point of origin in straight lines in all directions, it is evident that they are able to reach a point which is shielded from the directly impinging *x*-rays.

Thus we have to shield the operator from secondary rays as well as the *x*-rays. For examining the vacuum of the tube we never use our own hand, we provide ourselves with one of the many radiometers like those of Walter, Benoist, Biesalski, or better, follow the device of Kohl's artificial hand, brought into a convenient form in Beck's osteoscope or Schmidt's cryptoscope. The latter is a fluoroscope, before the screen of which a bony hand enveloped in thin tinfoil (representing the fleshy parts) is mounted. The hand using the apparatus is protected by a lead shield surrounding the handle, the eyes, and the face by a lead glass plate covering the barium platinocyanide screen.

Obviously the operator will stand as far from the dangerous tube as possible, always behind the plane of the anode and above the level of it: the latter can be carried out especially well with the tube placed very low and the operator on a floor several feet higher. In the best tube, however, there are aberrant cathode rays, apt to produce Roentgen rays at any point of the tube, so that above as well as behind the "*x*-ray field" still a considerable amount of dangerous light exists as fluorescent screen and photographic plate will reveal. Therefore a number of operators advise the use of a tube box made of or covered with an impermeable metal, preferably lead, a box which opens only on the under surface with a small hole, allowing exit to the rays. Although the holes for the lead wires and other avenues of escape for the rays, the heavy weight, and the difficult handling of the heavy apparatus were objections to it, it was practically safe. But only very low tubes al-

lowed the use of the box, as otherwise the high-tension current very frequently jumped from the electrodes of the tube to the surrounding metal. The most serious objection, however, which should suffice to abandon all devices of the kind is the impossibility of controlling the vacuum of the tube, of observing the changes in the brightness and penetrability of the light; without a permanent control of that we lose sight of all consequences which may follow a given treatment, and we are unable to estimate the result of a diagnostical exposure. Better was the idea of making this box or the tube itself of lead glass. Only a small round part of the glass wall, opposite the target, was of thin glass allowing exit to the rays. Tubes of this design are on the market, but of very small size and unable to stand the large current of a modern coil. When these lead glass bulbs can be made of the large size and the same design as our modern water cooling tubes, for instance, are, we will have the ideal apparatus for safe work. Half bulbs of lead glass to be attached to the tube and absorbing all the rays which leave the tube through its under half (besides a small opening provided for) are practical, but so heavy that they must be fixed to the tube stand in a special way with the tube resting on them.

The main protection for the operator is a heavy lead-covered screen between the tube and his body, and the possibility of handling the apparatus and appendages from behind. This screen made of wood and covered with lead one-sixteenth of an inch thick consists of two parts each, six by three feet, connected by hinges, and running on wheels, so that it can be moved with ease and brought to any position wanted to shield the operator. The crack between the two parts is also carefully protected with sheet lead, the screen provided with a small lead glass window which allows the physician to observe tube and patient and which although practically impermeable can even be closed by a lead shutter. If this screen, which in Albers-Schoenberg's laboratory is enclosed on four sides forming an unradiable closet, is to be of real benefit, the operator should be enabled to set in action and control every apparatus in the room from behind. A switch table or a wall plate provided with as many connections as necessary will answer the purpose. The switch table in the Roentgen Department of Cooper Medical College (furnished by Hirschmann, Berlin) allows the regulation of the strength of the primary current and the change of the poles, the connection with the coil with or without condensor, the connection with the motor interrupter (providing a rheostat for the regulation of the speed of the motor), with each of three different platinum electrodes of a Wehnelt interrupter outside of the room, and finally a variable connection with the four primary layers of the coil thus permitting changes in the self-inductance of it. The strings of the series of spark gaps as well as a balanced string working the regulation attachment of the tube can easily be fixed so that they run along the ceiling and end in handles which will be found behind the screen in easy reach of the operator's hand.

Thus practically all the work beginning with starting the primary current and ending with the regulation of the vacuum of the tube while in action can be done from behind the screen. I may be permitted to add that all these arrangements are only possible with a coil. A static machine cannot be handled from a distance; another and the most important reason against the use of the static machine for *x*-ray work, besides other disadvantages which have been alluded to in other places.

The use of a large mirror placed on the wall opposite the tube, and in plain view of the operator, will enable him to control the tube without a window in the screen, or the window in the lead-protected closet is not directed towards the tube but toward the mirror, allowing the observation of the reflected image of the tube.

After having placed in position patient and tube, we go behind the screen and give treatments, or make diagnostic exposures without the slightest injury to our own body. However, beside plates to be made and treatments to be given we are frequently called to make examinations with the screen. As far as the extremities, joints and head, bony diseases, or fractures and dislocations are concerned we refuse to do the work. In all cases of this kind the film of the plate will give a clearer evidence of disease or of small splinters accompanying a fracture, than the diffused image on the screen. A few seconds are sufficient to make a plate, while examination will abuse our expensive tube for several minutes. Only in cases in which the Roentgenoscopy will furnish more and better details than a plate, cases in which the motion of internal organs has to be observed in order to clear up the diagnosis, will we expose ourselves for the sake of the patient. The ortho-Roentgenoscopy of the heart, the observation of William's sign in early tuberculosis of the lungs, of the differences of transparency of different parts of the lungs in in- and expiration, of the motion of the diaphragm and its change in abdominal diseases, etc., etc., will oblige us to leave our screen. As the fluoroscope is merely a plaything for exact examination, replaced long ago by the single screen used in the easily darkened room, we have no use for the mirror or reflecting fluoroscope advised by Johnston. In this apparatus the shadow cast on the screen is reflected by a mirror the image of which only can reach the observer's eye. Small protective screens with movable openings which partially shield the operator but interfere with the case of examination, are still better. Most certainly the best ways of protection are gowns of impermeable material. Complete suits, caps, aprons, sleeves, gloves, etc., have been made of material of different degrees of safety. The better they fit and the more the examination is facilitated the less useful is generally the material. The safer the outfit the heavier and bulkier it is. Sheetlead of considerable thickness alone is really safe, and it is evident that all devices made of that heavy material must be bulky and rather inconvenient. The protectives I am able to show you to-night * seem to solve the question pretty well—the heavy apron reaching from the neck to the knees is Roentgen-ray proof and is, in spite of its weight, without inconvenience; the cap made of the same lead-containing material covers face and head on all sides and is provided with lead glasses. The gloves are likewise light proof and still neat enough to permit the handling of screen and apparatus. Practically safe, the operator will prefer this secure feeling to the inconvenience which never lasts more than a few minutes. The general practitioner who uses his apparatus but rarely can hardly equip his office with all the devices of protection referred to; but every man who works with the rays more or less constantly should never neglect the possibility of serious results caused by the insidious properties of this as yet not entirely known medium.

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TRACHOMA IN CHILDREN.*

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TRACHOMA in the children of New York City and particularly in the school children, has occupied a prominent position in the public eye during the past two years, and has at last been recognized by the Board of Health as a decided enemy to be fought as strenuously as the other contagious diseases of childhood.

Two years age there was great ado in the public press over the epidemic of trachoma in the public schools. The disease was not truly epidemic, but for the first time it had been brought forcibly home to the Health Board by Dr. Richard H. Derby, the consulting ophthalmologist, that the disease existed in a large and increasing proportion in the school children. This large proportion was simply the natural increase of an insidious contagion, that had either not been discovered in the school children or had not been considered sufficiently dangerous in its effects to necessitate drastic measures.

It will be remembered that in 1886, after an examination of the inmates of asylums and public institutions for children of New York City, by a committee of ophthalmologists, Fellows of the Academy of Medicine, the legislature passed a law entitled "An Act for the better preservation of the health of children in institutions." This law required that the eyes of the children should be examined on entrance, and that cases showing contagious disease should be isolated. It also provided for a monthly examination of the eyes of all the children.

The caustic criticisms of the committee, on the care given to the condition of the eyes of the children in the institutions, and the enactment of this law by the legislature was productive of great and positive improvement in the condition of the institutions and their inmates, during the ten years following. This was ably shown in a paper by Dr. Derby, read before members of the Academy of Medicine about two years ago. It was then forcibly brought out that while the inmates of the public institutions were well taken care of, 60 per cent. of the cases entering the institutions came direct from the public schools, where no recognizance of the disease was taken. It is now a matter of history how ably the Board of Health met the situation. Hospitals were established for the treatment, operative and local, of the afflicted children, and a careful system of regular inspection by competent inspectors was formulated. Children showing the disease in an actively contagious form were excluded from school until cured, and milder cases were required to show evidence of regular medicinal treatment.

At the first inspection of the school children, as reported in a paper by Dr. Lambert, in January, 1903, 7,571 children out of 55,000 examined showed different grades of trachoma, or 13 per cent. This seemed a great proportion and it is interesting to compare the statistics compiled by other observers relative to the frequency in other countries. Boldt writes of the examination in Königsberg of 17,553 school children. Of these, 5,847 showed trachoma, or 31.3 per cent. After two years an examination showed but 538 children afflicted, and still later a reduction to 393 (2.2 per cent.). In 1880 in an examination by Dr. Jitta of the school children of Amsterdam, 35.5 per cent. exhibited the disease. In 1897, 16.7 per cent., and in 1901, 7.8 per cent. Dr. Edward Jackson, in the ophthalmic year book, gives the stitistics prepared by Eloui-Bey relative to the frequency of trachoma in the school children of Cairo. In 1898, in schools of the poorer class, 96 per cent. showed the disease. In three years the percentage fell to 85 per cent. In the government schools of Cairo the percentage of cases has diminished from 85 per cent. in 1884 to 34 per cent. in 1900.

Comparing these statistics it will be seen that New York even two years ago was not in such a hopeless condition, and we are sure the percentage of cases must have been greatly reduced during the past two years. It is interesting to note how the treatment by the Board of Health of the school children has lessened the proportion of afflicted children entering the institutions for children. At the New York Catholic Protectory the percentages in the male department, as compared with those of former years, are as follows: 1900, trachoma, 19.5 per cent; 1901, 14.9 per cent.; 1902, 15.9 per cent.; 1903, 11.3 per cent.; 1904, 9.2 per cent. In five years a reduction of one-half is shown, and other institutions that receive children of the school age where exclusion cannot be practised, must show a like reduction. It is seen, therefore, that while the crusade against trachoma by the Board of Health has been of the greatest and most lasting service to the school child, it has also been of great benefit to the unfortunate wards of our great city institutions.

The disease may be defined as an inflammation of the conjunctiva due to a specific organism characterized by a development of hypertrophied areas and followed by the formation of cicatricial tissue with its consequent contraction. There is little doubt that it is caused by a specific organism, which has yet to be demonstrated. Koch, while in Egypt, found in the conjunctival discharge, gonococcus and what is known as the Koch-Weeks bacillus. Neither of these, however, are regarded as the specific organism of trachoma. Dr. L. Mueller describes as a cause of the disease a bacillus with rounded ends, the colonies of which show glassy structureless edges, even with a magnification of eighty diameters (Jackson). The

*Read before the Medical Association of the Greater City of New York, May 8, 1905

disease is spread by being carried directly from one person to another. In school, the double desk, the loaning of pads and pencils, the occasional roller towel, etc., are familiar methods of extension. It is not believed that infection takes place through the air as a carrier. Stephenson particularly speaks of the immunity of teachers and nurses in the Hanwell Ophthalmic schools, and says that out of sixty-five nurses and sixteen teachers none were infected during a five years' service. Trachoma is not equally infectious at all times and under all circumstances. Its infectious quality varies with the amount of secretion. Usually both eyes are affected, though occasionally one finds a unilateral trachoma. As a rule the second eye is later attacked, as has been shown fairly conclusively by Raehlmann.

In this city the male sex is more subject to the disease than the female. In some of the schools which I examined the percentages shown, were, in the boys 13 per cent. and 12.7 per cent. while in the girls it was 1 per cent. and 2.9 per cent. In the New York Catholic Protectory the cases in the male department exceed those in the female by 13 per cent.

We meet with the disease in the two forms, acute and chronic. At first there are often no symptoms other than slight discharge in the morning, the presence of the disease being discovered accidentally. In other cases there is lacrymation, burning and itching of the lids, and sometimes sensitiveness to light. In acute form the symptoms are very similar to those of a purulent ophthalmia. The lids are red, swollen, and edematous, while the palpebral conjunctiva is greatly thickened. The ocular conjunctiva is also injected and swollen, sometimes showing decided chemosis. This is rarely sufficient in extent to endanger the nutrition of the cornea, as in purulent ophthalmia, though one does meet with corneal ulcerations occasionally. Often in the early stage of an acute trachoma one can see the characteristic granules in the conjunctiva, while later, when the acute symptoms have subsided, they can be easily demonstrated, particularly in the culs-de-sac. There they appear as opaque granules beneath the surface of the conjunctiva, sometimes discrete and prominent (the papillary form of Fuchs) and at other times forming confluent masses of a gelatinous appearance (the so-called gelatinous trachoma of Stellwag). The appearance is then one of subacute trachoma.

Later, if unchecked, there is contraction of the palpebral slit, due to the thickening of the upper lids, followed by the slow formation of cicatricial tissue with its consequent contraction. Often accompanying this condition is seen the vascularization of the cornea (pannus), with its diminution or possible destruction of vision. Iritis occasionally occurs, while entropion, trichiasis, and xerosis of the conjunctiva may follow in severe cases.

The form seen daily in the children of New York is the soft follicular trachoma, and here appears the difficulty of diagnosing between follicular conjunctivitis and trachoma. Some have claimed that the school children were suffering from an epidemic of follicular conjunctivitis rather than from trachoma, and have intimated that the strenuous efforts of the Health Board were rather far-fetched and possibly unnecessary. Fuchs gives rather an elaborate description of both diseases, but ends by saying "that they are often distinguishable only by their course." It has been my rule to classify as follicular conjunctivitis those cases in which the follicles were limited to the lower lids. In these cases they are lightly scattered over the lids in rows and are superficial. When, however, these same benign follicles appear on the upper lids, even without deep infiltration of the conjunctival tissue, the case should be classed as trachoma. Cases that respond to mild astringents in a short time, or to fresh air, better food, and to relief from errors of refraction are cases of follicular conjunctivitis. Where there is a doubt, it is safer to separate and isolate, as has very properly been done by the Health Board. Later, the hypertrophy and consequent shrinking of the conjunctiva will surely appear if it is a true case. The pathogenic microbe alone will furnish us with the elements for a scientific and positive diagnosis.

The course of the disease is very slow, and even under the best treatment will last for months. The treatment of the acute form which so closely resembles purulent ophthalmia, is practically the treatment of the latter disease until the acute stage has passed. Ice compresses, frequent flushings with solution of bichloride of mercury 1-6000 or with solution of formaldehyde 1-3000, and the use of solutions of silver salts every three hours are found of service. For the form other than the distinctly acute, treatment by the use of local astringents or by means of operation is practised. Of local astringents, glycerite of tannin, nitrate of silver, the newer silver salts, and sulphate of zinc have been found efficacious by some. I have found glycerite of tannin to be of little use. The old 2 per cent. of nitrate of silver solution is more effective than the newer silver salts which I have found to have but little effect on the trachomatous process itself, though they are useful in checking the excessive purulent discharge shown in some cases and particularly after operation.

The remedy, sulphate of copper, or blue stone, has been, and is, almost universally used in private practice and in the public clinics. I have not used a blue stone pencil for the past ten years. It has been our misfortune at the Protectory to be compelled to receive children from other institutions, notably from Randall's Island, where the blue stone treatment has been rigidly carried out. In these children and in others where long treatment with blue stone has been given, as in the public clinics, it has been very positively impressed upon me that the extreme cicatrization of the lids shown in these old chronic cases and ordinarily ascribed to the disease itself has possibly been in great part brought about by the long-continued application of the blue stone. The same amount of long-continued treatment with milder remedies such as nitrate of silver in 2 per cent. solution and the bichloride of mercury does not show this great cicatrization of lids. Dr. Sydney Stephenson believes that the long-continued use of the copper pencil is liable even to produce opacity of the cornea.

Of all remedies, I have found the use of bichloride of mercury the best. Keissing in 1890, and Darier several years ago, wrote of massaging the lids with 1-500 solution of bichloride of mercury, and very recently Dr. Parker of New York City in an article advocated its use in this way. For ten years I have used the bichloride of mercury solution 1-100 or 1 per cent. in the cases in which blue stone would ordinarily have been used. In these severe cases I have not found 1-500 solution strong enough. The application has been made every second day, and every part of the everted lids carefully touched. The after-effect in touching a case is to produce an eschar resembling that produced by application of silver nitrate. This is separated

by the second day, when the lid may be retouched. After two or three applications the lid does not show so much reaction. I have found that applications three times weekly, with flushings of the lids twice daily with a solution of bichloride 1-6000 gives the very best of results. When the case is not so severe, occasional touching with the bichloride solution 1 per cent. combined with the daily use of silver nitrate, gr. viii to the ounce and the bichloride flushings give excellent results.

Copper citrate in 5 per cent. ointment I have found of use in cases showing pannus. I have not as yet had sufficient experience with it to speak positively of its general efficiency. It is painless and can be given to the patient for home use. Dr. Emil Bock has written of the treatment of fifty-eight cases with copper citrate, with excellent results. He employs it twice daily in 5 per cent. and 10 per cent. ointments. There is very little reaction after its use. Van Arlt also advises its use two or three times daily, and prescribes it in the form of an ointment made with glycerine and starch. The operative methods are mainly scarification and brossage, the excision of the cul-de-sac, and expression. The first two I believe uncalled for, excepting in very special cases. I have never practised them. Expression, however, lessens the duration of the disease markedly, and also the tendency to hypertrophy with its consequent cicatricial contraction. I use the familiar expression forceps of Knapp with smooth or rough rollers, the ring forceps of Prince, which are used more as a fixation forceps for everting the lid and exposing the cul-de-sac, and a sharp curette.

In performing the operation over 600 times I have never found the use of a general anesthetic necessary. Cocaine in solution, even 20 per cent., I do not find induces sufficient anesthesia to perform a painless operation, as has been claimed by Dr. Bardes. It is necessary to use the powdered cocaine. I massage the powdered cocaine hydrochlorate into the exposed conjunctiva of the lids by means of a shell cataract spoon, two grains sufficing for both eyes. The eyes are closed for four minutes and a small quantity is again massaged in. In six more minutes the lids will stand the necessary amount of pressure. After the follicles are thoroughly emptied by expression I go over the surface of the lids with the sharp curette, removing the shreds of denuded membrane and picking out, after the method of Sattler, individual follicles that failed to rupture. After and during the operation the cornea is carefully cleansed of deposit, and the lids flushed with solution of formaldehyde 1-2000. Borated vaseline is then placed between the lids and a compress moistened with the formaldehyde solution is bandaged on. This is removed after six hours, and the eyes for the next three days are flushed frequently with formaldehyde solution 1-3000. After the third day silver nitrate 1 per cent. or some other silver solution is used daily if there is much discharge, and frequent flushings with 1-6000 bichloride of mercury solution are practised until the case is discharged. It is quite possible to discharge cases in which the follicles have been plentiful within two weeks, while under local treatment three to four months would be necessary to effect a cure. It has been claimed that the use of cocaine causes desquamation of the corneal epithelium. After the operation, the cornea will often be found steamy and sometimes quite opaque in appearance. A cotton tipped probe dipped in the formaldehyde solution will remove this gelatinous deposit, and the cornea will be found to have its normal luster. In the 600 cases operated upon I have never seen corneal ulcerations follow. The use of formaldehyde solution during and after the operation I find to be of greater service than the use of solution of bichloride of mercury. There is less reaction and much less discharge after its use.

Operations I believe to be admissible only in cases in which the granules are expressible. Where they are hard and inexpressible, the use of 1 per cent. solution of mercury bichloride gives the best service. Dr. Treacher Collins writes of the treatment of forty cases of trachoma by the *x*-ray at the White Oak School, Swanley, England. Exposures were made daily during the first week, and on alternate days during the second week. They were then discontinued for a time, until the amount and character of the resulting reaction became manifest. Some excellent results are recorded, notable in the severe chronic cases with pannus. Ruggio Pardo also claims excellent results with the *x*-ray.

Mayo has claimed cures by the high frequency current after twenty-two applications. He claims that the chief advantages of the treatment are, first, there is considerably less deformity in the lid after treatment; second, it is practically painless; and third, pannus clears more thoroughly. To summarize I wish to emphasize that,

First: The general use of sulphate of copper is not altogether harmless.

Second: The use of 1 per cent. solution of bichloride of mercury is harmless, and is equally good in its curative results as sulphate of copper.

Third: Copper citrate is apparently harmless, and is devoid of the objectionable features of copper sulphate.

Fourth: General anesthesia is unnecessary in the operation of expression. Cocaine hydrochlorate, in solid form, answers every requirement and obviates the necessity of a hurried operation, with its frequent extensive laceration of lid tissue.

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TWO CASES OF PSEUDOLEUKEMIC ANEMIA OF INFANCY.

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Von Jaksch in 1889-1890 was the first to describe this disease and give it this title. He based his diagnosis on the following points: That it is a disease of infancy, with marked oligocythemia, oligochromemia, permanent leucocytosis, marked splenic enlargement, moderate or slight enlargement of the liver, and at times enlarged lymph glands. Clinically it is differentiated from leukemia by the disproportion between the size of the liver and that of the spleen. In simple anemia the leucocytosis is not so great and the spleen is only slightly enlarged. According to Luzet this is a very rare disease and does not occur after the second year. He met with it only once in 1500 cases of anemia. He lays great stress on the presence of nucleated red blood cells.

Most of those who have written much on this subject claim that syphilis, rickets, malaria, and the digestive disturbances have nothing to do with the cause of it. Monti reports, however, more than three-fourths of his cases as showing evidences of rickets, and one patient had syphilis. The prognosis in the severe cases should always be most

guarded. All of Rotch's cases ended fatally, and 20 per cent. of the cases reported by Monti were fatal. One of my patients died in six weeks from the time I first saw him; the other is still alive after five months and is steadily improving.

My first case was that of a child ten and a half months of age. The father and mother well. It was breast fed for one month, then given one part of grocery milk to three parts of water until three months of age, when equal parts of milk and water were given. After the sixth month the child received three parts of condensed milk to one of water.

Twelve weeks before the child was presented at the clinic it was taken with diarrhea and vomiting, which has continued more or less persistently ever since. The child was now in a greatly emaciated condition, with distended abdomen and marked pallor; there was prolapse of the rectum. The child had an enterocolitis with ten to twelve watery stools a day containing mucus, blood, and curds. Vomiting was present also. On palpation the spleen was found to fill more than half the abdominal cavity and to extend well into the pelvis and to the right of the umbilicus. It was smooth and hard and notched on the right surface about the middle. The outline of its size is well shown in the illustration drawn from a photograph.

An examination of the blood was made by Dr. T. N. Hastings, of Cornell University Medical College, with the following findings: Hemoglobin, 30 per cent.; red cells, 4,064,000; color index, 0.35; white cells, 84,000.

Red Cells: Poikilocytosis, slight; polychromatophilia, marked; anisocytosis, marked; granular basophilia, slight. Nucleated red cells: Normoblasts, 39, megaloblasts, 4, malarial parasites not found.

White Cells: Differential (400 counted), polymorphonuclears 38.5 per cent., lymphocytes 44 per cent., large mononuclears and transitionals, 12 per cent., eosinophiles 2 per cent., mast cells 3.5 per cent., myelocytes 0.

The diarrhea was cured in this case and the child was given a modified milk suitable for its condition. It was put on the syrup of the iodide of iron and small doses of Fowler's solution, under which treatment there was a decided improvement; the spleen was reduced in size more than one-half in the course of six weeks; but then the child with no apparent exacerbation of symptoms, died.

My second case was in a child ten months of age, who had nursed for the first three months, and then it was given equal parts of milk and water. The child had had several attacks of diarrhea. For the past few months it had been getting bread and butter, farina, soup, and plain milk.

Examination showed marked pallor and a yellowish hue to the skin, malnutrition, beading of the ribs, enlarged and rigid abdomen. The spleen was enlarged four fingers below the free border of the ribs; the liver was slightly enlarged.

Blood examination by Dr. Hastings shows: Hemoglobin, 40 per cent., red cells, 3,800,000; color index, 0.53; white cells, 31,000.

Red Cells: Anisocytosis marked, macrocytes numerous, polychromatophilia marked, pallor marked. Nucleated red cells: four normoblasts found; malarial parasite not found.

White Cells: Differential (300 counted), polymorphonuclears 49 per cent., lymphocytes 42 per cent., large mononuclears 8 per cent., eosinophiles 0.5 per cent., mast cells 0.5 per cent., myelocytes 0.

This child is still alive five months after it was first seen by me, and is considerably improved. Its treatment has been proper diet, cod liver oil, and Fowler's solution. The *x*-ray has been used in this disease, with, it is said, marked benefit and some cures. I have had no personal experience with it, but that of others shows that it should be given a trial. Holding and Warren have collected twenty-two reported cases of pseudoleukemia treated by the *x*-ray; 27 per cent. being symptomatically cured, 59 per cent. improved, and 14 per cent. unimproved or fatal. Thus statistics seem to indicate that the *x*-ray should have the preference, or at least be used in connection with other modes of treatment.

It would seem, then, in these cases the disease was due to fatty feeding and gastrointestinal disturbance.

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By W. P. Northrup, M.D.,

New York.

The human animal seeks warmth. The Esquimaux returns from his long day on the ice to revel in his stifling hut. The dog and the cat curl up on the hearth and bake. In common with all animals, man eats when he is hungry and slakes his thirst as needed. It is only when the animal man reaches a high degree of civilization that he washes, purely to be clean. Not even yet does he take thought as to the air he breathes. Man does not thrive in overheating and lack of ventilation, neither do captive animals in like conditions. Healthful living in crowded surroundings demands intelligent regulation of heat and ventilation.

I congratulate the members of the New York Academy of Medicine that in the bright dawn of this much-mentioned twentieth century we can lay claim to being clean. We wash. We love, as good Americans, to throw back our shoulders, "chesty" fashion, and tell of the things we do. Sure enough, we eat, eat too much, sleep not enough, wash about right. Somewhere in coming decades we will wait for the later step: living in good air. Our rooms are practically bell jars. Doctors have not always thought of ventilation. When the reader of a paper sees his audience gently succumbing to a thickening atmosphere he need not take it to heart too much. It is only the Academy air. It is well that modern electric illumination does not dim and burn low in such. The human body, enveloped in hot, humid, used-up atmosphere, lives on, unapprehensive, stewing in his own juice; poisoning is over at eleven o'clock. The thin, dry man and his fat, perspiring neighbor sit down together in the bell jar, and amiably exchange exhalations, gases, and body emanations. They cough and sneeze into the swaying common investment, and severally inhale it again. Increasing mental hebetude leads gradually to nodding, torpor, and stupidity. Long experience teaches that close air is not quickly fatal. The cool, fresh air that is heaped up all about the building and cannot get in kindly bathes the

body on the homeward way, airs and restores the blood; so the incident closes and is forgotten.

Have we ever reflected how many hours a day our citizens live in bad air—overheated, moist, pent-up atmosphere? When New York wakes in the morning a majority shake themselves loose from the heavy air of an all-night entombment, emerge from unventilated rooms, engulf a lump mass of breakfast, and huddle into an elevated train. The ventilators are closed, and the bell jar again retains all body exhalations welling up about their heads. In the Subway the hurrying mass in rush hours are doubly heated, steaming, doubly enveloped in car and tunnel. The air is heavy, malodorous, moist. The human pack which sways and bowls about a trolley car has but little more ventilation, and the horse car, whose moribund slowness makes so little draft that even a man with a toothache could not object, is seldom ventilated. It hitches along the street, a covered tank of foul-smelling emanations, and yet, heaped high above it, crowding it at every side, at every crack and weather strip, is cool, oxygen-full air gently flowing about in the vain endeavor to get in.

The aforesaid majority hurry from close, overheated cars to counting room, back office, sweat shop or salesroom, bend over their work, sewing, typewriting, or counting till noon, and again till night, retrace the short space to the car, and swing from the straps to a late supper. Barely a half hour have they been, thus far, in out-door air.

There is one thing in New York that is all that can be desired, that is the combined open-air surface car. We do not relish the particular brand of tobacco which the laborer converts into pipe smoke and distributes from a forward seat; no more the ten-cent cigarettes (ten cents for twenty), nor yet the saliva-soaked dying butt of the perpetual smoker, but we can live and inhale the smoke, for there is a mechanism which selects our oxygen, maltreat it as we may.

I predict that the dawn of the twenty-first century will see New York houses ventilated. It is a long allowance—twenty centuries—but we seem to have needed it. It is within twenty years that forced ventilation has been installed in mines and Atlantic liners. The mechanical problem of ventilation has been solved for assembly rooms, lower decks, subcellars, tunnels. It is a mere matter of expense. Do we need further time for development and education? Twenty full centuries should be enough. We of our day drink and wash, next we will ventilate. We will see to it that the theater, the lecture hall, even the section rooms of the Academy, are ventilated. We will not be content to enter the bell jar with too many fat friends and swap breaths. There will be a demand for ventilation.

Steamheating, that iniquitous overdoing of a good thing, will be controllable. People must live in small rooms in this human hive, but the air can be changed often enough to carry away that which is used up. The time will come when people will refuse to breathe the effluvium from others' decomposing secretions, will refuse to draw deep into their vitals second-hand breaths.

The curse of living just now is overworking, overheating, lack of ventilation, not to mention worry and hasty eating.

By air de luxe I do not mean five-dollar canned air, made by the hired man. I mean another kind, delivered day and night without extra charge; one that does not smell of rubber nor dry the throat, that does not go to waste on the struggling nor annoy the dying. It is not one of those physical products controlled by syndicates, pooled by trusts, and cornered by kings. The poor throw it away, and the rich pick it up—in Switzerland. To disclose the secret, it is plein air (French spelling). It is not "made in Germany". It is *air to spare*.

I would counsel adding another floor to our houses, a roof garden. We buy our lots from bed rock to sky. Why not use the best part of them? There is a block, mountains high, of good air overhead. It is ours. With prodigal hand we roof it out, and distrusting our house atmosphere in sickness, buy canned air. When the patient fights against this, we wait until he is too sick to remonstrate, then we blow it into him.

Some time, when the gummy clay which clogs our feet has brought us to a standstill, some one will discover a new thought. Some brilliant intellect will point to our time, and laughingly jerk his thumb. "They ate, drank, and washed," he will say, "but they didn't think, and they didn't ventilate." We are indeed washers, not thinkers. We are getting perilously near the time limit. If the asphyxiating bell jar of our own devising does not finish us, let pass the euthanasia sponge.

57 East Seventy-ninth Street.

Spirillosis in Portuguese West Africa.—A. Yale Massey makes the following suggestions: That the term spirillum fever be used for the tropical cases, instead of relapsing fever, until the (?) various spirilloses are differentiated. That careful clinical notes be taken of each case where spirilla are found in the blood. That the biting insects of the locality be catalogued. That there be in each case a careful search for trypanosomes. He reports the case of a white Portuguese trader who was brought to the hospital in a very weak condition. He gradually sank into a semicomatose state, passing urine and feces involuntarily. The temperature of 103.4° F., dropped only at death, which occurred three days later. Examination of the fresh blood showed innumerable spirilla in a very active condition. They knocked the red blood corpuscles about most vigorously. This man had lived at a trading post several miles removed from any other white man. His associations and habits were native. The writer thinks that this disease has doubtless often been overlooked and put down as malignant malaria or blackwater fever, as the urine is very highly colored, although it is not the characteristic haemoglobinuric urine. That the disease is not very common, the writer believes may be explained by the fact of an acquired immunity. He suggests also that the disease may be carried by a large fly which more commonly attacks animals and only occasionally bites human beings.—*The Journal of Tropical Medicine.*

Word-Blindness with the Record of a Case Due to a Lesion in the Right Cerebral Hemisphere in a Right-Handed Man; with Some Discussion of the Treatment of Visual Aphasia.—Charles K. Mills and T. H. Weisenburg state that the two chief varieties of word-blindness usually described are known respectively as cortical word-blindness and pure word-blindness. As a rule in word-blindness the brain lesions are located in the left hemicerebrum. The only exceptions to this are supposed to be found in left-handed individuals. The writers report the interesting case of a patient 35 years old who had had a severe apoplectic stroke. The man was right-handed. When he recovered from the immediate effects of the attack he was found to be completely hemiplegic in the left side and almost absolutely aphasic. The aphasia was largely of a sensory type, and was persistent. The aphasia consisted principally in a word- and letter blindness which was due to a lesion in the right side of the brain. A systematic effort was made to re-educate the patient. In his training both the word image and the letters method were used. In six weeks he was able to recognize nearly all the letters of the alphabet. He has shown a letter, made to pronounce it, to write it, to pick it out from other letters, and to try to picture it. Simple words were taught him at the same time in the same manner. All efforts made to have him spell out letter by letter the words with which he became familiar, were unsuccessful. His mental picture of a word was of its entirety. He could not recall its literal components nor spell it.—*Medicine.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery

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PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, February 3, 1906.

TUBERCULOSIS SANATORIA: DO THEY PAY?

A RECENT issue of the *Lancet* contains a symposium on this subject, the word "pay" being used in its therapeutic and economic aspects. Naturally a diversity of views is expressed, based apparently upon the personal relation of the individual writer to direct sanatorium work. But from such men as Douglas Powell, Broadbent, Williams, Fowler, Wethered, Latham, and Walters, we may look for a dispassionate discussion of this popular question. In a general sense the verdict is far and away in favor of sanatoria. That they are expensive no one denies. That they attack the tuberculosis problem on the side of the effect rather than on that of the cause, is admitted. Yet the educational work which goes on in all well-ordered sanatoria and the fact that their graduates are missionaries of good hygiene, is not overlooked.

Douglas Powell declares that the "employment of sanatoria in the treatment of phthisis is now recognized as essential for the great majority of cases, for the reason that few people even amongst those who are fairly well-to-do can command those conditions of locality, house facilities, garden space, nursing help, and medical supervision which are the important elements of the treatment. And even amongst the more favored minority there are some who, having country houses with suitable aspects and other requirements, yet find the family conditions of life and temperament incompatible with restful home treatment. As regards the working classes, so discriminated against is consumption in our hospitals, institutions, and convalescent homes, that there is no alternative between the workman's own home or the scanty special hospital accommodation that exists and treatment in sanatoria." More attention should be paid to the matter of providing suitable employment for patients, so that they shall not become demoralized by a six months' idleness. Moreover, the majority of those who are benefited cannot return to the conditions under which they have broken down without the probability of a relapse. Experience shows, however, and most hopefully, that while they may return to the same general conditions they are often able to create, in view of their increased hygienic knowledge, a new environment for themselves.

There is a general opposition by the writers named to the erection of costly buildings. What constitutes a costly building depends entirely on one's own conception of that term. Mere architectural adornment falls under the ban, but every institution should have at least one substantial building, containing the administrative features, cooking arrangements, laundry facilities, etc., which can be depended on in all seasons and every kind of weather. Around this the more temporary structures may be grouped. Moreover, sanatorium results must inevitably be disappointing unless we make a sharp distinction between incipient and advanced cases, and segregate them accordingly. The good results reported from Saranac and Ray Brook in our own State are due in no small measure to an observance of this rule. It is useless to send patients, who ought to be at home in a hospital, miles away to a sanatorium, though, as one of the writers in the *Lancet* pertinently suggests, every general hospital and every special (chest) hospital should be in relation with a sanatorium.

Statistical evidence on all these points is in some respects contradictory, but on the whole it is decidedly encouraging. We must not pin our faith only on results achieved when the patients are leaving the sanatorium. The crucial point is as to the later history of these same patients. On this latter point Wethered writes as follows: "The majority of the patients who entered the sanatorium in the early stages of the disease and remained a sufficient length of time there will probably have been discharged as 'greatly improved and fit for work.' Other patients will have been sent out as 'unfit for work,' and advised to 'take things as easily as possible.' Inquiries into the future of these two classes yield peculiar results. According to statistics at the end of four years, about an equal percentage are alive and able to do light work. The explanation is that those who were discharged 'fit for work' returned to hard and unsuitable labor and surroundings, and many of them speedily relapsed, whilst those 'unfit for work' led quieter and more sheltered lives, capable, perhaps, of undertaking a little light work, and being carefully looked after by their friends or charitable institutions. They were thus able to drag on through an invalid life and did not suffer from severe recrudescence of active disease."

In both England and America the sanatorium treatment, especially among wage-earners, is perhaps too recent to allow of entirely dispassionate views. This much may safely be said, however, that it has yielded better results than any other plan thus far tried, and it has given a powerful reflex stimulus to the antituberculosis crusade, which is attacking this scourge of the human family all along the line.

A NEW DEFINITION OF MEDICAL PRACTICE.

MANY men, on the bench and off, have essayed to give a satisfactory definition of medical practice. Some have more nearly succeeded than others but none has evolved one that would, but for certain untoward circumstances, have given greater comfort to the "healers" and professors of the countless "pathies" of the day than Judge Deuel of *Town Topics* notoriety. A "naturopath," inappropriately named Allcutt, was recently convicted, in the Court of Special Sessions in this city, of illegally practising medicine, and was fined $50. Two of the justices concurred in this decision, but the third, Judge Deuel, handed down a dissenting opinion to the effect that the defendant did not practise medicine

and should therefore have been acquitted. The grounds of this opinion were that, "Outside of the finger tip treatment (the passing of the hands) he used nothing but 'old woman' remedies. A layman knows that a few spoonfuls of salt and water are harmless and that abstinence from pork, potatoes, and sweets may be beneficial. He examined the patient by asking questions, looking at her tongue, feeling of her pulse, listening to her heart and lungs, and then made a diagnosis. He said she had 'stomach trouble.' . . . But doing nothing but making a diagnosis and regulating the diet is not 'practising medicine.' Does all combined, diagnosis, salt and water, regulation of diet, and treatment, make out a case? Two of my associates answer in the affirmative. I dissent. . . . What the defendant did was as harmless as if, following diagnosis, he had said: "You have a cold. Go home, soak your feet in hot water, and go to bed"; infinitely less harmful than the tons and tons of so-called 'patent medicines' glaringly and speciously advertised as specifics for all manner of human ailments and yearly taken into the systems of the credulous."

This opinion, it is said, will be made the most of in support of the annual osteopathy bill in the New York State Legislature this winter, but we question whether it will carry as much weight as the supporters of the bill hoped it would when it was delivered. The author of it has since had an experience in another court—not on the bench—which has not enhanced his reputation for wisdom or widened his influence as a jurist.

The attitude of the medical profession in regard to the followers of a special mode of treatment, whether they are naturopaths, hygeiapaths, optometrists, or what not, is reasonable and consistent. Let all would-be practitioners, of whatever ism or pathy they may be, acquire a knowledge of the human body in health and disease, and prove the possession of this necessary knowledge by an examination before a legally constituted board of medical examiners—then let them treat disease in the way that seems to them best. There are many legally qualified practitioners who treat disease with few drugs, relying chiefly upon hygienic, dietetic, or hydrotherapeutic means. Medicine is unfortunately not yet a certain science, and no physician is compelled to give quinine in malaria if he does not see fit to do so. All that the profession demands is that he shall be properly instructed in the science of medicine as it exists to-day—the application of this science must be left to the individual judgment. There are good doctors and poor doctors, therapeutic optimists and therapeutic nihilists, but the law cannot discriminate between them, and does not pretend to prescribe rules of therapy; all it can do is to make sure that every man who essays to treat the sick possesses the necessary qualifications. It cannot eliminate the personal equation in medical practice any more than it can in other forms of human activity. It presumes, however, and justly, that a man who possesses a knowledge of medicine in all its branches is better qualified to treat disease than is one who does not. Such knowledge can do no harm to the conscientious opponent of drug treatment, and it surely would not render him less fit to practise intelligently his special form of therapy. If Mr. Allcutt will take a course of medicine in some recognized school and will then prove to the Board of Medical Examiners that he is qualified to practise medicine, he can return to his method of "finger-tip treatment," the prescribing of "a few spoonfuls of salt and water," and regulation of the diet, if he will—but he would not be likely to do so.

There is good in mental healing and there is good in osteopathy. The elder Charcot confessed that he had sent many patients to Lourdes, and we know of medical practitioners of the highest standing who have allowed their patients to submit to osteopathic treatment; but the special form of treatment was prescribed intelligently and because it was believed to meet the special indications in the individual case. The open-minded practitioner of medicine is catholic and rejects no therapeutic measure which he has reason to believe or to hope will benefit his patient, but, being catholic, he is unalterably opposed to any narrow system of therapeutics based upon insufficient knowledge of the science of medicine in all its branches. There is but one door through which one can enter upon the practice of medicine, and the attempt to climb in by the window is a confession of ignorance of the foundations of the healing art.

A Silly Bill in Ohio.

An old man with a stomachache will be in a parlous state in Ohio if Miss Anna S. Hall and Representative Hunt of Cincinnati have their way. The latter, presumably at the instance of the former, has introduced a bill into the Ohio House of Representatives, making it lawful "to kill a person suffering from intense pain and for whose recovery there is no hope." Everyone who has experienced it will fully admit that the pain of a stomachache may be intense, and no one will deny that there is no hope of recovery from old age. It is true, the bill provides an imaginary safeguard in that the patient's consent must first be obtained by some one who is not a relative or a presumptive heir; but a man, or a woman, with a pain legally defined as intense, may temporarily be *non compos* and weakly answer in the affirmative—and then the game is up. It is hardly possible to treat this question seriously, for it is too hideous to be regarded as anything but a grim joke. It is within the knowledge of almost everyone that some relative or friend, now living, has been believed, and even declared by the physician in attendance, to be beyond the hope of recovery. Consumptives, who once were gasping for breath and were momentarily expected to yield up their last sigh, are to-day leading an active and useful life; persons suffering from a tumor, pronounced cancerous and incurable by a council of physicians, have recovered and are carrying on their work with comfort to themselves and cheer to their families; the same is true of innumerable others who have been condemned to speedy dissolution and are yet alive to shame their doctors and rejoice their loved ones. "While there is life there is hope" is a saying so true that to deny it is an absurdity. There is a power in therapeutics, and a still greater power in the recuperative forces of nature, which it is inane to ignore. The Ohio legislators failed to reject this bill, when a motion to that effect was made, by a vote of 79 to 23, but we refuse to believe that this is a measure of the intelligence of this body of Solons. The seventy-nine may have thought it would be well to have some discussion on the subject before the

final rejection of this criminal suggestion, in order to instruct fool legislators in other States who might be contemplating a similar move, or they may have had some other motive; but that seventy-nine out of 102 men in any assembly outside of a lunatic asylum can seriously support this bill, which one sane member called "an insult to the intelligence of the House," passes the bounds of credulity. The thing is a silly joke, and we are unable to regard it as anything else.

The Retort Courteous.

Taking them by and large, the country over, it is probable that physicians are no more given to bumptiousness or to being puffed up in their own conceit than are the members of any other class or profession. Still an objective expression of opinion is always of benefit, and it may interest those who like to view themselves as other see them, to know the position in the ranks of toil accorded to physicians by some presumably intelligent, though hardly discriminating, laymen. In an editorial appearing on January 20 in the *Clinton* (Mass.) *Daily Item*, of which one of the trustees of the Rutland Sanatorium is the editor, it was stated, regarding the summary and apparently wholly unjustifiable dismissal of Dr. Bowditch, the superintendent of the institution, that the physician "was an employee of the trustees, just as their farmer or coachman is, and the Board therefore supposed it was at liberty to hire him or dismiss him at its pleasure." We are willing to concede that the men responsible for this high-handed exercise of authority must be hard put to it to find satisfactory reasons in explanation of their action, but it seems scarcely likely that a reply of the nature of the one quoted will better their position in the opinion of either the profession or the public.

A Triumph of Newspaper Medicine.

The medical editor of one of the New York dailies used often to say that medical journalism was played out, for a journal published only once a week or once a month could never compete with the daily papers; at best it could only republish in more elaborate, if less sensational, style what the lay press had printed days before. In view of a tremendous "beat" scored by the *Sun* last week, we are inclined to think the medico-lay editor was very nearly right. This enterprising journal published an interesting and circumstantial account of an operation for renal calculus, performed at one of the hospitals by a well-known surgeon of this city. All the details of the operation were graphically and, as it appeared the next day, quite accurately described. The point of special interest in the article was that the operation which it described was not performed until about twelve hours after the article had been published. "If you see it in the *Sun* it's going to be so."

Northampton County (Pa.) Medical Society.—The seventy-fifth annual meeting of this society was held at Easton on January 19 and the following officers were elected for the ensuing year: *President*, Dr. A. D. Raegan, Easton; *First Vice-President*, Dr. F. J. Hahn, Bath; *Second Vice-President*, Dr. H. C. Pohl, Nazareth; *Secretary and Reporter*, Dr. J. J. Quiney, Easton; *Corresponding Secretary*, Dr. J. E. Fretz, Easton; *Treasurer*, Dr. J. S. Hunt, Easton.

News of the Week.

The Cartwright Lectures.—The first of the three Cartwright lectures of the Alumni Association of the College of Physicians and Surgeons of New York, given by Baron K. Takaki, ex-Surgeon-General of the Imperial Japanese Navy, was delivered at the Academy of Medicine on January 25. The subject of the address was the prophylaxis of beriberi in the Japanese Navy. When he entered the service in 1872, Baron Takaki said the ravages of the disease were so serious that it appeared almost impossible to maintain the forces in fighting trim, and it was not until ten years had been spent in investigation and experimentation that satisfactory progress was made in preventing the malady. After numerous extensive studies in various directions, Baron Takaki was able in 1882 to announce definitely that beriberi was a disease of faulty nutrition and depended on a disproportion in the proteids and carbohydrates of the sailor's dietary. Rice and other carbonaceous foods preponderated, to the exclusion of proteids, largely owing to the practice of allowing the men to provide their own meals. They were allowed 18 sen each per day for the purpose, and they purchased the cheapest foodstuffs obtainable, in order to save a little pocket money out of their allowance. The diet had now been changed to one more rich in nitrogenous materials, and though the cost of feeding had been more than doubled, beriberi had become practically extinct.

The second lecture was delivered on the evening of January 29, the subject being surgery and surgical nursing in the navy. In Japan the Bureau of Medicine and Surgery constitutes one of the five naval departments. The training of the naval surgeons embraces the study of naval hygiene, construction of ships, epidemic and endemic diseases of all countries, especially along the coast; several foreign languages, dentistry, photography, medical electricity, disinfection, and methods of examining food. Nurses, in addition to the ordinary courses, are taught rowing, gymnastics, swimming, and pistol shooting. The Japanese surgeons in both branches of the service, he said, were sanitarians as well as practitioners, their aim being to prevent disease as well as to heal wounds. It was as important to select proper food for the men as good powder for the guns. The powder always had to be up to a definite standard, and it should be the same with the food. Up to December 5, 1905, the total casualties in the Japanese navy, as a result of the Japan-Russia war, amounted to 3,689, of which number only 700 occurred in the battle of the Sea of Japan when the Baltic Fleet was destroyed.

Health Conditions at Panama.—According to the report for November of Chief Sanitary Officer Col. Gorgas yellow fever has been practically eliminated from the Canal Zone, and malarial infections have been reduced to a minimum. In the seventeen months between July, 1904, and November 30, 1905, in Panama, Colon, in the Canal Zone, including all persons traveling to and fro between various ports, there were only 245 cases of yellow fever and 84 deaths. Within this period, of the employees of the Commission appointed in the United States 72 had yellow fever and 16 died. Of those appointed on the Isthmus 44 were taken ill with the disease and 11 died. Among the employees of the Panama Railroad Company there were 17 cases and 7 deaths; of those not employed by the Commission or the Panama Railroad Company, 112 cases and 50 deaths. For the month of November, 1905, there were in all this region only three cases

of yellow fever, and none of these were employees of the Government in any capacity. One occurred in Panama and two in Colon.

Two Sufferers from Appendicitis.—Dr. George R. Fowler of Brooklyn, who went to Albany to attend the meeting of the Medical Society of the State of New York, was taken ill there with symptoms of appendicitis, and was operated upon on Monday. On Friday of last week Dr. Andrew J. McCosh was successfully operated upon for the same condition at the Presbyterian Hospital, in this city.

New York State Hospital for the Care of Crippled and Deformed Children.—The fifth annual report of this institution shows that fifty-six patients were treated during the twelve months covered by the report, most of the patients suffering from tuberculous joint disease. The hospital has received a contribution of $500, to be used for transporting eligible, indigent patients living in especially the rural districts of the State to, and from the hospital. Applications for admission, accompanied, if possible, by the certificate of a physician as to the nature of the deformity, should be addressed to the Surgeon in Chief, New York State Hospital for the Care of Crippled and Deformed Children, West Haverstraw, N. Y.

Reception to Dr. R. T. Morris.—At a stated meeting of the Section on Gynecology of the College of Physicians of Philadelphia, held January 18, Dr. Robert T. Morris of New York read by invitation an address entitled, "A General Surgeon's Views on Some Pelvic Conditions in Women." The discussion was participated in by Drs. J. G. Clark, E. E. Montgomery, C. P. Noble, B. C. Hirst, T. R. Neilson, J. M. Baldy, John B. Deaver, and others. After the meeting a reception was tendered Dr. Morris by Dr. W. Reynolds Wilson.

California Appointments.—Dr. J. W. Ward, on January 8, was reappointed a member of the San Francisco Board of Health, and was at once re-elected president of the board. Drs. Arthur T. McGinty, W. M. Lawlor, and M. E. Magnus were appointed assistant surgeons in the emergency hospital service. Dr. William Quinn was made resident physician at the city and county hospital and Dr. Mary Halton was appointed volunteer inspecting physician at the girls' high school. Drs. Garrett Newkirk of Pasadena, and J. L. Pease of Oakland have been appointed members of the State board of dental examiners to succeed Drs. R. Cole and J. M. Dun, of Oakland.

The Harvey Society Lectures.—The seventh lecture in the Harvey Society course will be delivered by Prof. Frederick S. Lee of Columbia University on Saturday evening, February 3, at 8.30 o'clock, in the hall of the New York Academy of Medicine. The subject of the lecture will be "Fatigue". The eighth lecture will be delivered by Prof. L. B. Mendell on Saturday, February 10, at the same place and hour; the subject will be "The Formation of Uric Acid."

New York City's Milk Supply.—According to a report of the Department of Agriculture the average consumption of milk in the city exceeds half a pint per capita a day, or 875,000 quarts. If the cream consumed were estimated on the same basis as the milk, the industry would be shown to amount to over 1,500 quarts daily, for which more than 200,000 cows would be required. The report censures the manner in which the smaller dealers store their supply of milk, and it is stated that out of a total of 2,458 stores visited, only 454 were found where the milk was properly cooled, and where there was no communication with living rooms.

Rhode Island Homeopathic Medical Society.—This society held its fifty-sixth annual meeting at Providence on January 12. All of the officers were reelected, the list being as follows: *President*, Dr Cornelius J. Hasbrouck; *Vice-President*, Dr. George F. Allison; *Secretary*, Dr. Robert S. Phillips; *Treasurer*, Dr. Jeannie O. Arnold.

An Outbreak of Scurvy.—The German ship *Alsternixe*, from Hamburg, drifted into Santa Rosalia, Lower California, with the fifteen surviving members of her crew seriously ill with scurvy. Owing to adverse conditions, she had been out six months. The captain died at sea.

The Illinois State Board of Health.—At the twenty-ninth annual meeting of this Board on January 25, the following officers were elected for the ensuing year: *President*, Dr. George H. Webster of Chicago; *Secretary and Treasurer*, Dr. James A. Egan of Springfield.

A Gift to Science.—The Marine Biological Association of San Diego, Cal., has received a donation of $50,000 from Miss Ellen B. Scripps, one of its most enthusiastic members. This will be applied to the building of a magnificent laboratory and museum at La Jolla, one of the most picturesque suburbs of San Diego. Dr. W. E. Ritter, of the University of California, who is in charge of the biological investigations at this station, will leave in a few weeks for an extended tour of the orient.

Examinations for Civil Service.—An examination will be held this month by the Illinois State Civil Service Commission for attendance in the seven hospitals for the insane. The examination will be open to women between the ages of eighteen and forty-five years, and to men between twenty-two and forty-years. The subjects on which applicants will be examined and the weights or basis of marking will be: Common school requirements, 3; physical examination, 4; and oral examination as to qualifications, 3. The examining board consists of Dr. Harry G. Hardt, assistant physician at the Illinois Northern Hospital for the Insane, Elgin; Dr. Herbert A. Potts, assistant physician, Illinois Central Hospital for the Insane, Jacksonville, and Miss Nellie Fitzgerald, head nurse, Illinois Eastern Hospital for the Insane, Kankakee.

Civil Service Examination for Pathologist.—The State Civil Service Commission announces an examination to be held about March 1 for Pathologists at the Craig Colony for Epileptics, with a salary of $2,500 and maintenance. Application forms and detailed information may be obtained by addressing the Chief Examiner of the Commission at Albany.

Philadelphia County Medical Society.—At the business meeting held January 17 the following officers were elected for the ensuing year: *President*, Dr. Chas. K. Mills; *First Vice-President*, Dr. Jas. B. Walker; *Second Vice-President*, Dr. A. O. J. Kelly; *Third Vice-President*, Dr. L. J. Hammond; *Fourth Vice-President*, Dr. A. B. Hirsh; *Fifth Vice-President*, Dr. Chas. A. E. Codman; *Sixth Vice-President*, Dr. Jas. C. Chestnut; *Secretary*, Dr. Wm. S. Wray; *Assistant Secretary*, Dr. Ross H. Skillern, *Treasurer*, Dr. Collier L. Bower; *Censor*, Dr. Frederick P. Henry; *District Censor*, Dr. Albert M. Eaton.

River Tooting Nuisance.—After two extended hearings on the subject of the unnecessary whistle blowing by the captains and pilots of the river craft plying about New York City, the Board of Supervising Inspectors of the Steamboat Service at Washington has decided that under the present

laws the Federal government has no authority to abate or abolish the nuisance. The solicitor of the Department of Commerce holds that while the Government can and does prescribe signals, it has no power to prohibit the blowing of whistles if the masters or captains of vessels declare that it is necessary. The suggestion was made that the State authorities be appealed to, but as these have already shown themselves unable or unwilling to interfere, it appears that it will be necessary to approach the offenders themselves, *suaviter in modo*, in an effort to obtain by curtesy what it seems impossible to exact by force.

The Late Dr. Emmet Cooper Dent.—The following resolutions have been adopted by the Council of the American Medico-Psychological Association:

Whereas, By the death of our late associate, fellow member, and secretary, this Association has been deprived of one of its most worthy members and progressive workers, and,

Whereas, We, his associates, have lost a dearly-loved comrade whom we honored for his integrity, uprightness of character and sterling worth, whom we respected for his well-known high standards in professional and in ordinary living, whom we admired for his unselfish devotion to all that made for a higher manhood, and for his steady and unflagging interest in the suffering humanity to which he ministered, and whom we all loved as an ever loyal friend and companion; therefore be it

Resolved, That we extend to the bereaved family our heartfelt sympathy in their grief, and the assurance that his memory will ever remain cherished by us.

(Signed) Wm. Austin Macy, George A. Smith, Charles W. Pilgrim.

Obituary Notes.—Dr. Philip S. Orndorff of Rio, W. Va., died on January 16, at the age of seventy-two years. Dr. Orndorff was born near Winchester and served with distinction in the Confederate army. He had practised medicine for nearly forty-one years in Hampshire County.

Dr. Norman R. Miller of Lynn, Mass., died on January 18, after a year's illness, at the age of forty-seven years. Dr. Miller was born in Springfield, and received his medical diploma from the College of Physicians and Surgeons of New York in 1881. He practised for a time in Holyoke, and went to Lynn in 1884. Three years ago he sold his practise and accepted a position as superintendent of a sanatorium for nevous diseases near Boston.

Dr. B. F. Watkins of Bryan, Tex., died on December 25, at the age of seventy-three years. His illness began with a stroke of paralysis while performing an operation in 1902, and he had never been well since then. He was a native of Alabama and was graduated from Yale College, the University of Pennsylvania, and Bellevue Medical College, New York. He served through the Civil War in the Confederate army.

Dr. George Chismore of San Francisco died of pneumonia on January 11, at the age of sixty-six years. He was born in Ilion, N. Y., and went to California in 1854. He engaged in mining for a time, but later took up the study of medicine, and in 1872 received his diploma from the Cooper Medical College. He served for a time as acting assistant surgeon in the United States army and developed a large practice in genitourinary disorders in San Francisco.

Dr. A. L. Hersey of Oxford, Me., died in Boston on January 12, after an illness of only two days. He was graduated from the Medical School of Maine at Bowdoin College in 1853.

Correspondence.

THE SURGEON'S FEES.

To the Editor of the Medical Record:

Sir:—The correspondence relative to the fee question, which I published in the Medical Record for January 6, has called out a good deal of response—from editors, who gave the subject good analysis, to correspondents, medical and lay, who wrote letters to the editors. Please allow me to answer some of the points which seem to indicate that the writers are not quite familiar with this matter of the fee.

"The surgeon's skill is something that any intelligent man can acquire in the same length of time that he would require in architecture, civil engineering, or the law."

Answer.—Given two surgeons of equal standing, and a certain kind of operation. One surgeon's death-rate may be 2 per cent., and the other surgeon's death-rate 20 per cent., in a series of one hundred cases of operations of that particular sort. I imagine that buildings sometimes tumble, bridges give way, and law clients get into trouble, in cases in which Providence does not have to work alone and unaided.

"A student who is bent upon acquiring a special education can do so in four or five years very comfortably on $1,000 a year. At the rate of $1,000 an operation he would be able to pay for his whole education in sixty minutes."

Answer.—It was recently reported that statistics of a class ten years after graduation from one of our leading medical colleges showed that only 40 per cent. of the class remained in active practice, and I was informed on a trip through Ohio not long ago that 87 per cent. of all graduates in medicine had dropped out of practice in that State during a period covered by statistics. This would indicate that not all of the men who had spent several years in medical education at an expense of $1,000 per year, had found opportunity to pay for the education in sixty minutes.

"The patient takes all of the responsibility. He pays all the expenses of nurses, etc. When everything is ready, the surgeon comes in and does something that requires no more skill than filling a tooth, or hitting a bullseye at 300 yards, or drawing the plan of a house."

Answer.—Of the physicians who remain in active practice, about one-half have been ambitious to become surgeons, and have given themselves expensive special training. A fraction of 1 per cent. find in the end that they are adapted by nature for the life of the surgeon. The responsibility is so great that many of the best-equipped men are unable to carry it. The patient's responsibility should end when he has made a choice of the general practitioner who is to direct the selection of specialists. The physician then feels that the responsibility is all his own; but the surgeon who is called in feels so responsible to the patient, to the physician, and to the profession, that few remain to carry on that sort of work.

"If the patient dies, the surgeon's reputation is not materially damaged."

Answer.—I have under my care at the present moment two patients of notable social prominence who came from two cities in which there are surgeons of the first class. The reason that the patients gave for coming to me was that their surgeons had lost similar cases. If these patients remain in New York long enough, they will learn that I have also lost patients in similar cases. Meanwhile there is material loss for two surgeons in other cities.

"The idea that a surgeon should charge as much as he thinks the patient can afford is wrong. It fosters on the part of the surgeon a rapacity wholly at variance with the ideals of his profession."

Answer.—The surgeon customarily charges less than he believes the services to be worth, because he knows that the laity will not understand, and the physician who has called him may be subjected to criticism. We are usually weak on this point, to the injury of the dignity of our calling. If this correspondent fears that his doctor will call in a rapacious surgeon, he needs only to give the tip that inexpensive work is the sort desired, and his doctor can get it for him.

"Wealthy emotional people form the basis upon which high prices are created."

Answer, with three specific instances. Last year a physician from the western part of the State came to the office of Dr. X. with a gallstone patient. The physician had previously written Dr. X. that the patient would pay $250 for the operation, if one was decided upon. On personal interview Dr. X. perceived at once that the patient was a blunt-spoken, direct man of affairs, of the sort to whom one can speak outright and freely. He was told that there was something wrong about the proposed fee of $250, and was asked how much he was paying his physician for time and responsibility. The physician said that

he was not making any charge at all. The patient was a friend of his and it was worth the trip to the city to see the operation. Dr. X. said to the patient, "I am going to tell you exactly what I think, and you are at liberty to agree or to disagree. You should pay me $1,000 for the operation, and pay your physician the $250 besides, for his time and responsibility." The patient instantly agreed. There was not a moment of hesitation.

Here is a case of another sort. One that we hear a good deal about, but seldom actually see. It involves the same figures as the first case. A physician came to the office of Dr. X. from Iowa with a patient requiring excision of the superior maxilla. After the consultation, he took Dr. X. aside and said that the patient was prepared to pay $1,000 for the operation, and that $250 would be acceptable as his part of the fee. Dr. X. replied that he was perfectly willing to quarter or even to halve the fee, provided that the patient was aware of the transaction. Otherwise not a cent would be given. The physician was unwilling to have his patient know about any division of the fee, and took him elsewhere. Dr. X. learned subsequently that the physician was unable to get his patient operated upon in New York. If we are so rapacious that we can afford to keep the profession clean, the law of compensation works out pretty well after all, does it not?

The third case in illustration is this: Five or six years ago Dr. X. refused to operate upon an interval case of appendicitis with adhesions, for less than $10,000. The patient secured the services of another surgeon for one-half of that amount. Two years later he stated that he had made a mistake, as a complication that appeared had cost him much more than the amount of the originally proposed fee. He said that the larger fee would have been the better investment. That was the way in which a hard-headed business man looked upon the matter of insurance against complications. All three of these patients were wealthy. All three were in ignorance of what they were about. Not one of the three was emotional. On the contrary, they were all men who had ceased to make much response to impact from any quarter.

"What is a man of limited income to do if he values his life, or wishes to have the best skill for his loved ones?"

Answer.—Ask his family physician to see that he gets it. He can obtain the very best services with less trouble or bargaining than is often required for obtaining mediocre or harmful services. Experts who put the highest value upon their services are the ones to whom I send my patients with small means, and I have never known one of them to be caused any deprivation. Sometimes they have even had their hospital expenses paid for them, beside a special expense account for various examinations. If it was felt that their pride would be hurt by a knowledge of the fact, they were never informed about it.

"The surgeon should strive to render service for fees which will allow friendly relations to remain between him and the patient."

Answer.—This is an old idea which belonged to the days when kind men did the wrong things, and when the surgeon's training was not expensive. To-day some of us do not care whether we part as friends or as enemies, so long as we get the patient well. We are interested in the physiology rather than in the psychology of our patients. There is gratitude and friendliness of the right sort, and we all enjoy it. There is so much gratitude and friendliness that is morbid, or that has a string to it, that a good healthy kick is more healthful and refreshing. Is there a doctor who will deny this statement?

"The surgeon exceeds in one line, the general practitioner in another, equally high grade, and as representative of ability, effort, and time given to perfection."

Answer.—Granted! Take, for instance, a case of "dyspepsia" in a man of large and varied interests, whose working capacity is limited by his ailment. If the general practitioner recognizes the fact that dyspepsia is a symptom rather than a diagnostic entity, and that it means a functional disturbance for which a cause is to be found, he may send the patient to an ophthalmologist to determine if eye-strain is at the bottom of the trouble; to a neurologist in the effort at finding a central neurosis; to a gastrologist in order to get data upon the objective features; to a hematologist to learn if there is toxemia from defective metabolism; to a pathologist to learn the significance of characteristics of the excreta; to a surgeon to know if an involuting appendix or bile tract adhesions are present in the case and likely to furnish the precipitating factor. If the general practitioner goes at his cases in this way my argument is not that his fee should be less than that of the surgeon, but quite as large. An important part of the general practitioner's work consists in surrounding himself with experts in whom he has confidence. This in itself requires years of experience with various experts, and calls for proper compensation on the part of the patient who would avail himself of the physician's experience. I often wonder if the public is awake on this point.

"There are many country surgeons, and young men, who can do an appendicitis operation quite as well as the experts, and at a small part of the expense."

Answer.—The two surgeons who perhaps have the largest general surgical practice in America to-day live in a small town that was unheard of until they showed the profession what they could do, and placed the town upon the map. There is many a young man doing brilliant work who is not as yet known, or who has false ideas of modesty about letting us hear of him to our own advantage. If a patient wishes to have the inexpensive work of such a man, all that is necessary is for him to instruct his family physician to engage himself in the task of finding the men who undervalue their services, but who can, nevertheless, do as good work as that which experts have set before the critical jury of their peers.

"My physician called in a consultant after he had confessed his own ignorance about the case. The consultant charged $100, but did not do any good. Why should I not have discharged my own physician after he had confessed his own ignorance, and not have had both bills to pay?"

Answer.—This correspondent is either a "quitter," or else he probably received full value for services rendered without being aware of the fact. If he dropped his own physician just as soon as he found that consultants were to be called, he deserves to suffer the consequences. If his own physician, unable to help, called in a competent authority who determined that no one could help, the patient is now spared the expense and anxiety of future fruitless search, and his own physician is entitled to a fee for his services in bringing the expense account to a close. It required experience and knowledge of a high order to get the right decision.

"Surgeons like Dr. M. should not be sustained by the general practitioner, because he breeds the anarchistic and socialistic spirit with his fees."

Answer.—I know a good many surgeons and physicians who would be willing to work for one-fourth of their present incomes if the public would furnish funds for scientific or educational work in which they are interested, and toward which their professional incomes are bent in an altruistic way. All that they ask for is power for being useful to their profession and to the public. About two years ago the editor of *Science* summed up the testimony of correspondents on the subject of the Carnegie fund for scientific research, and he decided that the income from the fund would further about one per cent. of the objects for which it was intended. If the laymen will ask almost any rapacious physician or surgeon of recognized standing what salary he would accept for his personal use, provided that he could have the Carnegie fund at his disposal for research or educational work, the answer is likely to cause surprise.

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OUR LONDON LETTER.

(From Our Special Correspondent.)

SANATORIUMS—VITALITY OF A NATION—PATHOLOGY AT OXFORD ENDOWMENT—MOTOR AMBULANCE SCHEME—HOSPITAL FIRE—CELLULOID—SUICIDES—OBITUARY.

London, January 12, 1906.

Last month at the Liverpool Medical Institution a discussion was opened by Drs. Buchanan and Macalister with the question often asked here, "Is the Sanatorium Treatment of Consumption Worth While?" Dr. Buchanan suggested that there is some internal power working toward recovery in consumption as in other infective processes and that stimulation of this power might assist. This seems a vague indication, but he followed it up by urging early treatment upon principles based on our knowledge of etiological factors and of the effects of hygienic and dietetic treatment. Those principles, he said, admitted of no discussion and were best carried out in a sanatorium worthy the name by a medical man who thoroughly believed and enforced them in a systematic and exact manner with due respect to their truth and importance. His personal experience, he declared, enabled him to say he knew of no treatment so invigorating, so sensible, and so trustworthy and which held out so much hope and encouragement or afforded so good a prospect of success.

Dr. Macalister followed with a very different story. His experience had been disappointing. Although many cases had been treated in the early stages, a relapse had subsequently occurred in nearly every one. He regarded the treatment of the poor in such institutions as utterly futile, and said those who subsequently died from pulmonary tuberculosis did so in about the same period as they would have done had they never been in a sanatorium. The death rate had not diminished to any great extent since the advent of sanatoriums; in fact, the death rate and recovery rate were about the same as before, both in and out of the

institutions. In some of the most successful cases there was a strong tendency toward recovery, and this had more to do with the event than any treatment. He advocated inexpensive buildings. The great problem was the prevention of infection.

Dr. Colin Campbell lamented the contradictory and inconclusive statistics, the confusion as to classification, and the vagueness of the reports of so-called cures. Favorable results lay somewhere between the 60 per cent. of "economic cures" reported from Germany and the 3 out of 38 cases reported from Heswall as "arrested."

Dr. Crace-Calvert said statistics were adversely affected by the short stay of many—often six weeks, or even less—and by the kind of work and unsuitable surroundings to which the patients returned. He was for early treatment of incipient cases, to be followed by a time in the country, as then the patients had learned to carry on their treatment and much time was saved.

Dr. Ernest Nevins said when public bodies are urged to erect sanatoriums we may well ask, "Is it worth while?" From the point of view of social economy the reply must be unfavorable. Enthusiasts blame unsuitable cases for bad results, but the conditions to make cases suitable are impossible for the majority, and it is useless to teach a man a mode of life which he will never be able to follow out.

In reference to the subject of sanatorium treatment, the *Lancet* this week gives a sort of symposium by London physicians who are recognized as authorities. The articles are founded on questions submitted by the editors on several points of importance, but on which a definite reply was not expected and each writer was to take his own line. The collected essays form an interesting exposition of the current opinions on the subject. That sanatoriums are regarded as extremely valuable institutions is obvious; that there are limits to their usefulness must be admitted. Most advocates think that convalescent homes, or country colonies, are desirable for prolonging the treatment, and some consider such supplements necessary. There seems to be a reaction against the erection of costly buildings and a tendency to look at the subject from an economic point of view. The combination of insurance with sanatorium treatment, as in Germany, seems to some an essential part of a successful scheme, but while so holding it they do not see how it is to be accomplished in this country. It is suggested that statesmen might elaborate some form of co-operation between trades unions, provident and charitable societies, and so utilize enormous sums for the war against consumption. But most of these sums are already ear marked and politicians are too engrossed in their party disputes to study sanitation.

Dr. Hyslop of the Bethlehem Hospital takes rather a gloomy view of the state of the world, if one may judge from a paper on "The Vitality of a Nation," which he read on the 9th inst. at the Society for the Study of Inebriety. He said man's innate conceit leads him to claim exemption from the universal law of evolution and dissolution. But it may be argued that as all living organisms, and even worlds, live and die, so will he; as the universe is the tomb of dead and dying worlds, so is our earth the tomb of empires, and there is evidence of restrictions to the evolution of humanity; not only had mankind approached the summit of attainment, but is, perhaps, growing old. Our acquisitions and attainments, derived as they are from the artifices of civilization, he held to be not only impediments to true mental evolution, but tend to submerge and render less vital the human mental faculties. The rôle of alcohol was as potent in producing decay in a nation as it was in an individual. Therefore, we should put forth increased efforts to tackle this as well as every factor which is causing the empire to drift into premature senility and an early grave.

Dr. Rob. Jones thought his confrère too pessimistic, and regarded the increased altruism of the English people as a sign of progression rather than decay.

At Addenbrooke's Hospital, Cambridge, fire broke out about midday on Saturday. There was a heavy gale blowing, but fortunately it blew the flames away from the building or there would have been a disaster. The patients in two wards adjoining the room where the fire was burning had to be removed, and then the brigade subdued the fire.

At an inquest on a man who lost his life in a fire at a celluloid factory it was shown that, in spite of strict regulations, he was at work with a lighted candle in his hand. This the chief officer of the Salvage Corps considered criminal; and further this witness said he had lately found out that celluloid had been used for the heels of ladies' boots, and what would happen if a lady wearing such put her feet on the fender, he could not think.

The late Sir J. Burdon-Sanderson has left £2,000 towards the support of the Pathological Laboratory at Oxford for the purpose of research.

The Asylums Board is proceeding with its scheme for motor ambulances. One motor omnibus is in hand and others are on order. The southwestern district of London will soon have a complete motor ambulance service.

An octogenarian committed suicide on Tuesday. After a quarrel with his relatives, he said he would show them a trick, went upstairs, and was heard chuckling and laughing, but fell dead on the way down. He had swallowed prussic acid. The coroner's jury said temporary insanity, but did not seem to have inquired how he became possessed of the poison.

Mr. John Abernethy Kingdon, F.R.C.S., died during sleep in his 78th year, on the 5th inst. Mr. Kingdon was for many years surgeon to the Bank of England, close to which he resided. He had a further valuable clientèle among city men. He was also many years surgeon to the Truss Society. He was a Bart's student, took his M.R.C.S. as long ago as 1849, and was elected a Fellow in 1861. He had been vice-president of the Medical-Chirurgical Society, and contributed to the *Transactions*. He was also a member of the Pathological Society, a courteous gentleman, and most agreeable colleague on committees; he was much esteemed.

AMERICAN HOSPITAL ECONOMICS.

To the Editor of the Medical Record:

Sir:—I regret to state that the figure of daily per capita maintenance of patients at the Eppendorf Hospital, Hamburg, quoted in my address on Hospital Economy, is erroneous. My informant, perfectly trustworthy in his statements, as far as they went, was himself in error, inasmuch as his figures did not cover all the items that ought to be considered in computing total cost. The unquestioning acceptance by me of statements, put at my disposal in perfect good faith by a trustworthy friend, proved to be a mistake on my part, to which I must plead guilty.

Now as to the facts: According to the printed report of the managers of the Hamburg hospitals for the year 1904, the cost of daily maintenance of one patient at Eppendorf was 3 marks and 61 pfennige, amounting to about 82 cents, U. S. currency. Deducting from this the salaries of the medical officers, which amount to about one-twentieth (1/20) of the total expenditure of 2,276,230 marks, the daily per capita cost will be about 78 cents, which is more than double the figure quoted by me. If the salaries of the medical officers be not deducted, the figure will be 82 cents, nearly the treble of 30 cents.

The figure quoted in my address as the daily average for the large hospitals of Germany needs correction also, though it must be added that Eppendorf, being thoroughly modern, and being managed on advanced principles, is, like Nürnberg, one of the most expensively managed institutions.

Arpad G. Gerster, M.D.
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Progress of Medical Science.

Boston Medical and Surgical Journal, January 25, 1906.

A Study of the Larynx in Tabes.—D. C. Greene, Jr., reports his observations on sixty cases of tabes. Of these, nine, or 15 per cent., presented laryngeal complications; six, or 10 per cent., showed undoubted paralysis of one or both vocal cords; seven, or 12 per cent., were affected with laryngeal crises, three of these without evident paralysis of either cord. One presented a jerky movement of the cord in the excursion from the median line. The only form of paralysis observed was the abductor type. Of the six cases, five were unilateral and one bilateral. Three were partial and three complete as to degree. Greene notes that it is a remarkable fact that the paralysis should confine itself in the great majority of cases to the posterior cricoarytenoid muscle. The explanation seems to be that we have to do with a slowly progressive degeneration of the fibers of the recurrent nerve. The cord is drawn to the median line at first by contraction of the adductors, and later by actual atrophic shortening of these same muscles. Laryngeal crisis occurred in four cases with paralysis, and in three without. These crises are marked by pain and irritation in the larynx, followed by cough, dyspnea, and loud inspiratory stridor. Mild cases simulate whooping-cough. Death may occur in the severe cases. When present in the author's cases, they occurred among the earliest symptoms. We are justified in saying that the paralysis probably occurs early. Two clinical histories are given, in both of which examination of the larynx led to the diagnosis of tabes.

Contusions of the Abdomen.—Seven cases are reported by J. C. Hubbard. From a study of them he concludes that it is obvious that a patient who has received a blow upon the abdomen of any degree of force is in a critical con-

dition and must be under careful observation, for on slight changes in the physical condition depend the diagnosis and often his life. The absence of muscular spasm does not rule out an intraabdominal lesion, while its presence makes such a condition the more probable. Hot applications should be applied to the abdomen and the pulse recorded at frequent intervals. The urine should be drawn by catheter, if the patient is unable to pass it. Should the pulse rate steadily rise, even only slowly, or the abdominal spasm persist, or the urine be bloody, the case becomes distinctly surgical. The extent of the lesion produced bears no relation to the severity of the trauma. Of far greater significance is the condition of the abdominal wall; whether relaxed or contracted at the time of injury, the state of the bowel, distended or empty, and the length of time since the last meal or last micturition. Exact diagnosis must be secondary to the general diagnosis of abdominal trauma. In most of the operative cases the exact diagnosis of the nature of the intraabdominal lesion is not made till the operation, and in many of them it would be wrong to wait long enough to make such a diagnosis.

New York Medical Journal, January 27, 1906.

Intermittent Exophthalmus.—One case is reported by E. C. Alger, who gives a brief bibliography of the subject: True intermittent exophthalmus is a rare condition in which owing to changes in the orbital veins one eye is pushed forward to a greater or less degree out of the orbit into which it recedes again as soon as the venous pressure becomes normal, the process of recession being greatly hastened by pressure on the eyeball in front. Alger's patient was an Italian woman of 34 years, in whom the condition referred to came on suddenly as she was bending over to put on her shoes. She had nausea and vomiting, but the eye returned to its normal sight with vision unimpaired. Thereafter the accident was apt to recur whenever she placed herself in a constrained position, but the eye would replace itself if she straightened up. In one attack ice was applied to the eye and the patient later became blind. Whether the blindness was the result of the applications could not be determined. The author describes the minute details of the ocular condition. He notes as possible causes of the orbital venous congestion, anything obstructing return circulation and a weakness of the wall of the vein which might be either congenital or the result of disease. The treatment is largely palliative. Patients should avoid constricting neckwear, severe exertion, and postures tending to cause congestion of the head. A snug bandage may be worn several hours daily. If vision is failing and the attack does not subside speedily, exploratory incision into the orbit might reveal a clot or a varix. Palpation may locate the latter and the former may be suggested by the regular symptoms of retrobulbar hemorrhage.

Stool Examination in Starch Fed Children Under One Year of Age.—C. G. Kerley and W. C. Campbell report the results of 166 examinations made of the stools of 30 children. In order to make the test a severe one raw barley flour was used, cooked one and one-half hours. In some cases barley water formed the milk diluent; in others it was given plain. The technical methods followed are described in full. In 16 children the stool tests showed absence of starch from the evacuations. In 5 of these negative cases there was moderate and in 1 severe diarrhea. Three cases were persistently positive, that is, starch appeared in the stools. Of these 3, two had diarrhea. The remaining 11 cases were sometimes positive and sometimes negative to the starch test. Out of the entire 30 cases 23 showed a good capacity to digest starch. Of these 11 had diarrhea, seven showed a poor starch capacity. A reaction for dextrin was present at times in 10 children, having been found in 18 examinations. The authors interpret this reaction as meaning that dextrin was present in the stool, representing an incomplete starch digestion, due, perhaps, to the too rapid passage of the fecal contents, as it was present in several of the diarrhea cases, or it was due to a deficiency in diastatic enzyme, not enough being present in the intestine to produce a complete splitting up of the starch product.

Epidemic of Measles in Mexico.—B. L. Wyatt gives an account of this disease as occurring in the country named. Its clinical course differs but little from that observed in the United States. The prodromes in Mexico are generally less marked. The symptoms of the emptive stage are also less severe. Complications and sequelæ are neither so common nor so serious. Bronchopneumonia is rare. In the special epidemic referred to, enterocolitis was a common sequel; otitis media eczema and acne disseminata were all observed. The patients do well in spite of most unhygienic surroundings and customs.

American Medicine, January 27, 1906.

Some Problems in the Diagnosis and Treatment of Puerperal Infection.—B. C. Hirst asserts that but little progress has been made in the prevention, the recognition, and the cure of puerperal infection, though in frequency and danger it stands first among the diseases of women. He takes up in turn a full discussion of the bacteriologic examination of infected women as a means of precise and accurate diagnosis; the influence the results of this examination should have upon prognosis and treatment; the treatment of infection after labor by instrumental exploration and evacuation of the uterus; the present status of antistreptococcic serum as a curative agent; and, the lessons taught by practical experience in the operative treatment of puerperal sepsis by pelvic and abdominal surgery.

Intestinal Hemorrhage as a Fatal Complication in Amebic Dysentery, and Its Association with Liver Abscess.—Richard P. Strong reports four cases in which the fatal termination was due to this complication. The fact that in all the cases large liver abscess coexisted would seem to show that a close connection exists between intestinal hemorrhage and the hepatic condition. The idea that the destruction of such large amounts of liver tissue may sometimes bring about serious functional disturbances of this organ and lead to a condition which predisposes to hemorrhage must certainly be considered. While it is probable that more extensive observations will show that fatal intestinal hemorrhage in amebic dysentery may occur entirely independently of liver abscess, the cases to which Dr. Strong has referred would seem to show that at least when hemorrhage occurs in cases complicated with such hepatic disease it is likely to be very severe and that the bleeding is likely to recur. It is possible also that the occurrence of multiple intestinal hemorrhages in amebic dysentery may be occasionally of some importance in the diagnosis of liver abscess.

Diphtheria Antitoxin in Scarlatina.—J. H. Lopez finds that early curative doses of diphtheria antitoxin administered in scarlatina abort the disease, curtail suffering, and lessen the risk to the patient, one dose of 2000 units, being sufficient in the average case of sore throat due to bacterial infection, to effect a speedy cure. He also finds the serum equally effective in all anginas, be they scarlatina, tonsillitis, quinsy, etc., through neutralizing the toxins, and reducing the fever and local congestion which contribute to the patient's suffering and the element of danger. There are no contraindications, and only good follows such practice. Dr. Lopez states it should be remembered that the largest quantities of serum the most severe cases may require, running from 20,000 to 100,000 units, are not depressing to the heart, are not attended with any bad results or sequels, and are without a single element of danger. The author's experience is based upon private practice, and upon results obtained in an orphanage containing over 300 children, where there were many cases of scarlatina.

Chronic Enlargement of the Tonsils as a Factor in Etiology.—C. P. Nelson points out that enlarged diseased tonsils play an important part as portals of infection to the respiratory and digestive tracts. As chronic enlargement of the tonsils is very prevalent and as it leads to such dire results the physician should always be prepared to operate promptly, when necessary. This operation should be done as quickly, painlessly, and safely as possible. In view of the large number of deaths due to diseases of the respiratory tract, mostly caused by bacteria in the inspired air, it becomes imperative that we guard well the entrance thereto.

Journal of the American Medical Association, January 27, 1906.

Chorionepitheliomatous Proliferations in Teratomata.—R. T. Frank reviews the literature and theories of chorionepitheliomatous growths and metastases other than those in connection with the pregnant condition, and especially of those of the testicle. The theory favored by the author is that of Marchand and Bonnet, which assumes their origin from impregnated pole cells or early blastomeres, which, becoming freed, remain latent for a longer or shorter period, and then in response to some, as yet unknown, stimulus, resume their growth with the still inherent property of forming the structures found in the normal embryo. They are, therefore, genetically the twins of their hosts, and they may be highly complex in their development, strikingly suggesting the normal embryo, or very simple and giving very little suggestion of their origin. Gradations between the two extremes can be traced. Among the tissues found in these tumors, ectodermal structures are often prominent, and wherever teratomata occur chorionepithelioma may also occur, though absent in a majority of cases. All the ectodermal structures are of equal significance and probably assume a

special *Anlage* of fetal membranes to account for the presence of chorionectoderm. A special significance, however, must be accorded to the chorionectoderm in teratomata, like that accorded to a special tissue, such as skin or brain substance, because in most of the recorded cases it shows all the characteristics of the trophoblast of pregnancy, not only morphological (the three types of cell forms—Langhan's cells, syncytium, chorionic wandering cells—absence of vessels, etc.) but also physiological (vaso-destruction, fibrin formation, glycogen production). As in the growths following pregnancy, the chorionectoderm of teratoid tumors also assumes atypical forms, rendering their recognition difficult, and perhaps in some cases impossible. These atypical forms may present tissue similar to the so-called atypical form of Marchand, or, as the result of an excess of Langhan's cells, a more diffuse alveolar carcinomatous, papillary, cystic, or perithelial arrangement may be seen. Their true nature may be discovered by tracing a direct continuity with typical structures or a gradual but unbroken transition between the two. Frank thinks that the evidence of the nature of these growths is sufficiently established, the arguments of certain authors to the contrary notwithstanding. A bibliography of 95 titles is appended to the paper, and excellent illustrations show the microscopic structure.

Antigonococcus Serum.—J. C. Torrey gives a preliminary report of good results in the treatment of gonorrheal rheumatism with an antigonococcus serum made by the inoculation of large rabbits with cultures from an acute, untreated case of gonorrhea. The best serums were obtained by inoculations at intervals of five or six days with cultures from six to fifteen days old. The rabbits were always inoculated intraperitoneally. While he thinks that the most important factor in the good results obtained with the serum is its bactericidal action, he is inclined to believe that there is also an antitoxic action. Experiments with guinea-pigs seemed to indicate this, and clinical evidence also pointed the same way. In some of the cases of gonorrheal rheumatism treated with the serum there was a decrease of pain in the joints within twenty-four hours after the first administration, and this seems most reasonably explained by a neutralization of some of the gonotoxin. Mainly, however, the serum acts, in his opinion, by destroying the bacteria. It seems possible, he says, that it supplies enough immune bodies to dispose of the comparatively few gonococci in the chronic forms of the disease, though not enough to bring about the destruction of the great number of gonococci that are present in the urethra in acute gonorrhea. Experimental evidence fully to substantiate this theory is yet lacking. The serum, however, has been found to contain both precipitins and agglutinins for the gonococcus.

Antigonococcus Serum in Gonorrheal Rheumatism.—J. Rogers reports a number of cases successfully treated by the antigonococcus serum made by John Tory. The ordinary treatment is notoriously unsatisfactory, and while the serumtherapy has its limitations like all others, it appears to be a real benefit in these cases. It should be remembered, however, that it has little or no effect on existing urethritis, and so long as any traces of this persist there is danger of a recrudescence of arthritic symptoms. He calls attention to some of the difficulties of diagnosis, especially in women, in whom it is often undetected, and states that the use of the serum may be of value, as it will relieve the pain in a few days if the patient is gonorrheal. The possibility of a complication by another infection must of course be considered, but most joint and serous membrane affections occurring in the course of a gonorrhea can usually be attributed to the gonococcus. In any suspicious case he advises the injection of from 20 to 60 minims every day or every other day, beginning as soon as possible after the arthritic symptoms appear and continuing as long as the pain and disability last. Aside from an occasional erythema, he has observed absolutely no ill effects. The earlier the disease is recognized and the treatment commenced the better of course are the results.

Sodium Aurate.—F. H. Verhoeff believes that he has found an agent combining effective germicidal power with lack of toxicity to the tissues in sodium aurate, which is prepared by cautiously adding sufficient of a 5 per cent. solution of sodium hydrate to produce a faintly alkaline reaction with 15 grains of commercial gold chloride dissolved in 50 c.c. of distilled water. To this is then quickly added 100 c.c. of a 1 per cent. boric acid solution and the whole thoroughly shaken. The total volume should now be made up to 200 c.c. with physiological saline solution, filtered and kept in a glass stoppered bottle. The final solution should have a faintly acid reaction. When prepared as above directed this solution, in strength of 0.5 per cent. gold chloride may be repeatedly dropped into the conjunctival sac without causing irritation or hyperemia. Tests of its bactericidal power showed the 0.5 per cent. solution to be more powerful than the 1 to 1,000 solution of mercuric chloride, while the apparent difference in toxicity is still more marked. Verhoeff thinks it can be safely used in the treatment of the eye and of genitourinary diseases, so far as any remote toxic effects are concerned. The effect, however, of the absorption of large quantities of the antiseptic at frequent intervals remains to be studied. The penetrating power of the fluid is shown to be great by its bactericidal power in the presence of albumin. He finds it difficult to account for this bactericidal action, but thinks it likely that it is due to the replacement of some important radicle in the bacterial protoplasm by gold, which is itself antiseptic. To explain why it kills bacteria in less than a minute while it requires hours to react with albumin, and to explain its harmlessness to tissue cells is also difficult. Lawrence J. Henderson, in a supplementary note, points out that it gives up gold when shaken up with neutral olive oil, and that it completely coagulates albumin when reduced in its presence by ferrous sulphate or other substances. The first of these facts is significant since the lipoids of the cell wall have much the same solvent action as oil, thus explaining the penetration of the cell by a simple physical mechanism. The second fact suggests the probability that during the reduction of the gold that colors the killed bacteria, the cellular proteids are coagulated and the organism killed.

The Lancet, January 13, 1906.

Recurring Epistaxis with Multiple Telangiectases of the Skin.—The case referred to by C. O. Hawthorne was that of a woman of forty-nine, the mother of seven children. Since her first pregnancy she had been aware of the presence of red spots on her face and also on several of the finger tips of her right hand, and from one of the latter, situated just under the free edge of the nail, bleeding, presumably as a result of slight injury, had often occurred. The woman's face showed a number of bright red telangiectases scattered over both cheeks and a few were also seen on the fingers of the right hand; none were recognized elsewhere, but as the woman came to the hospital merely as a friend of one of the patients and objected to further examination, the condition of the nasal and other mucous membranes could not be ascertained. In answer to inquiries bearing on her personal history, she volunteered the remark that since childhood she had suffered from repeated attacks of "bleeding at the nose," and that on one occasion it had been necessary to plug the nostrils. Her father, also, and a sister were, so she said, troubled in the same fashion, and each of these, as well as her eldest daughter, had "spots" which she recognized as similar to those present on her own face. Further, every one of her own children had had more or less numerous attacks of epistaxis.

Sciatica of Abdominal Origin.—Two histories illustrating this mode of origin of sciatica are contributed by F. W. Forbes. Case 1, illustrating what may be called a true sensory physiological reflex nervous response of one spinal segment to peripheral irritation existing in the area supplied by another adjacent spinal segment, was that of a woman who had complained of constant pain in the tenth dorsal area with sciatica. She had had also menorrhagia and profuse leucorrheal discharge. A small papilloma was discovered in the cervix, with accompanying erosion and and ill-defined resistance in the left pelvis. The latter was found later to be a small central cyst of the ovary. Removal of the papilloma, together with a wedgeshaped portion of the cervix, and later of the cyst, led to a complete cessation of all the nervous symptoms. Case 2 was that of a woman of forty-seven years, with metrorrhagia and pains shooting down both legs. In this case also a tumor was discovered in the cervix. There was in addition a pouching out of the bladder on both sides of the tumor. The loss of blood had been very great. It was deemed advisable to remove the entire uterus, which was done, but the adhesions in the pelvis rendered the task a long and difficult one. The patient's previous condition and the necessary severity of the operation proved too great a strain for the patient, and she survived but a short time. The specimen proved to be a large myoma of the anterior lip of the cervix.

Wright's Method of Treating Tuberculosis.—Watson Cheyne refers to Wright's theory that the mode in which the body defends itself against bacteric invasion is by the development in the blood serum of substances termed opsonins, each bacterium leading to the development of its special opsonin, which, coming in contact with the living bacteria, weaken them and enable the phagocytes to complete their destruction. Apparently the body has no other means of defending itself, and the only way of aiding recovery in cases of tuberculosis, for example, is to try to increase the opsonic power in the blood. This is done by introducing minute quantities of dead bacteria of the same kind as those invading the body, and, securing that the blood serum comes in contact with the invading organisms.

The end, therefore, to be striven for is to increase the "opsonic index" of the blood. Cheyne regards the expression of this result as dependent largely on the personal equation, and as devoid of necessary accuracy. He refers to the good effect of abdominal section in tuberculosis of the peritoneum. He was at first inclined to ascribe this to the postoperative pouring out of serum containing antibacterial substances, which interfered with the vitality of the bacilli, but he is by no means satisfied with this explanation. He doubts whether in opsonins and phagocytes we have the whole defensive armamentarium of the body against the tubercle bacillus. There are probably many other factors, especially local ones, which are of equal and perhaps greater importance. He is somewhat surprised that Koch's tuberculin was so quickly thrown aside, feeling that continued investigation would have soon led to the discovery of means for overcoming the objections to its free employment. He believes that the use of this remedy should be continued. In general, his position is that it is a most valuable adjunct to our treatment, but he is not prepared to throw aside surgical measures for certain accessible and persistent tuberculous processes. The problem of cure cannot be solved merely by keeping the opsonic index of the blood up to normal by the use of tuberculin or similar compounds. The cervical glands may be cited as a familiar illustration. If they are suppurating, they are much better removed by a radical operation. This latter should then be followed up by the tuberculin on the principles of dosage laid down by Wright. A distinct plea is made in this particular instance for a "radical" operation. Mere scraping is not radical, nor is the simple removal of those glands alone which are visibly affected. Cheyne therefore advocates an elaborate operation in cases of tuberculous glands in the neck, consisting in the removal not only of all infected glands, but of all the fat and other glands in the vicinity over an extensive area. He expresses some doubt whether tuberculin is the final and best result which will ever be obtained in the treatment of tuberculosis, since in spite of long-continued use of tuberculin and marked improvement in the patients, tubercle bacilli may still be present in the urine on one hand in cases of urinary tuberculosis, in the sputum in cases of pulmonary tuberculosis, etc., after a long period of treatment; recurrences may also take place after the sores have healed in cases of tuberculosis on the surface of the body.

The Pathology and Bacteriology of Serous and Purulent Effusions in Children.—This subject is carefully worked out by J. G. Emanuel, whose detailed statements are well worthy of examination. We can refer only to certain leading propositions. Seventy-five per cent. of empyemata in children are due to the pneumococcus. The disease may be associated with pneumonia, or occur independently of it. The author believes in the primary nature of these cases. About seventeen and one-half per cent. of empemata in children are caused by the streptococcus. The disease here may be secondary to pneumonia, especially that complicating the acute infections; to inflammatory lesions elsewhere, *e.g.* otitis media, or may arise independently. Empyema due to the staphylococcus is generally secondary to suppurations elsewhere, *e.g.* infective periostitis. Empyema in children is due, some say in twenty-five per cent. of cases to the tubercle bacillus. It is rare, however, to find the organism in the effusions. All observers are agreed that a pneumococcal is mild in comparison with a streptococcal or tuberculous empyema. It must, however, be remembered that although the empyema is proved bacteriologically to be pneumococcal, it may in reality be complicating a pulmonary tuberculosis or even a sarcoma of the lung. Again, many streptococcal empyemata run a mild course. Considering pneumococcal apart from other empyemata, the author would make three degrees of virulence: (1) There is a mild variety, in which the pneumococcus remains localized to the pleural cavity. This is the case with the uncomplicated empyema. (2) There is a more severe variety, in which the pneumococcus spreads from the pleural cavity, via the lymphatics, and gives rise by direct extension to pericarditis, peritonitis, or to empyema of the opposite side. This class includes those cases described under the term polyserositis or polyorromenitis, when they are due to the pneumococcoccus and when they begin in the pleural cavity. (3) Finally, there is a very severe variety in which the pneumococcus gains access to the blood stream and gives rise by metastatic infection to such complications as meningitis, cerebral abscess, endocarditis, subcutaneous abscess, and purulent arthritis. In this way arises pneumococcal septicemia as a result of pneumococcal infection of a pleural cavity. In many cases of pneumococcal septicemia and empyema occurs which is only the expression of a localization of a general sepsis.

British Medical Journal, January 13, 1906.

A Rapid Cure for Lumbago.—G. H. Kenyon has employed for many years the local application of tartar emetic, using the B. P. ointment twice a day until the pustules characteristic of antimony make their appearance. By this time the pain is greatly relieved if not quite gone, and the patient is practically well. Along with this local treatment it is advisable to administer a saline aperient mixture containing sodium salicylate. The number of applications of the ointment required depends greatly on the thoroughness with which it is rubbed in. If this is well done, one or two applications are usually sufficient. It is prudent to warn the patient not to continue having the ointment rubbed in longer than necessary to relieve the pain, or after a fair crop of pustules have come out, as this makes the skin unnecessarily sore and ulcerated.

Food Poisoning and Coma.—The history of a case of coma following a hearty supper of fish, meat, wine, and ice cream, is given by A. D. Kennard. His patient was a waiter, aged twenty-two years. When first seen he had been all night in a state of coma with stertor, absence of all reflexes, contracted pupils, weak and rapid pulse, normal temperature, and distended bladder. The symptoms had come on rather suddenly about half an hour after eating. He was catheterized and purged. In about four hours he vomited freely and his reflexes gradually returned. A mild bronchopneumonia appeared next day at both bases, but the patient was well in ten days.

Functions of the Omentum.—A series of drawings with explanatory remarks is presented by R. Morison, who styles this structure the "abdominal policeman," and declares that it travels about in the abdomen with considerable rapidity and is attracted to localities in which lesions are occurring. Normally it forms a protecting pad for the small bowel. It may play a conservative rôle in both femoral and inguinal hernia by blocking the hernial openings firmly. It has been observed guarding a suppurating gland in the mesentery of the small gut, may occlude a perforation of the diaphragm, isolate a suppurating gall-bladder, and isolate an appendix in either the flank, iliac fossa, or pelvis. It has been found guarding a malignant ulcer of the rectum, of the sigmoid flexure of the colon, and of the colon itself. It has been observed to surround an injured piece of small intestine, to isolate pelvic tumors (degenerating myoma, ovarian cyst, ectopic gestation, pyosalpinx, etc.), and to seal an ulcer of both the stomach and duodenum. It seems to possess an especial capacity for the formation of new vessels. Morison likens the movements of the omentum in all of the above conditions to that of a jelly fish, claiming that its alternating position is due to more than mere mechanical causes.

The Reality of Enterospasm and Its Mimicry of Appendicitis.—H. P. Hawkins thinks that at the present time many an innocent appendix is excised. The great subject of functional disorders of the intestines has never been fully studied, and many cases of abdominal pain referred to the appendix are due to either enteralgia, mucous colic, or enterospasm. He presents notes of 35 patients whose sole trouble was some degree of abdominal pain or discomfort. Some of them may have been of a spastic nature. In six the appendix had been previously removed without relief to the symptoms. The author's main ideas are embraced in the following propositions: (1) It is not uncommon for men and women in equal proportions to begin in early adult life to suffer from abdominal pain. (2) From the absence of all evidence of organic disease and the long duration of many of the cases, it is unlikely that there is any structural change in the intestine or elsewhere. (3) Such patients are neurotic or neurasthenic, and the abdominal trouble varies directly with the mental state. (4) The pain may occur in short, sharp attacks; or may last for months at a time as a pain or discomfort. (5) Whether it is short and sharp, or long and wearing, the pain is usually seated in the right or left iliac fossa or the immediate neighborhood. (6) In both situations the pain may lead to the idea that more serious disease is present, as affecting chiefly the appendix, and to a less extent the sigmoid flexure.

Berliner klinische Wochenschrift, January 8, 1906.

The Apparent Anticomplementary Action of Precipitating Sera in the Animal Body.—Pfeiffer and Moreschi describe intricate observations on the actions of precipitating sera which led them to the following conclusions: Specific precipitating sera when brought in contact with their respective precipitogenous substances even in the animal body manifest a pronounced antibacteriolytic action through fixation of the complement. The effective agent is the precipitate, which either forces the complement to combine with it or destroys it. In this phenomenon the quantitative relationship between the precipitating serum and the preciptogen is of importance. The optimun of antibacteriolytic action coincides with the optimun of precipitation. This anticomplementary action of the precipitate may simulate the presence of antiamboceptors, and further investigations must show to what degree the former studies on antiamboceptors are open to criticism on this ground.

Experimental Observations on the Effect of Mineral Waters on the Secretory Function of the Stomach.—Bickel was able to duplicate on a human being the laboratory experiments ordinarily performed on dogs having a Pawlow fistula. The patient was a well nourished young woman of 23 years, without gastric disease. In consequence of poisoning by lye she had eight years previously acquired an almost complete stricture of the esophagus for which at that time a gastrostomy was performed. Recently for therapeutic purposes an esophagotomy was done; the lower end of the tube was buried and the upper end brought out of the wound in the neck, forming a permanent fistula. The author, with her consent, took advantage of this physical conformation for the purpose of determining the effect on gastric secretion of the ingestion of the various mineral waters commonly in use. It was found that mineral waters belonging to the acidulous, sodium chloride, and the alkaline muriatic groups certainly did not inhibit gastric secretion, and apparently were potent in increasing it. The alkaline-saline waters and the alkaline waters on the other hand did to some extent reduce the amount of gastric juice secreted. The bitter waters evoked the secretion of watery fluid but diminished the output of the specific components of gastric juice. The experiments were performed by introducing into the fasting stomach 200 c.c. of water through the fistula. A quarter of an hour later the water still remaining in the stomach was drained out and a factitious meal of meat and vegetables lasting ten minutes was given, the masticated material escaping from the fistula without reaching the stomach. The gastric juice was then collected from the stomach at intervals of five minutes.

Diagnostic Abdominal Puncture.—Salomon calls attention to the fact that diseases of the abdominal cavity have not yet been made accessible to diagnosis by means of exploratory puncture and describes an instrument intended to fulfill this purpose. It is a modification of one devised by Schmidt for injecting serum or salt solution into the abdomen before laparotomies for the purpose of reducing the risk of infection. It consists, first, of a short sharp trocar provided with a flange which prevents it from penetrating deeper than just through the skin. After the integument has been pierced by this a blunt pointed cannula is pushed through the muscle and peritoneum, which is usually accomplished without difficulty. The blunt cannula is provided with a lateral opening through which it is possible to direct a small flexible catheter resembling those used for the ureter, in any desired direction, and on making suction with the syringe any exudate present is easily detected. The author in this way demonstrated the presence of fluid in a case in which on autopsy only 100 c.c. of free exudate were found in the abdomen. He recommends the method as valuable in making the differential diagnosis in instances of perforative peritonitis, ureteral or biliary colic, ectopic gestation, intussusception, fat necrosis of the pancreas, traumatic injury of the abdomen, typhoid perforation, etc. The puncture is done under morphine anesthesia.

Münchener medizinische Wochenschrift, January, 9, 1906.

The Diagnosis of Flat Foot.—Schüman mentions the various methods which have been described by different authors for the purpose of obtaining permanent impressions of the sole in cases of flat foot, and describes a procedure of his own which he says is simple and gives extremely clear records. The paper to be used is lightly coated with solution of ferric chloride diluted one half and may be kept on hand until needed for use. The patient's foot receives a thin coating of a 5 per cent. solution of potassium ferrocyanide, and he is then instructed to press it firmly on the prepared paper. The result is a very clear dark blue reproduction of the sole on a yellow background. The course of the papillary lines is readily recognizable, and the pictures obtained in this way are so full of detail that the author recommends the method for the purpose of obtaining finger records in the Bertillon system of identification.

Bier's Hyperemia in the Treatment of Eye Diseases.—Renner tested this plan of treatment in a number of different ocular affections. The congestion in these cases is evoked by the application of a rubber bandage 3 cm. wide which is placed about the neck. In order to determine whether this procedure was likely to give rise to any unpleasant subjective manifestations the author tried it on his own person a number of times, allowing the band to remain in position for from three to eight hours. No disagreeable sensations followed, though after several hours there was a feeling of pressure and tension in the ocular muscles on extreme motion of the eyeballs, slight swelling in the nasal passages, and the voice became somewhat hoarse. The conjunctiva was slightly reddened, but the functions of the eye were in no way affected, and no increase of ocular tension was produced. Examination of the fundus revealed a distinct venous hyperemia of the retina. In applying the method to patients the author confined himself to individuals less than 40 years of age, as it seemed unwise to hazard the accompanying increase of cerebral pressure in individuals of advanced years. Five cases of parenchymatous keratitis were apparently distinctly benefited by the congestion, the duration of treatment being markedly shortened. The results were less evident in several cases of serpigenous ulcer of the cornea, and in the phlyctenular and catarrhal ulcers of the cornea no improvement appeared to follow this form of treatment. Although the number of cases reported is small the author considers that the method gives sufficient promise to justify further attempts in this direction.

Further Observations on the Etiology of Syphilis.—Siegel contributes another report on his progress in the study of the *Cytorrhyctes luis* and describes previous observations by several older investigators which lead him to think that they also were working on the same parasite. A new method of staining is given by means of which the author says that successful blood preparations can be quickly made. The stain consists of methylene blue 1, borax 2.5, distilled water 100. This is allowed to act for ten minutes and the smear is then washed with water. Numerous control observations have convinced Siegel that his organisms are not artefacts or bits of degenerated cells. Twenty specimens of syphilitic blood have been examined, and in each case it was found that at the time of the initial lesion nothing suspicious was present in the blood but that numerous organisms could be discovered as soon as the exanthem appeared. Elaborate inoculation experiments on white mice and monkeys are also described. Leucocyte counts on seven monkeys uniformly showed a rather sudden rise in the number of leucocytes about the fourteenth or fifteenth day which occurred coincidently with the appearance of the eruption. A monkey inoculated with the fourth generation of the parasites obtained from syphilitic placentas and cultivated on human blood bouillon developed the usual lesions at the end of fourteen days and had cytorrhyctes in his blood.

Deutsche medizinische Wochenschrift, January 11, 1906.

The Radium Treatment of Trachoma.—Jacoby treated eight cases of trachoma and three of follicular conjunctivitis with radium. One eye in each case was treated by the ordinary methods and the other was subjected to the action of the radium. The test seemed to show that a distinctly beneficial action was exerted by the radium but its results were distinctly inferior to those attending the usual mechanical and medicamentous treatment. Although direct injury would be caused by the radium treatment only in such cases in which on account of their progressive nature active intervention is required, it is probable that its use in all cases leads to loss of time. The author suggests that whatever good effect is manifested under the influence of the radium treatment may be due to other factors, such as the hyperemia caused by the more or less protracted exposure to the air of the conjunctivæ, or the gentle message attending the application of the radium capsule to the diseased surfaces.

Subcutaneous Rupture of the Spleen.—Friedheim reports two cases of splenectomy for rupture of the spleen, followed by recovery. The first patient was a coachman 23 years old whose injury was caused by the kick of a horse. There were no symptoms pointing toward injury of the spleen so that a median incision was made which was subsequently extended along the free border of the ribs on the left side when the seat of the hemorrhage had been discovered. This patient had lost about two liters of blood or two per cent. of his body weight. The other patient was a boy four years old who had been run over; as he had several times vomited blood an injury to the stomach was assumed and the median incision made in this case also. When the spleen was found to be the injured organ the incision was extended as in the previous case. This boy had lost about three-quarters of a liter of blood or five per cent. of his body weight. In each case the abdomen was closed without drainage, although at the second operation a considerable amount of blood clot was left in the abdomen. Both patients were discharged at the end of four weeks in perfect health. In the case of the adult the blood picture had returned to the normal on the eighth day after the operation, but improvement to this degree did not follow with the little boy until about four weeks had elapsed. The author says that the latter case is of especial interest since it shows that the spleen may be removed even at an early age without leading to consequences of moment.

French and Italian Journals.

The Eggs of Intestinal Parasites.—Maurice Letulle gives a list of the most ordinary intestinal parasites. In the

order of their size, not mentioning the eggs of the tænias, he gives the following list of parasites the eggs of which are often found in human feces: trichocephalus, oxyuris vermicularis, ankylostoma duodenale, bothriocephalus, ascaris lumbricoides, and Bilharzia hæmatobia. The investigator should be familiar with the appearance of these eggs. When an egg is found in the feces, its form, color, power or reflection, its dimensions, structure, and artificial modifications (solutions) should be studied. Besides these points, its signs of vitality (contractility), and the relative numbers in the various preparations examined should be noted. The microscopic examination of the eggs contained in the feces is indispensable to the clinician. The technique is simple and the diagnosis certain.—*La Presse Médicale*, December 30, 1905.

Perivascular Lesions of Generalized Scleroderma.—Alquier and Touchard have made careful observations in their study of this disease. They believe that in an early stage of generalized scleroderma there may be observed around the small bloodvessels elongated cells of the connective tissue type and of the type of mast cells. The number of these cells seems to be in inverse ratio to the degree of sclerosis, diminishing as the disease progresses. In generalized scleroderma, it seems that the sclerosis of the connective tissue begins by a perivascular irritation. The determination of this fact added to that of early lesions in the small blood vessels, the tumefaction of the endothelium, and the thickening and degenerative lesions of the wall, seems to justify the hypothesis which considers this disease as related to a blood intoxication.—*Gazette des Hôpitaux Civils et Militaires*, December 28, 1905.

Perforation of the Stomach in the Course of Latent and Unrecognized Ulcers.—Benjamin Ball discusses a question of the greatest interest to the medical practitioner when he seeks to make clear a diagnosis upon which depends the life of the patient. It frequently happens that a patient succumbs to a perforation, when immediate intervention would have saved him from death. Ball has collected ninety-two cases of perforations in the course of gastric ulcer in nearly all of which death took place in from twenty-four to thirty-six hours. It is most important in these cases to make a rapid diagnosis and to practice surgical intervention without delay. Diagnosis is not always easy. Frequent errors in diagnosis occur as in cases of appendicitis, intestinal occlusion, poisoning, lead colic, not to mention duodenal perforations which it is almost impossible to differentiate. The physician should be convinced that an early intervention alone will save the patient. There is no comparison between the danger of a laparotomy and that of an unrecognized perforation.—*Le Bulletin Médical*, December 30, 1905.

Urinary Chlorides and Clinical Forms of Tuberculosis.—Piéry and Etienney give a report of work that has been done in Bondet's clinic. They state that elimination of chlorides in the urine undergoes numerous variations in the different clinical forms of pulmonary tuberculosis. Fibrocaseous phthisis is characterized in its periods of remission by a notable decrease in the elimination of chlorides. When caseation extends, the excretion of the chlorides increases progressively with the periods of infiltration and softening. The excretion of chlorides becomes normal or slightly increased in the stage of cicatrization of the cavity. Galloping consumption and cascous pneumonia show in the beginning a decided decrease in the elimination of chlorides; in the height of the disease the chlorides are slightly diminished and in some cases normal in amount, while at the last they are considerably decreased. The amount of urinary chlorides, however, in the course of abortive pulmonary tuberculosis is notably decreased. The retention of chlorides is still more decided in fibrous phthisis. From the point of view of prognosis, excepting the first stage of phthisis, the more serious the tuberculosis the less marked is the retention of chlorides.—*Lyon Médical*, December 31, 1905.

Acute Poisoning with Bichloride of Mercury.—Ambrogio Mori describes the symptoms of acute poisoning with bichloride of mercury in a baby, who swallowed 70 c.c. of a 3 per cent. solution of corrosive sublimate. Mucous and biliary vomiting streaked with blood occurred, the kidney function was suspended, there was a frequent pulse, asthenia and rapid collapse occurred, and death followed. The anatomical lesions were characteristic of acute mercurial poisoning. The action of the poison as a caustic was limited to the stomach, the pyloric orifice having closed, so that the material was all removed by the vomiting, and none passed into the intestine. The esophagus, pharynx, and stomach were necrotic. There were grave secondary hemorrhages in the intestines, from lesions of the endothelium of the capillaries of the villi, due to the blood dyscrasia produced by the poisoning. There was a process of steatosis in the hepatic periportal acini. There was beginning necrosis of the kidney epithelium characteristic of mercurial intoxication.—*Rivista di Clinica Pediatrica*, December, 1905.

Influence of the X-Rays on the Evolution of Silk-Worms.—H. Bordier has studied the effect of the *x*-rays on the metamorphoses of the silk-worm in its life cycle. The worms were taken on the day after birth and exposed to the rays, at a distance of 8 centimeters, for a quarter of an hour each day. They became more active than normal. The changes were retarded in the animals treated, taking 36 instead of 29 days, as in the untreated worms, and the transformations came about in an abnormal manner. Most of the chrysalides were dead, with a hemorrhage from the mouths of the worms; no wings were formed. The cells of the animals seemed to have been affected. There was less silk spun than usual.—*Annali di Elettricita Medica e Terapia, Fisica*, November, 1905.

Anemia of Parasitic Origin.—De Renzi and Caporali state that among the diseases that produce anemia we must reckon some that are produced by parasites. Of these we may distinguish two great classes: parasites of the blood itself, and intestinal worms. Those in the second class constitute a well-marked group, well known in its etiology and complex in its clinical manifestations. Among the diseases due to blood parasites the principal is malaria, and among those due to intestinal parasites is that resulting from ankylostoma duodenale. But the ankylostoma is not always directly the cause of the anemia, and ankylostomanemia must be distinguished from simple ankylostomiasis. As to the cause of the anemia in ankylostoma disease, it is believed to be not only the loss of blood consumed by the parasite, but also the intoxication resulting from toxic substances, as was demonstrated by Lussana and De Giovanni. Such toxic substances may be elaborated by the parasite, or result from the disturbances of intestinal chemical activity.—*La Riforma Medica*, December 23, 1905.

A Note on Tuberculosis.—Noir has made some very interesting studies concerning pulmonary tuberculosis as it has occurred in paupers in a corner of the old part of Paris. In the section which he has studied there are seventeen streets and two hundred and fifty-one houses. Most of these dwellings were built before the eighteenth century. Their unhygienic condition is notorious. The houses are from five to six stories high. In three-quarters of the cases each family has but one room, which they use as a work room, a kitchen, a dining-room, a bedroom, and sometimes as an infirmary. It is not a matter of surprise then that in eleven years one hundred and five persons have died of contagious diseases and seven times that number of tuberculosis. The writer concludes by demanding that these unhygienic abodes shall be destroyed and that the municipality substitute for them lodgings for workmen provided with air and light.—*La Tribune Médicale*, November 18, 1905.

Female Type of Hand in Extension or Sigmoid Carpus.—By this term R. Kingman refers to a double or S-shaped curve of the wrist and hand involving the portion of the upper extremity from the tips of the fingers to, and including, the lower ends of the radius and ulna. This S curve is made up of two parts; one being formed by flexion at the wrist where the carpus articulates with the ulna and radius, and the other by overexertion at one or more of the three finger joints (the first and second phalangeal and the metacarpophalangeal or knuckles). Viewed from above, the proximal arc of the S is convex and located at the wrist joint, while the distal arc is concave and located at one, two, or three of the phalangeal articulations. From below the reverse, of course, presents; a proximal concave joined to a distal convex arc. The sigmoid carpus may best be observed, however, in profile from the ulnar aspect of the hand, the characteristic appearance being somewhat obscured on the radial border by the thumb. This form of carpus is distinctly characteristic of the female hand, and the author gives the results of examination of a considerable number of wrists in both sexes. He refers also to changes in the wrist contour as effected by various occupations and diseased conditions. He suggests that further study and observation may show the absence of the sigmoid type in the female and its presence in the male to be of some diagnostic value in conditions of disease. He thinks that males who live, work, and think on a plane of continual high tension often exhibit the feminine form of hand.—*Medical News*.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundredth Annual Meeting, Held in Albany, January 30, 31, and February 1, 1906.

(Special Report to the MEDICAL RECORD.)

THE PRESIDENT, DR. JOSEPH D. BRYANT OF NEW YORK, IN CHAIR.

TUESDAY, JANUARY 30—FIRST DAY.

THE society was called to order by the president. Prayer was offered by the Rev. F. St. George McLean, Rector of Trinity Episcopal Church.

Address of Welcome.—Dr. JOSEPH D. BRYANT of New York said that it was with hearty realization and unalloyed pleasure that he desired all to join with him in greeting this moment's existence of the medical profession of the State of New York with glad recognition. If he was a competent judge of the meaning of the hearty cooperation that characterized the efforts of all concerned in reorganization throughout the State, and of the seeming contentment that appeared to distinguish those there assembled, then, indeed, were these feelings shared to the fullest extent by everyone coming within the influence of the sentiment dominating the reorganization. In any event, he begged to assure them that the medical profession of the country regarded this occasion as one of the most important in the history of its existence. The chastening influence of earnest contention in all fields of human conflict was often not unlike that witnessed in the common convulsions of nature; the air was made the clearer and the purer thereby, the purposes of God and man were better understood, and corresponding things were improved and established upon a better and firmer basis. The enrolled regular physicians of the State, not less than 6,500 in number, were to-day a united body of attentive medical men, laboring in common for commendable interests and beneficent causes. The medical profession of the State could now take hold with a firm, confident grasp in support of wholesome, public-spirited propositions, with full consciousness of the fact that their united desire would constitute a bulwark of moral force, not to be misjudged or indifferently considered. So long as the medical profession should contribute its part to the interests of the public good, the public servants would heed its admonitions and respect the logic of its appeals. He said that every regular physician in the State should be a member in good standing in this organization, and everyone thus enrolled should recognize the fact that he himself was as potent a factor in the affairs of the organization as was any other member. The present status of this medical body had been attained only through the extraordinary zeal and infinite patience practised by the "Joint Committee of Conference," to which some time ago the fortunes of the independent medical bodies were mutually and wisely entrusted. Much yet remained to be accomplished under the order of the court before the control of the affairs of the great body could be relegated by the *ad interim* House of Delegates to the completed organization. He expressed the hope that all who were engaged in the completion of this great work would cooperate promptly and cheerfully with those now vested by the court with the construction of the legal framework required for the purpose. He said that they had been legally informed that only the report of the Joint Committee on Conference and of the *ad interim* House of Delegates, and a resolution of continuance of power were in order. A communication from Dr. Lewis S. McMurtry, president American Medical Association, was then read, in which he congratulated them on this consummation, which had been so long desired by the profession of the United States. Since the organization formed by this union became the constituent branch of the American Medical Association, in behalf of that association he extended a cordial greeting to the society and a welcome to the council of the united profession.

Report of the Committee on Conference.—Dr. HENRY L. ELSNER read this report, which follows:

To the Medical Society of the State of New York:

Your Committee of Conference in making this, its fourth and last report, begs leave to call your attention to the following:

The object for which the Committee of Conference was appointed at the annual meeting in January, 1902, has been accomplished.

The unification of the regular profession of this State in the Medical Society of the State of New York with representation in the American Medical Association has become a fact.

The individual members of county medical societies in affiliation with the State Society by virtue of such membership now enjoy all of the advantages of membership in this State body; thus our society becomes at once the most powerful State medical organization in the United States.

It is unnecessary at this time to rehearse the sequence of events which have led to this happy result. The three preceding reports of the Committee of Conference, all published in the Transactions of the Medical Society of the State of New York during the years 1903, 1904, and 1905, give these in detail.

Your committee in its last report, after considering the legal obstacles with which the Joint Committee of Conference were confronted, suggested, on advice of counsel, in order to make the title of this body clear, without flaw or question, that at both the annual meeting held in Albany on the 31st day of January, 1905, and at a special meeting which was called in the same city on Thursday, February 2, 1905, in accordance with the Constitution and By-Laws, this society approve and adopt the proposed agreement of the Joint Committee of Conference.

Your committee recommended at these meetings that the resolution adopted at the preceding annual meeting, subscribing to the agreement and adopting the Constitution and By-Laws as printed in the Transactions of this society for 1904 be rescinded, and that following this action at both these meetings the society again subscribe to the agreement and readopt the Constitution and By-Laws contained in the report of your Committee of Conference at the annual meeting of the society in 1904, and published in full in the Transactions of the Medical Society of the State of New York for the same year.

It was suggested by the Committee of Conference in its last report that as soon as the New York State Medical Association shall have taken similar action, the Medical Society of the State of New York, through its committee, shall be reorganized in accordance with the agreement, Constitution and By-Laws unanimously adopted at the annual meeting in 1904.

On the receipt of the report of this committee, for the purpose of conforming to legal requirements, it was moved and carried that the following resolution adopted at the annual meeting in 1904 be rescinded:

"Resolved, That the report of the Joint Committee of Conference be accepted, and that the proposed agreement for the consolidation of the Medical Society of the State of New York and the New York State Medical Association be and the same is hereby approved, and the president of the society is hereby authorized and directed to execute the same in the name and behalf of the society, and the secretary is hereby authorized and directed to affix the corporate seal thereto."

The following was then unanimously adopted:

Resolved, That the report of the Joint Committee of Conference be accepted, and that the proposed agreement (including the Constitution and By-Laws), for the consolidation of the Medical Society of the State of New York and the New York State Medical Association, a copy of which appeared in the Transactions of the Medical Society of the

State of New York for 1904, page 22, and is also appended to the report of the Committee of Conference, and made a part of such report, made on the 31st day of January, 1905, to this society, be and the same is hereby approved, and the president of the society is hereby authorized and directed to execute the same in the name and behalf of the society, and the secretary is hereby authorized and directed to affix the corporate seal thereunto; and be it further

Resolved, That the Committee of the Society heretofore appointed for the purpose of bringing about the consolidation, namely, Drs. Henry L. Elsner, Abraham Jacobi, Albert VanderVeer, George Ryerson Fowler and Frank Van Fleet, be and they are hereby continued as such committee, with full power and authority to do whatever may be necessary to carry the agreement into effect.

At the special meeting of the Medical Society of the State of New York, held in the city of Albany, February 2, 1905, the chairman of the Committee of Conference presented the report of that committee with the agreement which was presented at the annual meeting on the morning of January 31, 1905, which report was unanimously accepted. Whereupon, by unanimous vote, a resolution was adopted accepting the report of the Joint Committee of Conference and the proposed agreement for the consolidation of the Medical Society of the State of New York and the New York State Medical Association, including the Constitution and By-Laws, and the president of the society was authorized and directed by such resolution to execute the same in the name and behalf of the society, and the secretary was authorized and directed to affix the corporate seal thereunto. It was further

Resolved, That the committee of the society mentioned in the resolution above quoted be appointed for the purpose of bringing about the consolidation, and said committee was continued with full power and authority to do whatever might be necessary to carry the agreement into effect.

By this action of the Medical Society of the State of New York it became possible as soon as the New York State Medical Association took similar action, to unify the regular profession of this State.

At the twenty-second annual meeting of the New York State Medical Association, held at the New York Academy of Medicine, in the city of New York, on Tuesday, October 17, 1905, a resolution was adopted in which the association subscribed to the agreement of the Joint Committee of Conference, and appointed a committee consisting of Drs. E. Elliot Harris, Julius C. Bierwirth, Alexander Lambert, Parker Syms, and Wisner R. Townsend to carry out the purposes of said agreement, and with full and absolute power to take any and all legal steps necessary in the premises in the place of the said New York State Medical Association, as may be necessary to complete the consolidation of the New York State Medical Association and the Medical Society of the State of New York.

The action of both State bodies made it possible in accordance with an "Act to authorize the consolidation of the Medical Society of the State of New York and the New York State Medical Association" (Chapter I of Laws of 1904), which was duly introduced into the Senate and Assembly of the State, promptly passed and signed by the Governor on the 21st day of January, 1904, to petition the Supreme Court for an order consolidating the corporations. Said Act provided that when the order is made and duly entered the corporations, parties to the agreement shall be one corporation under the name, "Medical Society of the State of New York," which shall *not* be deemed to be a new corporation, but to be a continuation of the Medical Society of the State of New York, incorporated in 1806. It was provided that a certified copy of said order shall be filed in the office of the Secretary of State.

At the meeting of the Joint Committee of Conference, held in the city of New York, on October 20, 1905, the chairman of the Committee of Conference of the Medical Society of the State of New York was authorized to engage counsel for the purpose of presenting the petition to the Supreme Court for an order consolidating the corporations. Mr. Frederick Collin, of Elmira, who had already served the Conference Committee of the Medical Society of the State of New York, was engaged for that purpose, and on the 9th of December, 1905, Mr. Collin appeared before Mr. Justice John M. Davy in the city of Rochester, N. Y., and made such application pursuant to the Act above mentioned, known as Chapter I of Laws of 1904. Such order was promptly granted by the learned Justice, and a certified copy of said order has been filed in the office of the Secretary of State. All property belonging to the corporations so consolidated has been vested in the said Medical Society of the State of New York.

Pursuant to Section 1 of the agreement executed by the Medical Society of the State of New York and the New York State Medical Association, which agreement was made a part of the order of amalgamation entered on the 9th day of December, 1905, by Mr. Justice John M. Davy, a Justice of the Supreme Court, the *ad interim* officers, Chairmen of Standing Committees, House of Delegates, Council of the Medical Society of the State of New York created by such order of consolidation, must of necessity be authorized, directed and empowered to continue to exercise the respective powers and authority for the organization of the members of the consolidated corporation and the management of its affairs pursuant to the Constitution and By-Laws of the Medical Society of the State of New York until the annual meeting of the Medical Society of the State of New York, which shall take place on the last Tuesday of January, 1907. Your Committee of Conference, therefore, recommends that action be taken by the Medical Society of the State of New York at this, its annual meeting, in accordance with such agreement and order.

The Committee of Conference, in making its final report, wishes to express its appreciation of the encouragement and support received from the individual members included in the unified profession as represented at this time in the Medical Society of the State of New York. Its labors have been materially lightened by such assistance. Without it unification would have been longer postponed.

The committee wishes still further to express to the members of the Joint Committee of Conference who represented the New York State Medical Association its appreciation of the uniform courtesy and consideration extended, which made it possible for the committee to act harmoniously with a single object in view, and that, the upbuilding of a model State Medical Society.

The committee has at no time been unmindful of the valuable assistance cheerfully rendered by those who have served as presidents of the State Society since its appointment, and wishes at this time to make public acknowledgment of its appreciation of their efforts.

On this centennial occasion your committee feels justified in congratulating the society upon the unification of the State profession without interference with the life or activities of our time-honored society.

The committee feels that the future success of the State Society must largely depend upon the efforts of its individual members and the earnestness with which the many advantages of this body shall be presented to the profession of the State, and would therefore suggest in conclusion that concerted effort be made which shall have for its object the upbuilding of the county societies, their stimulation to greater scientific activity, and the addition to these of the many worthy members of our profession who have never understood the advantages of membership, now greater than ever before, because of a union which shall continue for all time to strengthen the profession and extend its influence with the public and the State.

Respectfully submitted,

HENRY L. ELSNER, Chairman,
A. JACOBI,
A. VANDER VEER,
GEO. RYERSON FOWLER,
FRANK VAN FLEET,
Committee.

Lucien Howe Prize.—Dr. F. C. Curtis read a communication from Dr. Lucien Howe in which he expressed the wish that the society receive from him a gift of $1,500, the interest on which was to be devoted to the bestowing of a prize, either of money or in the form of a suitable medal, for original contributions to our knowledge in some branch of surgery, preferably ophthalmology. It was not necessary that the competitor should be a member of the society.

Dr. A. Jacobi moved that the money be accepted and that the thanks of the society be tendered the doctor; also that the prize be called the Lucien Howe prize. This was seconded and unanimously carried.

Dr. Louis M. McMurtry, president of the American Medical Association, was then introduced and said that in 1847 a committee was appointed in New York State to call together medical men to unite and confer together as to the best methods of organization with a view of advancing the interests of the medical profession, their education, and other matters that concerned the profession, and this was in truth the foundation of the American Medical Association. The Medical Society of the State of New York was the parent body of the largest medical organization that existed in the world. The relationship was a tender and a strong one, and filled with good feeling and gallant spirit, the society now came forward and took charge of the child that had outgrown it. The Medical Society of the State of New York came again into its own, returned to the child which it fostered, and now took its place as the bright star in the constellation of the states.

The Science and Art of Fitting Glasses.—Dr. A. Edward Davis of New York read this paper, first giving a brief history of the subject, the discovery of spectacles in the thirteenth century by Salvinus Amatus, and the use of spherical glasses for the correction of old sight or presbyopia until the middle of the nineteenth century. Thomas Young discovered astigmatism in his own eye in 1801 and the astronomer Airy fitted his own astigmatism in 1837, the first cylindrical glasses to be worn. In 1851 Helmoltz discovered the ophthalmoscope, and it was then that the interior of the eye could be examined and the true nature of errors of refraction be recognized and classified, as well as the pathological changes in the interior of the eye discovered. In 1864 Donder's classical work on refraction and accommodation of the eye appeared and was the solid foundation for this branch of ophthalmology. The different tests employed in the fitting of glasses were described, as employed to-day, and the use and non-use of cyclopegics discussed. Also the matter of properly ground and adjusted glasses.

Dr. Francis Valk of New York objected to the title of the paper, and looked upon the fitting of glasses as part of one's armamentarium, being only one of the means by which an end was accomplished, in much the same way that one prescribed a dose of medicine.

Dr. A. G. Bennett of Buffalo advocated the use of cyclopegics and said he would not know exactly what he was dealing with if he did not use them, especially in estimating the errors in astigmatism. After homatropine he used eserine in order to overcome the blurring that followed.

Dr. Connor of Detroit said that he never had known a patient to complain of bad results after using homatropine. In using mydriadics he believed that strong solutions were required and he had never seen untoward results follow. He did not think that anybody had any right to say what ought to be done unless he was able to grasp the totality of the patient. No hard-and-fast rules could be laid down, but the patient should be studied as an individual. He had found good results from the use of the retinoscope.

The Immediate and Early Treatment of Ocular Injuries.—Dr. Alvin A. Hubbell of Buffalo read this paper and emphasized the following in conclusion and in résumé: 1. Injuries of the eyelids and other ocular appendages seldom affected vision, infection rarely followed, wounds healed rapidly, and they were to be treated simply in accordance with the ordinary rules of surgery. This treatment might be carried out by any intelligent practitioner. 2. Superficial injuries of the cornea were more important. Infection frequently took place, and then there was danger of a suppurative process, which might extend throughout the cornea or even involve the whole eyeball. The early treatment, while somewhat technical, might be conducted by the physician, and consisted in removing foreign bodies and using applications to prevent infection. 3. Penetrating wounds of the eyeball should always be approached with more or less concern. If not already infected at the time of the injury they easily became infected afterward. Moreover, a foreign body might have been driven into the eye, which not only carried infection with it, but which in itself became almost a certain cause of destructive inflammation. 4. In every punctured wound of the eyeball, inflicted by a small, unseen object, there should always be a suspicion of the introduction of a foreign body. The diagnosis was often difficult, and required special appliances and experience. The removal of a foreign body from the interior of the eye was almost imperative to its salvation. Here, too, special equipment and special skill were demanded. 5. Infection, by whatever means it might have been introduced, was the agent which destroyed the injured eye, both by suppurative processes and by non-suppurative uveitis. 6. In non-suppurative traumatic uvetis the infection seemed to be of a specific kind, and was transmissible to the uninjured eye, producing there a sympathetic uveitis which was also destructive in its course. 7. Sympathetic inflammation did not develop until at least two weeks after the injury of the first eye. In the absence of a foreign body, or after its removal, the immediate treatment of a perforating wound consisted in sterilizing the eye and its surroundings, freeing the wound of all incarcerated tissues, and closing it as perfectly as possible, or touching the opening with carbolic acid. Subsequently, sterilization should be kept up as effectually as the circumstances would permit. 8. Infection should be combated by intraocular disinfectants and rendered dormant by the persistent and methodical application of cold over the eye. 9. An eye that was hopelessly lost at the time of the injury should at once be excised, the operation for which might be performed by any informed practitioner. 10. When an eye was affected with active traumatic uveitis it should be enucleated within two weeks from the time of the injury, unless the eye had useful vision or might be given useful vision by some operative measure. 11. In wounds of the eyeball of all varieties delays were dangerous, and if there was the slightest possibility of a foreign body being lodged within the eye, or if infection had begun, the dangers to sight were so great that the services of a specialist should always be secured if possible.

Typhoid Fever, with Special Reference to Its Incubation Period and Reincubation Cycles.—Dr. Luzerne Coville of Ithaca read this paper. After quoting largely from medical literature regarding the incubation periods of this disease, he said that enteroclysis, when consistently carried out, defeated the toxin accumulation in the body as did no other single treatment. The bacillus coli communis was a close competitor in the intestinal condition of typhoid patients. The colon bacillus regularly attacked the sugars and rapidly produced gas. Thus the milk diet of typhoid patients was bad because, through the contained lactose, a peculiar aggravation of the typhoid growth and virulence and an increase of necrosis toxins in the intestinal tract resulted. He believed that equally bad was the bath treatment, in that it used up the patient's energies. In his experience with the Ithaca epidemic in 1903 about one-quarter of the cases ran only short, mild temperatures of 99° to 99.4° for a day or two and then became subnormal. In another one-quarter of the cases the fever began and continued from three to ten days; these patients slowly recovered, and sometimes later had severe typhoid fever. Another one-quarter of the cases were typical of the disease. He believed the usual primary incubation period to be pretty uniformly twelve days.

Dr. Kinnicutt of New York said he did not know upon what the reader of the paper based his opinion regarding the use of the cold bath, whether laboratory experience or clinical observation. He believed the cold water treatment was an admirable one, and had aided in reducing the mortality greatly, at least 3 per cent. Formerly the mortality was 10 per cent. or 11 per cent., and now it had been reduced by means of the cold water treatment to 6 per cent., or 7 per cent.

Dr. DeLancey Rochester of Buffalo said that if one watched the cases closely enough he would not find recurrences so often, but complications, such as of the gall-bladder, of the appendix, of the ear, or of the lungs. He emphasized the importance of the Brandt method of treatment, and said that this meant, not sponging, but tubbing, reducing the temperature of the water from 85° to 65°. Enteroclysis with decinormal salt solution he was not an advocate of, because it carried with it toxic material from the bowels. It would be better if the bowels were washed out with boric acid solution or ichthyol.

Dr. Styles of Owego spoke of factors which influenced the period of incubation, such as the virulence of the poison, the condition of the soil, the natural resistance of the patient, and the environment. He said it was a mistake to treat the typhoid fever; one should treat the individual, meeting the indications as they arose, contributing to the comfort of the patient as best one could.

Centennial Exercises.—These exercises were held in the evening in Emmanuel Baptist Church, before a very large audience.

Address of the President.—Dr. Joseph D. Bryant of New York, on behalf of the Medical Society of the State of New York, welcomed all on this joyous occasion and invited all to participate in the centennial exercises. One hundred years ago witnessed the birth of the Medical Society of the State of New York. During this time the means of human intercourse had multiplied in number and efficiency to a startling degree. The ten-mile passenger railroad from Stockton to Darlington, England, of 1825, and the seventeen-mile one from Albany to Schnectady of 1830, with its daily passenger list of 387, were mere traces, primitive traces of those of the present time. To-day the world had quite 440,000 miles of railroad, of which nearly 214,000 were in the United States, and conveying in the United States alone, over 716,000,000 passengers. The telegraph, the telephone, and wireless telegraphy were all of such modern invention, utility, and thrift that no special statement regarding them was required. The loom, the printing press, the reaper, and many other labor-saving, civilizing, and wealth-producing instrumentalities were of common knowledge and in constant use everywhere. The onward march of freedom during this century had kept pace with the advance of general human intelligence and human sympathy. Great Britain in 1843 emancipated 12,000,000 slaves. France, in 1848, Sweden in 1846-7, Denmark in 1848, Netherlands in 1862, abolished slavery. In 1861 Russia emancipated about 22,000,000 serfs. In 1860 there were nearly 4,000,000 slaves in the United States, but in January, 1863, slavery was abolished by the proclamation of Abraham Lincoln. The immense contributions to the healing art during this centennial period were no less astonishing and in the fore-rank was vaccination and close at hand anesthesia; then too, the twin marvels, antisepsis and asepsis. Antitoxin, the *x*-ray, the discovery of the tubercle bacillus, and the kinship between the mosquito and the yellow fever plague of commerce and of malarial torment, were most beneficent contributions to the relief of human suffering. Medical and surgical afflictions which hitherto yielded only to merciless fate now yielded with seeming ease to the measures of modern medicine. Life's expectation, he said, had been remarkably advanced during the last one hundred years. The expectations of life had increased in New York City since 1886, from a little more than 25 to quite 41 years, representing an equivalent in saving of 28,000 lives annually. In the 17th and 18th centuries the average death rate of the civilized world was about 50 per 1,000. In London, from 1628 to 1635 (in the absence of pestilence) the average death rate was 50 per 1,000. In 1902 in London the average death rate was a little more than 17 per 1,000. The broadening of the horizon of human thought and of human understanding, the product of enlarged human contact and interests, was rapidly leveling the barriers raised by sectional prejudices and doctrinal differences throughout the world, banishing the discords in professional strife that characterized the time of the birth of this organization but now rarely ever witnessed under any circumstances.

Hon. Charles H. Gaus, Mayor of Albany, welcomed the Society in behalf of the city.

Lieut.-Gov. Bruce, in the absence of Hon. Frank W. Higgins, Governor of the State of New York, addressed the Society, taking as his text, The Empire State.

Hon. St. Clair McKelway of Brooklyn, said that the State was urged to recognize some new division or branch of alleged medical theory or practice, in addition to those already recognized, nearly every year. Whether the State would do that or not was not for them or for him to determine. But it was for them, as citizens of the State, to consider, and by their consideration to help the State to a right conclusion. He emphasized the fact that the State would not lower the standard of primary medical education. The State would insist upon the literary and clinical requirements of that instruction, and upon the final examination of the students for that instruction, under State auspices within the subjects to which each school was addicted and limited. He called attention to the fact that the Board of Regents simply received orders from the Legislature, and that the Board was limited by those orders. This State insisted on prescribing primary standards in its own schools, and monopolized the control of intermediate education through its own Boards. After doing both it reserved to itself the licensure of medical, legal, dental, pharmaceutical, and other learned practitioners. It then created the demand that it should eventually provide and control the institutions themselves, whose human product it vised, examined, and licensed.

Centennial Exercises.—These furthe exercises' were held in Odd Fellows' Hall.

Oration on Medicine.—Dr. S. B. Ward of Albany delivered this address on the History of Medicine. In a general way he divided the century into four periods of twenty-five years each, and stated what progress was made in each. He pointed out that the real advance of medicine as a science began when the efforts to evolve new theories, and make facts accord with them, gave way to the scientific method of observing facts and generalizing from them. Among the characteristic conditions were mentioned the general introduction of vaccination which, of course, began just before the period of which they were treating; the discovery and perfection of auscultation, percussion, and the use of the stethoscope; the introduction of the clinical thermometer and of the sphygmograph; and especially the discovery and proof of the bacterial origin of disease, with the consequences that flowed from it in the way of treatment, and more particularly of prevention. The advance in medical education and the great assistance which the practitioner received from trained nurses, and the importance of laboratory examinations of the blood, sputum, and excretion, were also dwelt upon.

Oration on Sanitation.—Dr. Hermann M. Biggs of New York delivered this oration. He said that when one came to analyze the causes which had contributed to the extraordinary decrease in the death rates during the last four decades it was noted that they were very numerous and varied in character. During the earlier periods the improvement in health of the inhabitants of

large cities was to a great extent due to improvements in the general sanitary conditions and related to such problems as the provision of a pure and adequate water supply, the installation of systems of sewerage and improvements in the drainage, ventilation, and character of the habitations, paving the streets, abolition or restriction of nuisances, supervision of supplies of milk and food, including inspection of slaughter houses, the exclusion of epidemic diseases through quarantine, increasing efficacy in vaccination, the prevention of overcrowding, and other similar general measures. He then considered some of the factors by which reduction in mortality had been brought out. The most important development in preventative medicine in the early half of the century related to smallpox and the discovery of vaccination by Jenner. As a result of systematic vaccination and revaccination smallpox had become an insignificant cause of death in all well-regulated communities. In 1902 more than 800,000 vaccinations were made in New York City by the medical inspectors. Since the discovery of the etiological factor of cholera they had learned how to guard against this disease. It could not be doubted that the prophylactic measures based on this knowledge had kept Europe free from cholera in recent years. The outlook seemed hopeful that during the present century this disease would be controlled by preventative inoculations. The very large reduction in the death rate from surgical infectious diseases had been a material factor in the reduction of the general death rate. An extraordinary reduction in the death rate from diphtheria during the last ten years had occurred from the use of antitoxin, and in New York City this reduction had amounted to about 78 per cent.; that was, the death rate from diphtheria in the boroughs of Manhattan and the Bronx during 1905 was only twenty-two per cent. of what it was in these boroughs in 1894, which was the last year before the introduction of antitoxin. The annual saving of life in these boroughs alone amounted to nearly 3,000. The most important group of diseases as the cause of infantile mortality was the diarrheal and in the early seventies the death rate from this group of diseases alone varied between 40 to 60 per ten thousand of the population. In 1881 this had fallen to 36, and since that time the decrease had been continuous, until the last five years it had varied from 13 to 15. This decrease was due to a variety of causes, the most important of which was the improvement in the character of the milk supply of the city. In two or three classes of diseases there had been a steady increase in the death rates during the last forty years, especially in the combined death rates from diseases of the kidney and diseases of the heart. In the last forty years, since 1866, the death rate from these causes had increased about 12 per 10,000 of the population. A well-devised system of prophylaxis based upon scientific investigation of disease provided scientific methods, and these had been developed; the results had become more and more important. During the last half of the nineteenth century sanitary science and preventative medicine had done more to improve the physical well being of the race than they did in all the previous centuries. An abiding faith in the great value and truth of the discoveries of modern medicine and a confident assurance that future investigations would advance still further our knowledge justified the most sanguine hopes for the future great and rapid progress in sanitation.

Centennial Addresses.—Hon. Grover Cleveland, for the purpose of argument, divided humanity in two sections, one composed of a few doctors, and the other embracing the many millions of their actual or prospective patients. He appealed for himself and those millions. He believed he did not mistake the temper of his clients that he represented that there was growing up among them a feeling that there ought to be less mystery and high and mighty aloofness on the part of their medical advisers. They had long been wont to treat with a kind of amused toleration the names in pigeon Latin or Greek given by the doctors to very common things, and to diseases which already had names both simple and significant. But all this seemed to have much increased with the discovery of new remedies, and the chase after new diseases; and this increase had apparently been accompanied by additional mystery and additional inclination on the part of our doctors to remind them of their stately superiority. He desired to concede, without the least reservation, that they owed to the medical profession a debt of gratitude which they never could repay. But at the same time they were inclined to insist that in all that increased the usefulness and nobility of their profession this could not have happened without some corresponding advance in the intelligent thought and ready information of their patients along the same lines. He said they celebrated the close of the first century in the life and usefulness and honorable achievement of the Medical Society of the State of New York. If it had experienced vicissitudes, they were as nothing when compared with its many triumphs. And yet he believed there was no single incident of its career which furnished greater cause for satisfaction and joy than the harmonious unification of medical organization within the Empire State, which had just been accomplished under the name of this Society.

Dr. W. H. Welsh of Baltimore spoke of the deeds of men in the past, touching upon a few of the conditions which influenced the development of medicine in this country. Those influences were manifold and widely diverse and related to material political as well as social. He spoke of colonial medicine, of the inoculation against smallpox in 1721, and emphasized the fact that before the end of the eighteenth century substantial contributions had been made in this country to the knowledge, the prevention, and the treatment of the three great epidemics which afflicted the colonies, viz., smallpox, diphtheria, and yellow fever. In 1797 Smith, the father of medical journalism, published the first medical periodical. During the third decade of the nineteenth century a valuable impulse to medical education was received from influences which came from Edinborough and London. He referred to the activities of such men as Rush, Dake, Dudley, McDowell, Mott, Thatcher, Williams, Gross, and many others as well as the men from the frontiers along the banks of the Ohio. He said there was no reason to be ashamed of American medicine during the past century. We had led the way in the removal of abdominal tumors, the ligature of large arteries, in the treatment of deformities, in the study of appendicitis, and above all we first demonstrated the use of anesthesia in major operations, and had made also many and great advances in the practice of medicine and sanitation. We had also introduced the best methods of hospital organization and had the best medical library in the world.

Wednesday, January 31—Second Day

Election of Officers.—The following officers were elected: *President*, Dr. Joseph D. Bryant of New York (re-elected); *First Vice-President*, H. R. Ainsworth of Addison; *Second Vice-President*, F. C. Curtis of Albany; *Third Vice-President*, Allen A. Jones of Buffalo; *Secretary*, Wisner R. Townsend of New York; *Treasurer*, Dr. Alexander Lambert of New York. The following committees were appointed: *Arrangements*, chairman, W. J. Nellis of Albany, Arthur G. Root of Albany, Henry L. K. Shaw of Albany, Herman C. Gordinier of Troy, William C. Krauss of Buffalo, Edgar Vander Veer of Albany, Wendell C. Phillips of New York; *Hygiene*, chairman, John L. Heffernan of Syracuse, Wey and Hopkins; *Legislation*, chairman, Arthur G. Root of Albany, Ernest Wende, Egbert Le Fevre; *Scientific work*, chairman, Leo H. Newman of Albany, A. H. Bristoe, H. D Williams.

Members of the house of delegates, Willis G. MacDonald of Albany to succeed Dr. Lambert of New York, Edward E. Foster of New York to succeed Dr. Townsend of New York. The following *presidents of district branches* were appointed: First V. B. Gebuty, New York; second, H. B. Delatour, Brooklyn; third, F. J. Wheeler, Chatham; fourth, C. C. Madill, Ogdensburg; fifth, Nathan Jacobson, Syracuse; sixth, R. J. Loop, Elmira; seventh, J. F. Whitbeck, Rochester; eighth, De Lancey Rochester, Buffalo. The following *delegates* were appointed to the annual meeting of the American Medical Association: For two years, E. D. Ferguson, Troy, J. W. Grosvenor, Buffalo, E. Eliot Harris, A. Jacobi, Wisner R. Townsend, New York, Albert Vander Veer, Albany; alternates for two years, F. D. Reese of Cortland, Charles G. Stockton, Buffalo, W. G. Le Boutillier, F. B. Kinnicutt, J. A. Fordyce, New York, G. S. Comstock, Saratoga; delegates for one year, F. C. Crandall, New York, W. S. Ely, Rochester, H. L. Elsner, Syracuse, George Ryerson Fowler, Brooklyn, Roswell Parke, Buffalo, H. D. Wey, Elmira. Alternates for one year, C. S. Payne, Liberty, J. C. Davis, Rochester, C. P. Briggs, Ithaca, L. C. Ager, Brooklyn, L. J. Burrows, Buffalo, J. Orley Stranahan, Rome.

Report of a Case.—Dr. John F. W. Whitbeck of Rochester reported a case of simultaneous extrauterine and intrauterine gestation.

A Point in the Technique of Breast Amputation for Cancer.—Dr. Robert F. Weir of New York read this paper. He said that Halsted in addition to the radical operation which bore his name and was generally practised by surgeons went still further and showed that in some instances the rule that when the supraclavicular glands became enlarged the disease was beyond surgical relief, was a too stringent one. By him and others these glands had been attacked either, by an incision opening the posterior triangle of the neck or by the more severe and unnecessary procedure of sawing through the clavicle and thus exposing the supraclavicular space from an incision enlarging the breast wound upwards. The encouragement he had given to further effort in this direction only bore out the general rule that now firmly existed in all operations for cancer. This was, that all glands and lymph channels leading from the malignant focus should be examined and treated surgically if felt or seen to be involved. To carry out this rule in breast amputations it was necessary to open up and examine the supraclavicular region in each case where glands were found cancerously enlarged in the axilla. This was a proper precaution, but to avoid this additional incision he had been led to a little procedure which was the gist of his preliminary remark. Some eight or ten years ago, and certainly before the muscle removing or radical operations came into vogue, he found that in chasing up the enlarged lymphatic glands to the very point where the axillary vessels passed under the clavicle he could often carry his finger under the clavicle to one side of the vessels by pulling the arm vertically upwards and thus reached the gland, etc, well under and slightly above the clavicle, had become a fixed rule with him and he had employed it somewhat amplified in every breast amputation that he undertook. The skin of the neck, wherein no enlarged glands could be felt through the little or fore finger, could be carried in this way under or beyond the clavicle its full depth into the neck and the supraclavicular space behind the sternomastoid muscle fully explored. If enlarged glands were found in the region of the customary incision was made along the edge of the clavicle to the root of the sternomastoid muscle and up a short distance along its posterior border and the space cleaned out of glands and fat tissue If nothing was found the breast wound was closed as was usual save that he preferred to place a small cigarette drain in the hole bored alongside the vessels to be withdrawn at the end of twenty-four or forty-eight hours. This method of exploration had been tested so many times by him that he commended it to his surgical colleagues. As an additional reason for the extended use of this digital exploration, it need only be recalled that in nearly one-half the cases (47 per cent.) enlarged glands had been found where they could not be recognized by examination before the axilla was opened. A similar outcome had been met with in the neck in many instances, though, of course, not to as frequent a degree as in the axilla.

Dr. A. Jacobi of New York emphasized the value of methylene blue in cases of inoperable cancers, particularly abdominal.

Notes on Factors which Further Convalescence Following Abdominal Section.—Dr. Frederick Holme Wiggin of New York read this paper and called attention to the necessity of having patients under observation for a longer or shorter period prior to the operation when the circumstances of the case permitted it, in order that the digestive organs might be gotten into good condition, and that any tendency to insomnia might be overcome. The daily use of ergot in tonic doses, as well as massage, was advocated for this purpose. The advantage of selecting an early morning hour for the performance of the operation was pointed out as well as the necessity of careful preparation for the operation and a short period of anesthesia. The writer also advocated the washing out of the patient's stomach at the close of the operation and placing therein several ounces of a saturated solution of magnesium, or the hypodermic injection of eserine sulphate for the purpose of having gas and fecal matter pass the bowel within a few hours of the completion of the operation. The use of veronal in solution injected into the bowel to induce sleep during the first fifteen hours was also advised. The use of alcoholic and other stimulants was considered unnecessary and unadvisable, serving in his experience to lengthen rather than to shorten convalescence.

Some Comments on the Results of the Sanatorium Treatment of Pulmonary Tuberculosis.—Dr. John H. Pryor of Saranac Lake read this paper. He said that the annual report of the New York State Hospital for Incipient Pulmonary Tuberculosis recently transmitted to the Legislature afforded the first opportunity to review a complete year's work along a new line of progress. Careful scrutiny of the clinical statistics revealed some striking facts of great interest to the medical profession of this State. There was abundant evidence that this institution, created to establish and develop a new method of rational relief for the consumptive, had fulfilled its purpose with signal success. The results obtained were unparalleled and the object lesson would still be of inestimable value from an educational and benevolent standpoint. It seemed eminently fair and proper at this time to claim for the institution the pre-eminence which it deserved among the sanitoria for consumptives and to call attention to the wisdom of the novel system of administration and control embodied in law. This achievement was remarkable when it was realized that such a project could be made successful in New York State under present unfavorable conditions. The annual report contained a comparative table of results for the year ending December 31, 1905: The number of patients treated during the year, 293; the number of patients in hospital, December 31, 1905, 103; the number to be reported upon, 190. Of these 190 patients 25 remained less than two months in hospital and were not included in the comparative table of results. These 25 cases were reported upon in detail in the appended table concluding the report. In the majority of instances, patients who were discharged from the hospital after a stay of less than two months were favorable cases and improving at the time of discharge.

The classification of cases was made in accordance with the definitions adopted by the National Association for the Study of Tuberculosis. It was observed that 53 per cent. of the patients admitted were designated as incipient cases. This percentage showed an increase and was the highest attained as shown by collected reports and statistics. But

the increase continued and the remarkable statement appeared that on December 31, 1905, 70 per cent. of the inmates could be properly included in the group of early or incipient cases. The chief reasons for the improvement in the character of cases were probably to be found in the early cooperation and more careful work of the examiners in different cities and the recognition by the profession and the public of the vital importance of an early diagnosis and prompt treatment. It was safe to assume that 50,000 people in this State were suffering from pulmonary tuberculosis, and there must be thousands of the afflicted still in a curable stage. Some of the reasons why the disease was not detected early had been discussed in the MEDICAL RECORD, November 25, 1905. ("Some Facts Concerning the Early Diagnosis of Pulmonary Tuberculosis.")

It was most gratifying to learn that the appropriation for maintenance and equipment would probably be increased this year. The organic law explicitly stated that the institution should accommodate not less than 200 inmates. Although the trustees urged a sufficient appropriation to fulfill this requirement last year, economical officials succeeded in limiting the maintenance fund and the population to 100. The present buildings of the New York State Hospital should be filled with patients without any meddling with the law or any change in the methods of management. The transcendent importance, from any standpoint of early detection and prompt relief, was made strikingly apparent by the difference in the results obtained under similar conditions at the New York State Hospital. Of the incipient cases, 72 per cent. apparently recovered; in 24 per cent. the disease was arrested; 3 per cent. improved; and only 1 patient failed to improve. When compared with the results of treatment of the moderately advanced, which in the past had been frequently regarded as early and favorable, the picture was radically different and not as radiant as sometimes painted. Of this class 14 per cent. apparently recovered; the disease was arrested in 61 per cent.; 17 per cent. improved; 8 per cent. were unimproved. Of the advanced cases which were still regarded by physicians as incipient none apparently recovered. Disease arrested, 23 per cent.; improved, 62 per cent.; unimproved, 15 per cent. Thus the percentage of apparent recoveries in the incipient stage was more than five times greater than those in the moderately advanced stage, and seventy-two times greater than those in an advanced stage. The report showed 44 per cent. of apparent recoveries in all cases and 73 per cent. of apparent recoveries in the incipient stage In view of this revelation he asked if it was not timely to emphasize the fact that a new era had been inaugurated in the intelligent cure of the consumptive. Much had been written to show that tuberculosis in an advanced type was occasionally curable, and this contention was not disputed, but the suffering and hardship and the deprivation of home surroundings had been immeasurably greater than any lasting benefit obtained. No patient should be recorded as recovered until two or three years after health had been restored, and ultimate results should be accepted with reserve until five years had passed. The term arrest in relation to tuberculosis was a loose one, and the generally accepted meaning left too large an opportunity for individual opinion. There could be no doubt that an arrest was more lasting and more apt to be followed by recovery if the case was incipient. The care of a large number of patients who betrayed the evidence of invasion or beginning disease revealed occasional fallacies quite generally accepted. Sanatorium treatment had become largely an iron-clad routine practice and consisted principally of the open-air life, rest, and forced feeding. The time devoted to almost absolute rest in the early stages might be too prolonged, and continuous stuffing during a period of repose without study of the individual case, and the relation of dietetics might prove most irrational. Tuberculosis might or might not be arrested in its course while the individual was converted into an immobile aggregation of fatty cells. With active exercise or work the surplus melted away. Many so-called recoveries and arrests were apparent only so long as the individual confined any activity to involuntary functions. At this time the observation of Moxon seemed pertinent, "It is quite as important to know what kind of a patient the disease has got as to know what sort of a disease the patient has got." In Germany, the term "able to work" had been invented to describe a condition which denoted the character of the arrest or the degree of improvement. It meant simply that a relatively short stay in a sanatorium or a hospital would enable the patient to resume work for a very indefinite time, dependent largely upon the stage of the disease and the character of the occupation. It was difficult enough to maintain recovery under favorable conditions, and the greatest problem confronting those interested in sanatoria for the poor was to be found in the appealing necessity for suitable employment and surroundings for the patient who must resume the struggle for existence. The monotony of the form of treatment as practiced to-day should be relieved of some hardship by more amusement, and recreation provided. The net cost of maintenance paid by the State for the past year was $20,777.47. The cities and counties paid the balance. It would be interesting to know if the State has realized more fully on any other small investment. Finally, the expectation of permanent results hinged so largely upon the sanatorium treatment of the poor incipient case that attention was briefly invited to an anomalous condition becoming more noticeable each day. The poor person who received sanatorium treatment frequently enjoyed a much better chance for his life than the well-to-do patient who was unable to obtain proper supervision, discipline, frequent advice, and close attention to details. The New York State Hospital for Incipient Tuberculosis had won the right to expect the cordial support of the medical profession of this State. The experimental stage had been passed, and when the authorities at Albany were made to appreciate its just demands, the full benefits for which it was created would certainly be attained. New York city had led the way in prevention and New York State now led in method of management and results.

Dr. BEMIS of Jamestown, Dr. WALSH of New York, Dr. BERNSTEIN of Rome discussed this paper.

Toxic Arthritis.—Dr. HENRY A. FAIRBAIRN of Brooklyn presented this paper which was read by Dr. Bristow. He said that the term "rheumatism" was a misnomer and did not properly belong to a scientific nomenclature. It was the cause of much confusion and served as a cover for error. It was applied to conditions which could not be defined except by the process of exclusion. Their essential characteristic was yet to be revealed. Two characteristics were always present, viz., a toxemia accompanied by an inflammation of a part of the motor apparatus. It was possible to express these by the generic term toxic, and by appending the termination "itis" to the name of the part affected. This would exclude the other inflammations, the underlying cause of which was known, possible of definition and denomination. There seemed to be objections on the part of some to use the term infectious, as it carried with it the implication of communicability. The use of the term toxic would overrule such an objection, and at the same time describe the nature of the condition.

Dr. TOWNSEND of New York, Dr. VANDER VEER of Albany, Dr. KINNEAR of Clifton Springs, Dr. A. JACOBI of New York, and Dr. WALSH of New York discussed the paper.

Technique of Vaginal Section in Pelvic Diseases of Women.—Dr. J. RIDDLE GOFFE described at length the technique employed by him in doing vaginal section, illustrating his remarks with several diagrams.

Dr. MILLER of Syracuse, Dr. WIGGIN of New York, Dr. FORD of Utica, Dr. GALLANT of New York, Dr. BUDD of New York, and Dr. BROTHERS of New York discussed this paper.

Induction of Hyperleucocytosis in Infections.—Dr. W. G. Macdonald of Albany read this paper.

Oration on Surgery.—Dr. Roswell Park of Buffalo presented this oration, which was read by Dr. Henry R. Hopkins of Buffalo. He said that in no department of science had intellectual development brought greater changes in a comparatively brief space of time than in medicine. In the marvelous surgical accomplishments of the past thirty years one could see the tremendous effect of the development of a theory, since not until the germ theory of disease had been tested thoroughly and proven reliable could rational methods be adopted for combating the minute and deadly enemies by which mankind was always surrounded. Again the theory of evolution meant the establishment of an organic continuity between the lowest and the highest forms of life and taken in conjunction with an accurate knowledge of embryology it had much to do with explaining the congenital defects and arrest of development with which surgeons had to deal. He then referred to the greatest discoveries of the past century, especially anesthesia and antisepsis. The evolution of the surgical laboratory constituted the most conspicuous advance of surgery, and he divided the work done here into the minute and the gross. Under the minute work he included that which was purely histological, that which could be ranked as bacteriological, and that which could be spoken of as biochemical. Illustrative examples were given of the gross work in the surgical laboratory. He spoke of the work done in the surgery of the spinal cord, in cerebral localization, and particularly of the work that had been done with special organs. The development of the Medical Museum had done much to extend the capabilities of surgery. What was said of the museum could also be said of libraries. A considerable part of advance during the last twenty-five years had been due to improvement in general nursing which had been effected through the influence of these schools for nursing, and in the United States to-day he said there were as many as 20,000 graduate nurses. The skillful trained nurse was the surgeon's best adjuvant. One of the most important surgical developments of recent times was the more rational treatment of cancer. To New York State belonged the credit of being the first government in the world to inaugurate an institution for the scientific study of cancer, and the State Laboratory for the Investigation of Cancer, in connection with the University of Buffalo, was entitled the credit of being the pioneer institution of the kind in the world. The development of so-called military surgery had been another conspicuous feature of their growth. Another conspicuous feature was the development of the perfected modern hospital.

Dr. W. W. Keen of Philadelphia, who had been invited to discuss the oration, regretted that he had been late and heard but a portion of it. He briefly referred to the work that had been done by such men as Crile and Cushing on blood pressure, of Meltzer on the anesthetic properties of sulphate of magnesium, of Rogers and Beebe in the serum for the treatment of exophthalmic goitre, and he ended by stating that such work as was being done to-day by the younger men would further the interests of humanity and bring comfort and health to the sick and suffering.

(To be continued.)

Last Illness of the Great Conde.—A reader at the Bibliothèque Nationale has dug up the prescriptions for medicines which were ordered to Prince Condé in his last illness. A consultation of three physicians prescribed "a syrup made of rice, marshmallow roots, and sugar candies," and a blister to be applied night and morning. The distinguished patient failed to improve and a fourth doctor was called in, who ordered "two ounces of a preparation of hyacinths to fortify the heart and repair the exhausted forces," followed by "poppy water," "syrup of stag horns," "ipecacuanha," "liquorice," and "mistletoe roots." The prince lived through this treatment for six months, when he died, according to the death certificate, "of the malady from which he was suffering."

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Two Hundredth Regular Meeting, Held January 5, 1906.

The President, Dr. T. Mitchell Prudden, in the Chair.

A Case of Stokes-Adams' Syndrome.—Dr. Edward G. Janeway presented a woman, 51 years of age, who suffered from bradycardia, with Stokes-Adams' syndrome. He stated that at a meeting of the Society in the early part of 1900 he had shown a previous case of this same condition, together with tracings of the heart, jugular, and carotid pulsations, taken by Dr. Theodore C. Janeway in Professor Graham Lusk's laboratory. That was the case of Lieut. W., whose heart beats were at times as low as 20 per minute. In that case the pulsations of the jugular were readily recorded. In the present case the history showed that the patient had diphtheria in childhood, and fifteen years ago she had trouble in one elbow joint. Beyond these illnesses she had only suffered at times with colds. In November, 1904, while returning home from a hurried shopping trip, she had almost fainted on her way to the train. Five months later she had another attack after slight excitement. Since then, whenever she was hurried, she became faint, and recently she had an attack of complete unconsciousness, which came on after hurrying somewhat. She had no pain or discomfort of any kind, but was short of breath on exertion, and at times at night. Her legs had been somewhat swollen at times during the past summer, and her right knee had become stiff and painful in the course of the last three months. For the past year she had known that her puse was slow. From her account, its lowest rate per minute was 38; the highest, 44. Upon examination, the heart was found to be enlarged, the apex being beyond the nipple line when standing, and about the level of the nipple line when lying. There was a moderate lifting impulse. The heart rate ranged from 46 to 48 per minute. A systolic murmur was heard at the apex, and louder and harsher in the axilla and posteriorly, and at times a seeming extra systole was interposed. At the base, a systolic murmur, loudest along the left border of the sternum, between the second and fourth ribs, was audible. At the base, also, an occasional interposed beat could be heard. There was no sound which could be attributed to auricular action. Over the upper precordial area there was some lifting action. The arteries did not appear to be thickened. The veins in the neck beat faster than the arteries. The arterial pressure was 150 mm. mercury maximum; 95 mm. minimum. There was nothing found in the abdomen. The urine showed no evidence of renal disease. There was slight anemia. Tracings of the heart and carotid pulsations were readily obtained, but it was impossible to get a separate external jugular tracing. A study of these showed only a line for the jugular, but in the tracing of the carotid pulsation a number of extra waves were apparent—in all probability due to the external jugular pulsation. By inspection, and by very gentle palpation, these could be counted, and numbered about 115 per minute. On the tracing the carotid and cardiac pulsations were 42 to the minute. It had been the intention to test the effect of atropine upon the tracings, but, owing to the fatigued condition of the patient, that was not possible. She took 1-150th of a grain of atropine at four o'clock, and two and a half hours later had a severe fainting spell; when she recovered from this she complained of general numbness, and, according to the account of her attendant, her face was red (not pale) during the attack.

Dr. Janeway said that in the 64th Volume of the *Deutsches Archiv für klinische Medizin*, page 316, Professor William His, Jr., in 1899, published a case under the title, "Ein Fall von Adams-Stokes'scher Krankheit mit ungleichzeitigem Schlagen der Verhofe und Herzkammern (Herzblock)," in which he recorded a case observed in 1893, and spoke of the experiments he had made on animals to establish heart block by interfering with the auriculo-ventricular bundle bearing his name. He also stated that

he had presented his curves and charts at the International Congress of Physiologists, at Berne, in 1896. Unfortunately, when the patient, whose history he gave, died, Dr. His was unable to obtain a post-mortem examination. Dr. His' relations to this condition, Dr. Janeway said, did not seem to be generally understood. It was owing to the article referred to above that the tracings in Lieut. W.'s case were taken in 1900; the tracings in his case showed more frequent venous than arterial or cardiac pulsations. He referred to another case, that of a woman, in whom the pulse at times dropped to 12 per minute, and in whom not only unconsciousness, but convulsions occurred. She died during one of these attacks, and at the autopsy, which was made by Dr. LeWald, Dr. Theodore C. Janeway noticed that there was a gross lesion in a position to interfere with the His bundle. Dr. Janeway also referred to the experiments of Professor Erlanger, of the Johns Hopkins Hospital, together with his study of two cases of Stokes-Adams' syndrome recorded in the *Journal of Experimental Medicine;* also to the record of a case published, together with the post-mortem findings, in the *American Journal of the Medical Sciences* for December, 1905, by Dr. Stengel, of the University of Pennsylvania. He described a gross lesion in a position to involve the His bundle.

Clean Air.—By Dr. T. Mitchell Prudden. (See page 165).

Dr. W. Gilman Thompson said he hoped that the valuable paper of Dr. Prudden would receive the wide circulation that the importance of the subject entitled it to. Personally, Dr. Thompson said, he had long been interested in this subject, particularly from the hospital standpoint, and in two institutions with which he was connected he had for the past few years been conducting a crusade against the practice of dry sweeping. In one of these hospitals some interesting experiments had recently been carried out at his suggestion by the pathological department to determine the average bacteria contest of the wards under different conditions, with the following average result: On dry plates in a quiet ward eight colonies were obtained on culture; after moist sweeping, twenty-six; and after dry sweeping, sixty-nine. In connection with the dust analyses in the Subway, the speaker said that such an examination would be incomplete if it were limited to the dust content merely, without taking into consideration the presence or absence of other deleterious substances, such as carbon dioxide, nitrogenous waste, and other factors like the clinical examination of the employees who lived in the Subway atmosphere. While he, of course, did not wish to be understood as being an advocate of the inhalation of dust-laden air, and while the air in the Subway was, no doubt, noxious, he questioned whether the inhalation of dusty air was invariably as harmful as many supposed it to be. In that case it would be natural to see a great prevalence of certain pulmonary affections, particularly bronchitis, among persons who constantly worked in a dust-laden atmosphere, such as street sweepers, ash-cart drivers, etc., but such was not observed. On the contrary, such affections were not more frequent among those classes than among other laborers. Possibly the effect of the dust was offset by the fact that these men spent many hours in the open air, but after all one had to concede that while we all inhaled a great deal of dust and dirt, it was not necessarily deleterious, for so much depends upon the *kind* of dust, and in the lungs we possessed an active mechanism for the purpose of getting rid of these foreign substances. Dr. Thompson said that in the hospital experiments he had referred to, no specific microorganisms were found aside from the streptococcus and staphylococcus, fungi and spores. In one instance where a case of pulmonary tuberculosis had originated in the ward no tubercle bacilli were found in the ward dust, nor were there any of the microorganisms of influenza or pneumonia. Even more important than the method of getting rid of the dust in the room was the question of ventilation, and he had recently conducted experiments to compare the general foulness of hospital air in connection with the dust foulness. The carbonic acid content of pure air should never exceed four parts per 10,000, but one hour after twenty visitors had been admitted to a ward of 26 patients the carbonic acid content had increased to 5.13 per 10,000, while ten minutes later, after the windows had been opened, it had fallen to 4.34 per 10,000. This showed how the air that was intended for patients was vitiated by visitors, for whom no allowance was usually made in figuring the air content of the ward, under the pernicious system of "closed" ventilation. In addition to containing dust, nitrogenous waste, carbonic acid, etc., the atmosphere probably possessed deleterious properties of which we as yet knew nothing definitely, and which could not be measured by present physical methods. In pure air there was a certain property which we now crudely called "vitality," and its presence or absence could not be demonstrated by the thermometer, hygrometer, or any other instrument of precision with which we were acquainted.

Dr. John Winters Brannan said that the Metropolitan Opera House had installed the vacuum cleaning system, and that it was to be placed in all of the hospitals now under construction in the Department of Bellevue and Allied Hospitals, as well as in the old Bellevue building. Aside from its superiority over the older methods of cleansing, it was much more economical, as it did away with about 25 per cent. of the help.

Dr. Hermann M. Biggs said the problem discussed in Dr. Prudden's paper was a very difficult one, and involved, first of all, the education of the public. The Board of Health had done a certain amount of work along the lines suggested, but the task was such a stupendous one that nothing seriously had been attempted. The officials of the Subway and the Elevated Railroad had been communicated with at intervals in regard to the matter, and they had promised to institute certain reforms, but they had been spasmodic in character. The only way in which the reforms could be carried out would be by the continuous supervision of the Health Board officials, which would require a great increase in the force of the sanitary police, and the present outlook for this was not very promising. The sanitary squad now numbered 36, and it was inadequate for even its present duties, which included the abatement of nuisances, the control of cases of contagious disease, protection of the vaccination corps, the milk and food inspectors, etc.

Dr. Robert F. Weir said that Dr. Prudden, in his paper, had referred to the presence of germs in the spittle. This fact, some years ago, attracted the attention of surgeons, and by some of them masks were worn while operating in order to obviate the danger of infecting the wound in this way. The practice had practically been abandoned for the reasons, first, that the amount of such infective germs must be very slight; and, second, because the resistive powers of the normal tissues were such that they were able to neutralize a considerable amount of infection. While in our aseptic methods it was best to err on the side of safety, there was such a thing as carrying the precautions too far.

Dr. Beverley Robinson said that for a long time he had advised the use of a simple gargle—preferably one containing some antiseptic, like formalin or boracic acid, as an aseptic precaution, especially in susceptible individuals after being in a crowded place. The unfortunate drawback connected with such asceptic gargles was that they usually had an acid reaction; and while acid was good to kill microbes, it was bad for exposed dentine. Hence acid mouth washes were prejudicial, and should not be habitually used. This statement was commended to zealous, though frequently ignorant, dentists, and, perhaps, to a few practitioners of medicine.

Dr. Prudden, in closing, said there were, of course, many factors besides floating dust that might contribute to the insalubrity of the air. These varied under different conditions. Which was the most important was a question not discussed in his paper. As regarded the more common problems of ventilation, it seemed to him that too little

attention had been paid to the results of an experimental study recently made by Flügge, from which it appeared that the lassitude, headache, somnolence, etc., frequently experienced in crowded and ill-ventilated rooms were due not so much to poisonous products of human waste in the air as to a high temperature and an excess of moisture in the atmosphere.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending January 27, 1906.

	Cases	Deaths
Measles	1468	34
Diphtheria and Croup	348	41
Scarlet Fever	226	16
Smallpox		
Chickenpox	215	
Tuberculosis	404	178
Typhoid Fever	29	5
Cerebrospinal Meningitis	23	16
Typhus Fever		
Yellow Fever		
Cholera		
Totals	2,713	290

Congenital Tuberculosis.—Ralph Waldo Lobenstine says that not a single indisputable case of direct bacterial infection from the father is on record. Experiments have proven beyond a doubt, however, that the semen may contain tubercle bacilli in advanced general tuberculosis or severe tuberculosis of the testes. The infection is always transmitted through the placenta or decidua basalis from the maternal blood. The placenta shows in all cases tuberculous changes, but the degree of infection of the child does not, of necessity, depend upon the degree of those changes. The ovary may be the seat of the tuberculosis, but it has not been demonstrated that direct infection takes place through an infected ovum. The writer reports the case of a tuberculous mother who died on the sixth day after labor. The child died on the nineteenth day. The pathological diagnosis in the case of the latter was acute miliary tuberculosis of the lungs, liver, spleen, kidneys, and mesentery. Bronchopneumonia was present, also fatty liver and hyperplasia of lymphnodes. The writer sums up the pathology in the mother's case as follows: It may be assumed that the basal decidua was first affected, the tubercle bacilli traveling from the decidual sinuses to the covering of the villi, localizing there and causing thrombi in the adjacent intervillous spaces, destruction of the covering epithelium, entering the villous stroma, and finally reaching the chorion. The fetus was doubtless infected comparatively late, as suggested by the early stage of the tubercles in the child nineteen days old. Such children should not be allowed to nurse the mothers, but should be fed either on the milk of a wet-nurse or on modified cow's milk. They should not be allowed with the mothers nor in the room with other tuberculous persons. They should be kept in as pure an atmosphere as possible, and especial care should be given to the maintenance of the body temperature close to the normal.—*Bulletin of the Lying-in Hospital of the City of New York.*

The Practical Application of the Pressure Narcosis Method.—Brauer describes an apparatus designed to render possible operations involving opening the thorax. It differs from Sauerbruch's operating chamber in that Brauer raises the pressure of the air the patient inhales, whereas Sauerbruch rarefies the air in the chamber containing the surgeon and the patient's body up to the neck. Brauer warns against the use of any plan which involves intubation, and believes that he has solved the problem in the simplest manner possible by enclosing the patient's head alone in a glass-topped pressure box. This box is connected with a suitable air pump for maintaining the pressure, and has an expiratory valve which can readily be adjusted to any degree of pressure. The patient's head is enclosed in a cowl of soft rubber, leaving the features exposed, and armholes for the hands of the anesthetist are also provided with gauntlets of rubber so as to make air-tight contacts when the pressure is raised. The anesthetic may be given in the ordinary way, or preferably, by the Roth Dräger oxygen-chloroform apparatus. The apparatus is designed to permit of the greatest possible ease of manipulation and control of the patient's condition, and an important feature toward this end is believed to be the fact that the anesthetist and operator are not separated by a partition as is the case in the methods of Sauerbruch and Engelken. The pressure necessary is lower than is generally believed, and a tension equal to 6–8 cm. of water, 10 cm. at the most, is amply sufficient. The author thinks that the apparatus will be useful not only in thoracic surgery, but also for applying pneumatotherapy.—*Deutsche Medizinische Wochenschrift.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ended January 27, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, San Francisco	Jan. 6–13	7	..
Colorado, Teller County	Dec 1–31	10	..
Florida, Jacksonville	Jan. 13–20	5	..
Alachua County	Jan 13–20	1	..
Columbia County	Jan 13–20	4	..
Hillsboro County	Jan. 13–26	12	..
La Fayette County	Jan. 13–26	6	..
Kentucky, Covington	Jan. 13–26	2	..
Louisiana, New Orleans	Jan. 13–20	1	..
Shreveport	Jan. 13 20	3	..
Maryland, Baltimore	Jan. 13–20	4	..
Missouri, St. Louis	Jan. 13–20	1	..
Montana, Flathead County	Dec. 1–31	1	..
Ohio, Cincinnati	Jan. 12–19	6	..
Virginia, Norfolk	Jan. 15	5	At Crane Island 68
Washington, Bellingham	Dec. 1–31	8	..
Cowlitz County	Dec. 1–31	7	..
Spokane	Dec. 1–31	2	..
Whitman County	Dec. 1–31	1	..
Wisconsin, Appleton	Jan. 13–20	3	..
Milwaukee	Jan. 6–20	2	..

SMALLPOX—INSULAR.

Porto Rico, San Juan	Nov. 1–30	..	Present

SMALLPOX—FOREIGN.

Africa, Cape Town	Dec. 2–9	2	..
Brazil, Rio de Janeiro	Dec 10–24	3	1
Canada, Toronto	Jan. 6–13	1	..
Chile, Antofagasta	Oct. 1–31	1	51
Antofagasta	Nov. 1–30		27
China, Hongkong	Dec. 2–9		1
Ecuador, Guayaquil	Dec. 10–17		5
France, Paris	Dec. 31–Jan. 6	15	1
Gibraltar	Dec. 24–Jan. 7	12	1
India, Bombay	Dec. 19–26	..	6
Karachi	Dec. 17–24	1	..
Italy, Catania	Jan. 4–11	..	3
Mexico, Tuxpam	Jan. 9–16	20	1
Russia, Moscow	Nov. 11–23	10	3
Odessa	Jan. 16–30	25	3
St. Petersburg	Dec. 19–23	26	3
Spain, Barcelona	Dec. 21–31	..	13

YELLOW FEVER.

Brazil, Rio de Janeiro	Dec. 10–24	9	9
Cuba, Habana	Jan. 16–22	2	2
Ecuador, Guayaquil	Dec. 10–17		6
Mexico, Orizaba	Jan. 7–13	1	1

CHOLERA—INSULAR.

Philippine Islands, Manila	Dec. 2–9	1	1

CHOLERA—FOREIGN.

Russia, Government of Lomza	Dec. 18–21	5	..

PLAGUE.

Brazil, Rio de Janeiro	Dec. 10–24	16	7
China, Hongkong	Dec. 2–9	3	3
India, Bombay	Dec. 19–26	..	9
Karachi	Dec. 17–24	17	13
Japan, Kobe	Nov. 8–Dec. 8	41	30
Osaka	Nov. 2–Dec. 8	66	51
Peru, Guadeloup	Nov. 20–Dec. 10	2	..
Lima	Nov. 20–Dec. 10	7	..
Trujillo	Nov. 20–Dec. 10	3	..

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 6.
Whole No. 1840.

New York, February 10, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

A NEW METHOD OF TESTING THE FUNCTIONS OF THE DIGESTIVE APPARATUS.

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About two years ago[1] I described a method of estimating the motor functions of the digestive apparatus. It consists in having the patient swallow a number of small porcelain or glass beads, which are later looked for in the feces by means of my stool sieve.[2] The time elapsed between taking them and the reappearance of the first beads indicates the length of their sojourn in the digestive apparatus. I tried at that time to coat these beads with substances which are digested in the stomach or bowels, in order to be able to judge the functions of the various parts of the digestive apparatus. This idea, however, was not feasible, on account of the difficulty of preparing the test beads.

At the beginning of this year I conceived the plan of attaching solid food stuffs to glass or porcelain beads (by drawing them through the opening in the bead and tying them on with a silk thread) and then to have them pass through the stomach and bowel in order to see finally what remained attached to the bead. It is self-evident that a substance which is entirely digestible will disappear, whereas indigestible substances will be found in the feces attached to the bead.

Indeed it is possible in this way to ascertain the digestibility of many food substances in normal as well as pathological conditions.

Physiological.—I tried at first to find out how various food stuffs behaved in the stomach and bowel of apparently healthy persons. For testing the work of the entire digesive tract it was only necessary to have the beads with the food attachments traverse it and then examine them.

To test the work of the stomach only, the beads with the food substances attached are tied to a long silk thread, placed in a gelatin capsule, the thread being drawn through the capsule, and then swallowed. The thread was passed into the stomach only for a distance of 50 to 60 cm. from the lips, and then the food stuffs were exposed for from four to six hours to the action of the gastric juice. At the end of this time the beads were again drawn up by the silk thread and carefully examined. In this way the extent of the gastric digestion could easily be estimated. Both methods combined (stomach thread test and plain bead test) enabled us to judge of the digestion in the stomach as well as in the bowel.

The following experiments have been made on healthy persons:

1. *Catgut and Meat.*—September 26, 1905. Cr. and Dr. K. each swallow a capsule containing three catgut (white) and three corned beef (red) beads. Eighteen hours' later two white and two red beads without cagut or meat are found in Cr.'s movement. Thirty-six hours after taking capsule K. has a movement in which five beads (three white and two red) without catgut or meat are found.

2. *Catgut and Tendon (Raw).*—October 12, 1905. Dr. H. E. swallows a capsule with three catgut (white) and two tendon beads (yellow). After seventeen hours all five beads appear in the stool. The white beads are free, but the yellow ones still hold the tendon.

3. *Raw Chicken Skin and Raw Beef.*—October 15, 1905. Dr. H. E. swallows two yellow beads with raw chicken skin attached and three red ones with raw beef. One of the latter has the silk thread attached arranged in such a manner that it can be drawn up again. Six hours later the red bead is drawn up from the stomach. The beef is still attached. Twenty-four hours later the bowels move. Two yellow and one red bead were found all without food particles.

4. *Raw Potato and Apple.*—October 23, 1905. Dr. H. E. takes a capsule containing two beads (blue) with raw potato and its skin attached and two white ones with raw apple and peel. Twenty hours later a blue and a white each are found in the stool. To the blue bead remains attached a piece of potato skin (no potato substance); to the white bead a piece of apple peel without any apple. In the potato skin starch could not be demonstrated microscopically by means of iodine; only a little erythrodextrin was still present.

October 29, 1905. Cr. takes a capsule with two blue beads containing raw potato with the skin. Seventeen hours later both beads appear in the stool. There are still particles of potato present, starch reaction is strongly positive.

October 27, 1905. Dr. H. E. swallows some beads attached to a silk thread and placed within a capsule, containing catgut (white) raw chicken skin (yellow) and raw potato with skin (blue). Since the thread is made about fifty centimeters in length the beads cannot enter the intestinal tract. Seven hours later the thread with the beads is drawn up from the stomach. Catgut has disappeared; the other substances are all present. Microscopically the potato shows a strong iodine reaction and plenty of starch granules.

5. *Raw Potato and Fish Bones.*—October 29, 1905. Dr. H. E. takes a capsule with a blue (raw potato with the skin) and two green beads (fish bones). After about twenty hours the blue bead is found in the stool with potato attached. The skin as well as the potato substance itself are well preserved; starch reaction positive. After forty-four hours the green bead without fish bones is found in the stool.

6. *Wax and Paraffin.*—October 31, 1905. Cr. and Dr. H. E. take each a capsule with three green (wax) and three blue (paraffin) beads. After twenty-four hours in Cr. and thirty-six hours in Dr. H. E. all beads are found in the stool. Both wax and paraffin have remained on the beads.

November 1, 1905. Dr. H. E. swallows a fish bone bead and a paraffin bead attached to a silk thread. Three and a-half hours later the silk thread is drawn up. The fish bone has disappeared and the paraffin has remained unchanged.

7. *Stearic Acid.*—November 2, 1905. Dr. S. takes a capsule with two brown (stearic acid) and one blue (fish bone) beads. November 4, 1905, the three beads are found in the stool. The brown ones contain the stearic acid, the blue one is empty, the fish bone having disappeared.

8. *Suet and Mutton Fat.*—Dr. S. takes a capsule with two yellow (suet) and two white (mutton fat) beads. Thirty-six hours later the four beads reappear in the stool. The yellow ones are empty; the white ones show a small thin layer of yellowish substance within their lumen.

November 26, 1905. Cr. takes a capsule with three beads; a large one, containing a fish bone, a medium-sized one, containing mutton fat, and another one with mutton fat enclosed in gauze. Four and a-half hours later the bead surrounded with gauze is found in the stool. It does not contain any fat. Seventeen hours later another stool produces a fish-bone bead with the fish bone intact.

9. *Boiled Potato with Skin.*—November 11, 1905. Mrs. E. takes a capsule with a yellow (potato boiled for two minutes) and a pink (potato boiled for four minutes) bead. November 14, 1905, a pink and a yellow bead are found in the stool with potato skin attached, but no potato substance.

10. *Boiled Potato and Mutton Fat.*—December 14, 1905, Dr. S. takes a capsule with two yellow potato beads (one in gauze) and two mutton-fat beads (one in gauze). Eight hours later two beads are found in the stool, a yellow one without potato but with the skin, and a white one with still a little mutton fat left in the lumen of the bead. Twenty-four hours later the yellow bead with gauze containing only potato peel is found. Microscopically no starch. Forty-two hours later the mutton-fat gauze bead is found completely empty.

Remarks.—These experiments in healthy people show that both catgut and fish bones are digested in the stomach, whereas boiled or raw meat (beef), raw chicken skin, and raw as well as boiled potatoes do not disappear altogether in this organ. The muscles show a swelling and loosening of the fibres. Raw muscle fibre and chicken skin disappear in the intestines; tendons, however, remain undigested. Raw potatoes show a varying condition, sometimes disappearing entirely, sometimes going through unchanged; boiled potato usually seems to be digested in the bowel, whereas the skin of potato (either raw or boiled) always reappears unchanged.

Fats with a very high melting point, as lard, stearic acid, wax, paraffine, are not absorbed in the intestine; suet and mutton fat are digested in the bowel.

Experiments made with mutton fat show that it remains unchanged in the stomach. We also tried to determine whether the disappearance of the mutton fat in the intesines was a purely chemical process or a mechanical one, produced by the epithelium of the intestine. For this purpose we experimented with mutton fat surrounded by gauze. It is evident that mechanical processes are excluded in this manner, whereas the chemical action remains. All the mutton fat in the beads enclosed in the gauze disappeared. This proves that chemical processes play the principal part in the absorption of mutton fat, which has a melting point of 50 degrees Celsius. Thymus gland and potato were subjected to the same experiment. Here also it was shown that digestion was not interfered with by the gauze envelope.

Pathological.—The behavior of the substances just enumerated in normal digestion being known, they can be employed for testing the digestion in disease.

A. *Testing the Gastric Functions.*—I. *Catgut.* First a few tests were made with catgut beads. It has been known for some time through the investigations of Ogata[3] and that indefatigable worker, Ad. Schmidt,[4] that connective tissue is not digested in the intestines, but in the stomach. Therefore, connective tissue fibres are found unchanged in the stool when the stomach functions are disturbed (achylia gastrica). Catgut consists principally of connective tissue and ought to behave like the latter. This fact induced Sahli[5] to employ the catgut in a new stomach test called the "desmoid test." He enclosed methylen blue in a rubber bag and tied it securely with catgut and then had the patient swallow it. As soon as the catgut has dissolved in the stomach the bag opens, methylen blue is absorbed and appears in the urine, giving it a blue color. If no gastric juice is present the rubber bag remains closed and the urine is not discolored. I have used catgut in a similar manner to test the functions of the stomach. Catgut beads are swallowed in a gelatin capsule and the stool is subsequently examined by means of the stool sieve until the beads reappear either with or without the catgut.

The following tests were made with catgut beads:

1. W. H. W., with pronounced hyperchlorhydria, takes a gelatin capsule with four catgut beads. Twenty-four hours later three beads were found in the stool. Forty-four hours later one bead. Catgut had disappeared from all.

2. Mrs. Anna F., with achylia gastrica and chronic enteritis, takes a gelatin capsule with four catgut beads. Ten hours later two beads were found, twenty hours later two more. The catgut remained attached and unchanged in all of them.

3. Wm. G., suffering from chronic myocarditis, cirrhosis of the liver and achylia gastrica, takes a gelatin capsule with four catgut beads. Thirty hours later three beads with catgut attached are found in the stool.

4. Mrs. Amelia K., with achylia gastrica, takes four catgut beads in a gelatin capsule. Thirty hours later four beads are found without catgut.

From these experiments we can draw the conclusion that gastric juice must be absent if the catgut is found unchanged in the beads. If it has, however, disappeared from the beads we cannot positively assert that gastric juice is present because case four shows that under certain conditions (with intact intestinal digestion) catgut may be digested even if achylia gastrica is present.

2. *Fish Bones.*—Since catgut therefore cannot be utilized as a positive indicator of the presence of gastric juice I employed fishbones for the same purpose.

Faber[6] was the first to call attention to the fact that in patients with achylia gastrica fish bones reappear in the stool. I therefore made various experiments with fishbones. First I was able to experimentally prove that fish bones placed in gastric juice in a test tube and kept at body temperature dissolve easily. Fish bones were also digested in the stomach of healthy persons as shown above. The question now was, whether fishbones could be digested in the intestine or not.

To decide this question I tied fish bones into the lumen of the beads and surrounded them with

a heavy coating of mutton fat. This I gave to persons in whom previously the test with plain fish bone had been positive. As the mutton fat is not changed in the stomach the fish bone cannot be attacked in this organ. In the small intestine the fat disappears and the fish bone is exposed to the

Fig. 1.—1. Catgut bead; 2. thymus bead; 3. fish bone bead; 4. potato bead; 5. meat bead; 6. muttonfat bead; 7. digestive test capsule.

action of the pancreas and intestinal secretion. If it, therefore, reappears intact in the stool, it shows shat fish bones are not acted upon in the intestine. My experiments with fish bones and mutton fat coating which were several times executed, always gave the same result, viz., a reappearance of the fish bones in the stool.

We can, therefore, conclude from a positive result of the fish bone test that gastric juice must be present. We are not allowed to conclude from a negative result that gastric secretion must be absent. It is evident that the fish bone requires a certain amount of time for digestion, and that if it leaves the stomach before this time, the fish bone will proceed through the intestinal tract unchanged.

This will be evident from later tests, and it really occurs off and on.

B. *Testing the Intestinal Functions.*—All substances enumerated in part one which are little changed or not at all in the stomach and are entirely digested in the bowel may be utilized in testing the intestinal functions.

Adolph Schmidt's[7] method introduced in the last few years of testing the intestinal functions is based upon the microscopical examination of the

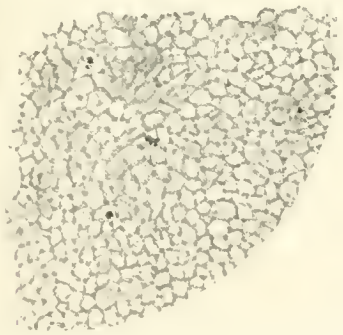

Fig. 2.—Potato skin (refound in the stool) under the microscope, after addition of Lugol's solution: very few starch granules and some erythrodextrin visible.

stool for muscular fibers or connective tissue, etc. after a test diet which has to be kept up for three days or longer. This diet consists of one and a-half liters of milk, two eggs, 100 gm. zwieback, 50 gm. butter, 125 gm. beef, 190 gm. potatoes and the gruel from 80 gm. of oatmeal daily. Normally after this diet there are no muscular fibers visible macroscopically, and microscopically only small fragments. An examination like this lasts several days and is rather tedious.

Instead of this we can just as well follow the changes of food substances that have been attached to beads and passed through the digestive tract. For albumen we can use raw meat, for starch potato (boiled two minutes), for fat digestion mutton fat. If the intestinal functions are good or normal, all these substances will disappear from the beads during their passage through the digestive tract; if there are, howver, disturbances, we can recognize them from the reappearance of food substances attached to the beads. In connection with the intestinal function the pancreatic function may be tested by a piece of raw thymus surrounded with gauze and with bead attached.

With intestinal and pancreatic function intact the thymus will entirely disappear; if the functions are not normal the thymus remains unchanged and the nuclei also. In disturbances of the stomach and intestinal functions, the pancreatic function being normal, a part of the gland will reappear, the nuclei, however, having entirely or nearly disappeared.

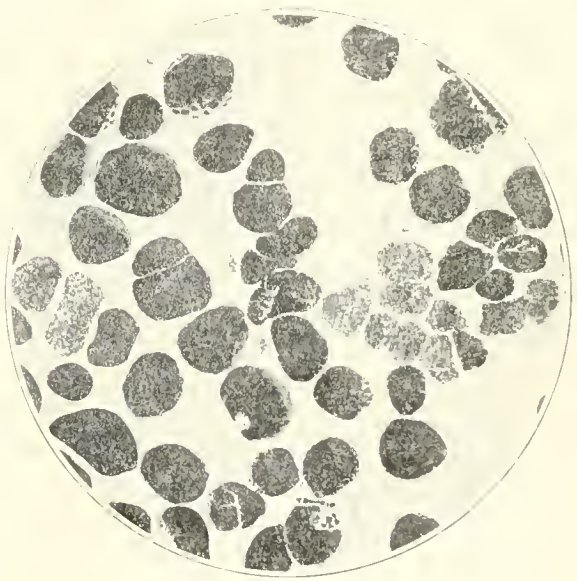

Fig. 3.—Potato substance (after passing of a potato bead through the digestive tract); microscopical view, after addition of Lugol's solution: many starch granules, almost unchanged; some are converted into erythrodextrin.

C. *Testing the Entire Process of Digestion (Stomach, Bowel, and Pancreas).*—In order to test the work of the entire digestive tract, it is best to give a gelatin capsule containing the following test substances attached to beads of different colors: (1) Catgut (white bead), (2) fish bone (large green bead), (3) raw beef (red bead), (4) potato with skin, boiled two minutes (yellow bead), (5) mutton fat (purple bead), (6) thymus gland surrounded by gauze (blue bead).

The different colors enable us to differentiate the various substances after they have passed through the digestive tract. Such a capsule with the six test substances might be called a "digestive test capsule."

I have added a drawing (Fig. 1) of one of these digestive test capsules as well as of each individual test bead in order to show the manner of attachment of the various food substances to the beads.

Method.—The patient is given a digestive test capsule shortly after a meal (best after breakfast

or dinner) and the subsequent stools are examined by means of my stool sieve, until all six beads have been recovered. These are then washed with a little cold water and then well inspected to see whether the substances are still attached or not. The gauze sack (surrounding the thymus) is cut open and examined for remnants of thymus. If any is present a microscopical examination after staining with methylen blue would be necessary in order to determine the presence or absence of nuclei. The time of the stool, the number and kind of beads found, must be noted.

The occurrence of the first beads marks the time taken to traverse the digestive tract and thus indicates the motor functions of the digestive apparatus.

Observations on This Method of Testing the Functions of the Digestive Apparatus.—I shall briefly summarize all the cases in which I have made the tests of the digestive function.

Case I.—October 25, 1905. Peter L., with achylia gastrica, takes a gelatin capsule containing two white (catgut) and two red (raw beef) beads. October 26, 1905. Four beads without catgut or meat are found in the stool. October 29. Patient takes two green (fish bone) beads and one blue (raw potato) bead. October 30, 8 A.M. Nineteen and a-half hours after taking the stool contains all three beads, fish bone and potato being attached. November 2. The same patient takes two white (catgut) beads and one blue (fish bone) bead and one brown stearic acid bead. November 3. White bead found without catgut. November 4. Blue bead with fish bone attached found.

Case II.—October 29, 1905. John P., suffering from dilatation of the stomach, absence of HCl, and cirrhosis of the liver, takes a capsule with two white (catgut) and one green (fish bone) bead. Forty hours later three beads in stool, containing both catgut and fish bone intact.

Case III.—November 11, 1905. Mr. B., with hyperchlorhydria and neurasthenia, takes a digestive test capsule. Forty hours later four beads, and 60 hours later two more are found. The potato bead contains only potato skin (Fig. 2) without any potato substance; the fish bone is attached to its bead; all other beads are empty. November 15. Stomach thread test. Mr. B. takes fish bone, catgut, and meat beads attached to a silk thread and enclosed in a capsule. Four and one-half hours later the thread is removed from the stomach, the meat is still present, catgut swollen but still attached, the fish bone is missing. November 13 Mr. B. swallows a thymus gland bead and a mutton fat bead attached to a silk thread and enclosed in a capsule. Six hours later the thread is removed. The mutton fat bead is unchanged, the thymus gland is also present, showing the nuclei well, microscopically.

Case IV.—November 24, 1905. J.C.R., with atony of stomach and hyperchlorhydria, takes a digestive test capsule. Thirty-six hours later three beads are found; fifty hours later the other three. They are all empty; of the potato only the skin remains. December 2. The same patient takes a bead with thymus surrounded by mutton fat, the whole enclosed with gauze and a bead with fish bone coated with mutton fat. December 3. Twenty-one and a-half hours later both beads are again found. Thymus is present in the gauze; nuclei being somewhat diminished; fish bone is also present; some fat in the lumen of both beads.

Case V.—November 15. Alfred S., with achylia gastrica and chronic enteritis, takes a digestive test capsule. November 17. Two beads are found, one pink one containing only potato skin, and a blue one containing thymus (not much changed). The potato skin shows no starch; only traces of erythrodextrin. The thymus gland contains only few nuclei, but the connective tissue is well preserved.

Case VI.—November 20, 1905. Samuel O., with chronic ulcer of the stomach, takes a digestive test capsule. Forty hours later five beads are found in the stool; catgut and meat are digested, fish bone present, thymus present, but few nuclei, potato substance present (Fig. 3); starch reaction positive.

Case VII.—November 20. Morris L., with typhoid fever, in the stage of defervescence, takes a digestive test capsule. Twenty-seven hours later five beads are found in the stool. Catgut and meat are digested; potato undigested, thymus undigested, nuclei nearly absent, fish bone still attached. The same patient with normal temperature and being convalescent, takes another test capsule on December 1. Fourteen hours later four beads are found in the stool. Thirty-eight hours later one bead, sixty-two hours later another. Everything has disappeared, only the fish bone is still present.

Case VIII.—December 1 1905. A. G. with severe ulcerated colitis and hemorrhages, takes a digestive test capsule. Twenty-six hours later four beads are found in the stool, fifty hours later two beads; everything has disappeared but the fish bone.

Case IX.—November 21, 1905. H. C., with cancer of the transverse colon, takes a digestive test capsule. Thirty-six hours later two beads are found, fifty hours later again two, also after ninety-four hours. All the beads were empty; only the potato skin is attached to the one, but no potato pulp.

Case X.—December 12, 1905. Dr. F., with alcoholic gastroenteritis, cirrhosis of the liver, and diabetes mellitus, takes a digestive test capsule. Thirteen hours later three beads are found in the stool, fish bone, catgut, and meat with all the substances intact. Nineteen hours later the mutton fat bead appears, the fat occupying the entire lumen of the bead. Twenty-three hours later the thymus gland bead makes its appearance also unchanged; nuclei are plainly visible and do not seem to be diminished. December 16, 1905. Dr. F. again takes a digestive test capsule. Six hours later three beads in the stool; thirteen hours later another bead, nineteen hours later another one. In all five beads were found; they all carried the test substance and the thymus was found in the gauze with nuclei unchanged.

Epicrisis.—From the cases just described we can see that this method gives us a deep insight into the functions of the digestive tract. It is, for instance, of interest to observe that in spite of cancer of the digestive apparatus, occasionally, the digestive functions are perfectly normal (Case 9). In such cases the seat of disease is circumscribed and the digestive apparatus is not much damaged.

The digestive functions were most disturbed in Dr. F. (Case 10), where all the tests were negative. He probably had a severe lesion of the pancreas and this supposition was corroborated by the presence of diabetes and the nondigestion of the nuclei of the thymus gland.

In achylia gastrica the catgut is sometimes digested, sometimes it is not, whereas the fish bonse were always undigested. Thymus gland also remained, although the nuclei were always more or less changed.

In hyperchlorhydria no impairment of the digestive functions was noticeable.

The number of cases examined is too small to permit of generalizations, still it shows that the method as such is serviceable and worthy of further investigation.

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WHAT IS THE CLIMACTERIUM?

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According to Fehling the evidences which accompany a normal menopause are congestions, flushes, and sweatings, which have a tendency to disappear after one-half to one year. They sometimes last for years. There may be superimposed palpitation, dizziness, nervous symptoms of the stomach and intestines, a feeling of flatulence and distention, neuralgias, especially costal, sleeplessness, an anxious feeling, mental unrest, and irritability. Depression and melancholia are seldom found. The symptoms are worse in women formerly neurasthenic or hysterical. The symptoms are worse if the senile uterine changes are marked and sudden. They are less if the senile uterine changes come on slowly. Physical disease is seldom noted.

It is important to mention the fact that menopause is generally considered an essential evidence of the climacterium. This is not so. One of the important complications of the climacterium are great uterine bleedings, regular or irregular in their occurrence. With these bleedings the essential constitutional and nervous symptoms of the climacterium may be present in full force. Because of the presence of the bleedings, the fact that the climacteric symptoms may be present is generally overlooked, so strong is the idea that only a cessation of the menstruation is proof of the onset of the climacterium

According to Martin, the symptoms, after castration, are rushes of blood to the head, combined with a feeling of anxiety. There is often added thereto palpitation, dizziness, tinnitus, and sweating. These symptoms occur in various combinations, often repeated several times a day. Continuation of these conditions leads to feelings of weakness, to headaches, sleeplessness, etc. The symptoms usually improve after two or three years, but sometimes continue for five or six years.

It is generally considered that after hysterectomy the annoying symptoms of the climacterium are absent if the ovaries be left behind. This view is an erroneous one. The ovaries gradually atrophy and their function disappears at various periods, generally at the end of the second or third year. Then the climacteric annoyances come on, as a rule in slighter degree than is the case when the ovaries are removed together with the uterus. The action of the ovaries in preparing the uterus for pregnancy is certainly their main purpse. When the uterus is removed and menstruation ceases, the ovaries, in the course of time (for what exact reason we cannot determine), disappear. In these patients, after the lapse of time, the usual climacteric symptoms appear, but in slighter degree. Here we have evidences of the results of ovarian insufficiency.

According to Baruch and others the annoyances after castration are most marked in nervous and hysterical women. They find it hard to distinguish between their "nervous symptoms" and those which are due to the menopause. That is the difficult question. Are the severe changes at the menopause due to absence of ovarin and the consequent metabolic changes in predisposed individuals only, or are they due entirely to the menopause or the climacterium itself without regard to predisposition? It can certainly be said that we often enough see severe climacteric annoyances in women who before this stage showed absolutely no characteristics which could be considered nervous. On the other hand we see quite often no bad results at all after castration in patients who before operation were certainly nervous, nervous even years before the condition for which they were operated upon existed. In fact we often see such patients very much improved after operation. These various factors speak for the specific causation of climacteric symptoms.

The symptoms caused at the climacterium, artificial or natural, are certainly due to diminution or absence of function on the part of the ovary, as is also proved by the good results obtained by treatment with ovarin.

Mainzer, in the clinic of Landau, found that disturbances in the vasomotor system, resulting after castration, disappear upon the administration of ovarin, that disturbances after the natural climacterium are benefited, that the results in primary or secondary amenorrhea are satisfactory, but that no effect is exerted upon general hysteria.

In the light of our present knowledge we know that, aside from furnishing the ovum, the ovary possesses an internal secretion. This internal secretion produces various normal manifestations in the pelvic region and in the body generally. We know that the ovary is essential to a proper preservation of the female genitalia, most particularly is it essential to a proper preparation of these structures for pregnancy. We believe likewise that the ovaries are related to pathological conditions associated with pregnancy, such as hydatid mole and chorioepithelioma. We know further that the ovaries stand in relation to those sclerotic and atrophic changes in the uterus which produce climacteric bleedings. Aside from this, preservation of the ovaries has a bearing on other physical and mental conditions of the patient as can be recognized by the changes which occur when the ovaries gradually atrophy at the menopause, or by the changes occurring when the ovaries are removed by operation.

That the ovarian secretion is not of essential importance is evidenced by the fact that a goodly proportion of women go through the menopause without noticeable annoyances, and that

in a fair proportion of the operative cases there is little or no annoyance at all. The same variations in degree, in intensity, and in the duration of symptoms as are observed in the natural climacterium are to be likewise observed after surgical castration. The disturbances after operation are at first mainly of a vasomotor nature and are accompanied by psychic unrest. Why do these disturbances occur? Is it because the ovarian secretion furnishes something which is actively necessary, or is it because the ovarian secretion nullifies some other substance produced in the body? During the natural climacterium the annoying symptoms are generally worse in those patients in whom atrophic changes in the uterus occur rapidly while they are less annoying if these changes go on slowly. The patients who have irregular and profuse bleedings often, but not always, suffer less from the annoying constitutional and nervous symptoms. It seems as if with the loss of blood there is expelled from the body a toxic substance which, when retained, produces the phenomena of which we are speaking. After the menopause the system gradually becomes accustomed to this condition of retention, or else the retained products are no longer produced and the annoying evidences gradually disappear. After surgical castration, even in the severe cases, the body becomes accustomed to the absence of the ovarian secretion, yet many cases have few or no symptoms at all, which fact shows that the same variations are observed in the menopause after castration as are noted in the menopause occurring along normal lines.

Glaevecke says "castration develops an artificial climacterium, which in all points resembles the natural, and the female enters through castration prematurely into the climacteric age. Castration cuts deeper into the general organism of the female than does total extirpation, and we must rate the mutilating effect of the first higher than the latter. Very noticeable are the changes in the mental sphere, where we generally see a depression of temperament, which often increases to marked melancholia and in these cases goes on to a real psychosis."

Pfister claims that "the so-called mutilation (of castration) should not be rated so high, in that the influence which the female ovary exerts on the female organism is much overrated."

Alterthum says the complete removal of the ovaries "does not at all produce the injurious results upon the mental and physical condition of the female as has generally been accepted."

Abel says that "after removal of the uterus, the ovaries enter into a more or less rapid atrophy which causes, already before the age limit of the natural climacterium, a complete disappearance of ovarian function. It is certain that after removal of the ovaries we see *at once* all the physiological accompaniments and anatomical consequences of the climacterium developing in a relatively short time, more immediately and sharper than they generally do at the natural age limit. Not so after the removal of the uterus. Here the transition is much more natural and milder."

Leaving out of consideration the varying and diametrically opposed views as to the value of preservation of the ovaries in operations which render pregnancy no longer possible, let us consider the symptoms which occur when the ovaries gradually atrophy or are suddenly removed.

The symptoms which occur in either of these instances are mainly the following: (1) Flushes with or without reddening of the skin, frequently followed by a sensation of cold and sweating; (2) palpitation of the heart, (3) dizziness, (4) headaches, (5) sleeplessness, (6) disturbances of digestion, (7) irritability of temper, (8) tendency to either mental depression or excitement, (9) various "nervous" manifestations, especially psychical unrest, (10) psychic disturbances. A comparison of all these symptoms with those which are known as "hysterical symptoms" or as "neurasthenic symptoms," and with the symptoms of aberrant Basedow's disease, shows a marked resemblance more than sufficient to prove the frequent possibility of error and the need of an exact differential diagnosis, in cases about the climacteric age especially.

In the study of the symptoms of the climacterium either natural or artificial, I have long been accustomed to consider these cases as instances of what I have termed "relative Basedow's disease," because the symptoms resembled to a considerable degree the symptoms of Basedow's disease. The more important reason was the fact that I considered the symptoms in climacteric cases to be due to hyperthyroidism. Since Basedow's disease was considered to be due to hypersecretion of the thyroid, the term "relative Basedow's disease" seemed an apt one.

For instance, Osler considered the typical symptoms of Basedow's disease to be tachycardia, exophthalmos, goitre, and tremor, "which is of great importance in the diagnoses of early cases." Among the other symptoms mentioned by Osler, are anemia, emaciation, slight fever, vomiting, diarrhœa, pruritus, irritability of temper, change in disposition, great mental depression, weakness of muscles, especially a "giving way" of the legs. According to Osler, thyroid extract given in excess produces symptoms not unlike those of Basedow's disease, viz.: tachycardia, tremor, headache, sweating, disturbances of menstruation, etc. The use of thyroid extract, he says, usually aggravates the symptoms of exophthalmic goitre. According to Gideon Welles, thyroid administered in large amounts produces the following symptoms: Palpitation of the heart, headache, nausea, vomiting (if the dose is excessive), excitability irritability, sleeplessness, diarrhœa often. Moebius says that "Basedow's disease is an affection of the body through morbid activity of the thyroid gland."

The following theories, among others, are mentioned by MacCallum as possible explanations of Basedow's disease:

(1) A general neurosis. Constant changes in the thyroid, however, cannot be explained on this basis.

(2) Moebius' theory of hyperthyroidization. However, not *all* symptoms can be caused by injecting thyroid extract into animals. Histologically we cannot say that the gland is secreting actively. Results of operation are not uniformly good. A combination of exophthalmic goitre with myxedema speaks against the exclusive rôle of the thyroid.

(3) Lesions of the sympathetic; this explains only haltingly a few of the symptoms.

(4) Parathyroid inactivity, or insufficiency. Disturbance of the thyroid secretion causes myxedema; disturbance of the parathyroid causes exophthalmic symptoms. This might explain combinations of these conditions. This latter theory seems to offer some promise.

On the other hand it is the opinion of Thomson that intestinal intoxication is the probable cause

of this disease. In his opinion the points which disprove that the thyroid is the cause are:

(1) Simple goitres cause no symptoms.

(2) Graves' disease often occurs without goitre.

(3) The severity of the toxemia in Graves' disease bears no relation to the degree of thyroid hyperthrophy.

(4) Even though myxedema and Graves' disease do form an absolute contrast, yet we have no other known example of specific disease due to hypersecretion on the part of any gland.

(5) The administration of thyroid causes giddiness, cardiac palpitation, and moderate and temporary tachycardia, but not the important and characteristic symptoms of Graves' disease.

(6) The frequency in women. He explains this "by the proneness of women to gastrointestinal derangement in connection with menstruation, pregnancy, and the menopause."

(7) Treatment based on the theory of gastrointestinal origin of the disease is so superior that it confirms the idea that diet and digestion, and disorders connected therewith, are the chief factors in the etiology.

"Whether, therefore, the constitutional symptoms of Graves' disease be due to excess of thyroid secretion or to atrophy of the parathyroids (with deficiency of their secretion) or to a toxemia of gastrointestinal origin, the empirical fact remains that resection of one-half or more of the hypertrophied gland substance, has been followed in numerous instances, on the testimony of competent observers, by amelioration of the constitutional symptoms, amounting, it is claimed, to a supposed cure of the disease itself in the majority of those operated upon, and in other cases to undoubted improvement, with comparatively small percentage of failures."

Thomson explains this by the fact that the thyroid hyperthrophy, being secondary to a gastrointestinal toxemia, is an injurious added factor, just as is an enlarged spleen in other diseases. He claims that good results are obtained by operation in cases which he does not consider extremely severe; that many cases are considered cured which have symptoms remaining which would, in his opinion, only justify the claim of improvement and not of cure. He further asserts that the cases are not observed long enough, since a temporary spontaneous improvement occurs often enough in many cases. He considers that surgeons find the very severe cases prohibitory to operation.

He believes that removal of the thyroid causes myxedema, but that the removal of the parathyroids causes an acute intoxication with nervous symptoms. "The parathyroids neutralize a virulent poison which reaches the nervous system through the blood. This poison is probably of food origin. The muscular tremor and the weakness are rather due to deficiency of parathyroids than to too much. The thyroid is an organ which, like the spleen, seems to be very susceptible to toxic agents acting upon it through the circulation. Even in dogs, if they are old, thyroidectomy is neither fatal nor accompanied by the usual symptoms." Kocher points out that post-operative myxedema scarcely occurs at all in elderly people.

It is certainly remarkable that the great majority of cases of well-defined or aberrant Basedow's disease are observed in women. To say that an affection of the ovaries is in a degree responsible for the genuine cases, would be going rather far. The least that we can say, however, is that women are extremely prone to morbus Basedowi, probably so because they possess ovaries.

Even if an affection of the parathyroids is an essential element in typical Basedow's disease, even if an enlarged thyroid is not the cause of the exophthalmos or of the tachycardia, and even if the enlargement of the thyroid is a secondary manifestation, we are not in a position to say that an associated hypersecretion of the thyroid is not responsible for many of the symptoms generally considered as due solely to the supposed thyroid overproduction of Graves' disease, or for cases of Basedow's disease without exophthalmos and without goitre and without tachycardia. If the ovarian secretion stands in relation to thyroid activity, as is evident from the symptoms occurring in the climacterium and after castration, there is no reason why disturbances of function on the part of the ovaries may not be responsible for other forms of "relative hyperthyroidsism," and "relative Basedow's."

Thomson explains the frequency of Graves' disease in women "by the proneness of women to gastrointestinal derangement in connection with menstruation and pregnancy and menopause." In our opinion it is just at these three stages that ovarian inactivity or insufficiency and ovarian relation to the thyroid would produce the annoying combinations of nervous symptoms, easily mistaken for hysteria or neurasthenia and resembling or actually producing aberrant forms of Basedow's disease. Even if Thomson is correct in his statement we must still reason out what makes women prone to gastrointestinal disturbances in connection with menstruation, pregnancy, and menopause. May not this proneness to gastrointestinal disturbance be the result of the metabolic changes which occur at menstruation, pregnancy and menopause, and if they are the result of these metabolic changes, then what more rational idea have we than that ovarian and thyroid interrelation, naturally of a fluctuating rather than of a stable character, produces not alone annoying and nervous symptoms but innumerable variations in the severity of the symptoms.

According to Welles the close relation between the thyroid and the reproductive functions is beyond question. The points in favor of these are the following:

(1) The greater size of the thyroid in females.

(2) The enlargement of the thyroid in menstruation and pregnancy.

(3) The tendency to develop goiter during pregnancy.

(4) Early atrophy of the thyroid after the menopause.

(5) Loss of sexual appetite in many of the thyroid diseases.

(6) Eighty per cent. of all goiters, eighty per cent. of myxedemas, and most cases of Graves' disease occur in the female.

(7) Halsted observed that bitches, who had lost part of their thyroids, when impregnated, showed evidences of athyreosis as the time of parturition approached, which disappeared soon after the litter was born.

(8) All of the pups of these litters had thyroids many times the normal size.

(9) Even in dogs if they are old, thyroidectomy is neither fatal nor accompanied by the usual symptoms. Kocher points out that postoperative myxedema scarcely occurs at all in elderly people.

The ovarian secretion has the effect of producing a congestion in the genital region. Thyroid secretion has a tendency to produce anemia

in this region, and, even without absolute proof of this fact, I have considered these two secretions to be antagonistic in their action. When the ovaries are removed at operation the vasomotor and other disturbance which come on resemble more the symptoms of hyperthyroidism, than any other condition of which we have any knowledge. In women who have not been operated on, in women at the menopause or during the climacterium, and even in women who are not near the menopause age, we frequently see annoyances of the same nature, often combined with scanty menstruation, and with the other evidences of ovarian insufficiency. Are we not justified in considering the relative oversecretion of the thyroid in them too as the pathological basis?

Perhaps in the climacterium the annoying nervous symptoms are less if the thyroid atrophies coincidentally with the ovaries, and perhaps the symptoms are more annoying if the thyroid atrophies more slowly than the ovaries. Perhaps in the climacterium the excitable cases are those with too much thyroid and the melancholy ones with too little.

Perhaps after operation the thyroid atrophies on absence of the ovaries, quickly in some cases and slowly in others, as probably happens at the normal climacterium. The patients grow stout probably because the ovaries and later the thyroid are gone, and oxygen exchange is diminished.

The probabilities are that ovarian insufficiency means relative hyperthyroidism. At any rate, even if the theory of relative hyperthyroidism is not correct, the fact that these conditions are due to ovarian insufficiency is certainly not to be questioned. The least that we can say is that the symptoms of diminished oa absent ovarian secretion and the symptoms of hyperthyroidism are sufficiently alike to express the suggestion that they are one and the same.

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PNEUMONIA.*

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Vital statistics reveal the fact that the prevalence and fatality of pneumonia are markedly on the increase. It is responsible for more deaths than any other disease. Pneumonia causes 8 per cent. of all deaths, 150,000 persons, or one every five minutes, falling annually as victims to this disease in the United States alone. Not only is the mortality of pneumonia appalling, but it is steadily increasing. While the death rate from tuberculosis, in the last two decades, has decreased 40 per cent., that of pneumonia has increased 5 per cent. Welles' latest compilation of 465,400 cases with 94,826 deaths, gives a mortality of 20.4 per cent.

Since the discovery of the cause of most of the infectious diseases, particularly smallpox, diphtheria, and tuberculosis, the decrease in mortality from these respective maladies is at once apparent and gratifying. But notwithstanding the fact that the cause of pneumonia has been established, both by laboratory research, and post-mortem findings, to be of bacterial origin, yet our latest and best methods of treatment are as unavailing and nugatory in curtailing the ravages of this disease as those which the ancient fathers of medicine taught half a century ago, when they only knew it to be a pneumonitis. In view of these facts pneumonia becomes at once the most important medical problem of the day, and furnishes food for thought for pathologist and clinician alike.

What, then, is pneumonia? How is it produced. If by the pneumococcus and other pathogenic organisms, how are they so disseminated and their virulency so increased that the disease has become so prevalent and so fatal? These are fundamental and pertinent questions that should seriously concern every anxious inquirer after the truth who wishes to see a more rational system of treatment of pneumonia.

Anatomically, pneumonia is divided into five groups, but for clinical purposes we need consider but three: fibrinous, interstitial, and bronchopneumonia.

Interstitial pneumonia, resulting usually from other inflammatory processes, is chronic in form, and will not be considered now.

The limit of this paper will only allow us to say a word in passing, in regard to bronchopneumonia, and it is this: The morbid anatomy of this disease differs from that of the croupous form, in that the circumscribed inflammatory process extends not only down the small bronchi to the alveoli, but also penetrates the deeper wall of the tubes, passing through the whole fibrous structure, and attacks the connective tissues. This interstitial inflammation of the walls of the smaller tubes, as Delafield well says, is the distinguishing characteristic between bronchopneumonia and the croupous form, the latter being a diffused exudation of inflammatory products into the alveoli and surrounding tissue without any evident change in the surrounding structure after resolution has taken place.

The difference between these pathological lesions should be carefully kept in mind in our diagnosis; for it is the difference in the nature and cause of these two inflammatory processes upon which rest the course and conduct of each disease.

Acute fibrinous pneumonia is primary, while bronchopneumonia is nearly always secondary, following the infectious diseases as a sequel, being a reinfection by the streptococci and staphylococci and not caused by the morbific agent of measles, whooping-cough, tuberculosis, or other infectious disease. In a late epidemic of bronchopneumonia, following measles, Craig demonstrated streptococci in the blood and sputum of 90 per cent. of the cases, with over 80 per cent. of mortality. Bronchopneumonia, therefore, seldom, if ever results from "catching cold," but is caused by the invasion of the respiratory tract by streptococci and staphylococci, which infiltrate the structures, causing liquefaction and destruction of the tissues, and resulting in toxemia in the diseases of childhood, and mixed infection in tuberculosis. There is also a primary form of pneumococcic origin.

Hale states that in secondary bronchopneumonia the pneumooccci are found in 75 per cent. of cases. Aufrecht says that the streptococcus pyogenes is the organism most frequently found in bronchopneumonia. In a late epidemic of the disease, following measles, among soldiers of the army, Craig found that 84 per cent. of the cases were due to secondary streptococcic infection, and of these 90 per cent proved fatal.

Next in frequency, and with greater fatality, is the bronchopneumonia following tuberculous infection. In this class of cases it is not the

* Read before the Medical Society of the State of North Carolina, 1905.

tubercle bacillus alone that does the great harm, but it is its conjoint action with the streptococcus and staphylococcus which so frequently kills the patient. It is the staphylococcus which causes the breaking down and liquefaction of the tissues; while the streptococcus is responsible for the hectic flush, nightsweats, and emaciation; it is from mixed infection, this septic pneumonia, that we have such frightful mortality.

Now from what has been said, what are the practical deductions? They can be summed up in one word—prophylaxis. And here let me insist that early diagnosis is of supreme importance. Watch your patients who are suffering from measles and whooping-cough. I know we are prone to visit our patients too infrequently in mild cases of measles and whooping-cough. But it is in these mild cases that the great danger many times lies; there is a reinfection grafted on the old, and we have a severe bronchopneumonia that might have been averted if we had early recognized the conditions.

So in tuberculosis, if the diagnosis is made sufficiently early, while it is yet tuberculosis, before there occur the characteristic lesions in the lungs, of softening and breaking down of the tissues, we can then adopt measures of prevention and cure with a greater degree of hope. But alas! This is neglected too long by both the physician and the patient, until we have pneumonia from mixed infection and the patient is hopelessly doomed.

Fibrinous pneumonia, as we know, is an acute infectious, systemic disease, with characteristic local lesions of the lungs. It is caused by a microorganism, the pneumococcus, which enters the system through the respiratory tract and blood current and produces a general disease with local manifestations in the lungs.

The route and location of pneumococci are of both pathological and practical importance. The latest discoveries in the histogenesis of the disease seem to warrant the fact that the germ enters the lungs through the lymphatic system and the blood current, passing through the bronchial branches of the vessels, by which all nutrition is furnished to the lungs, and not through the pulmonary branches. Here in a twig of a capillary blood-vessel, the pneumococcus finds a lodgment, and by its presence sets up an irritation which in turn produces hyperemia and stasis in the vessel. The walls are dilated and thinned; then occurs the first stage of engorgement. Next we have an emigration through the walls of the blood-vessels of the leucocytes with an exudation of the blood plasma and diapedesis of red blood cells into the alveoli and connective tissue. By the union of fibrinogen and paraglobulin caused by an unknown ferment, possibly the protoplasm from the pneumococci coagulation takes place and the red cells are entangled in the meshes of the fibrin. The leucocytes are found in abundance. The alveoli are now completely filled with fibrin, red blood cells, leucocytes, and granular epithelium; the stage of red hepatization, a complete consolidation of a portion of the lung is reached.

What has caused all these pathological conditions which are manifested by a sudden chill, fever, dyspnea, lowered arterial tension, and rust-colored sputum? The system here seems to be laboring under a supreme toxemia. The symptoms at this stage—just before the crisis—are out of all proportion in severity, to the gross anatomical lesions found in the lungs. But, last week I visited a patient with all these frank symptoms without the slightest signs on physical examination of the chest.

Death is the direct effect of pneumococcal activity and is not caused by mechanical obstruction, as it was thought to be under the old theory of simple phlogosis or inflammation. This fact I desire to emphasize, for it contradicts a theory which has long been held in regard to treatment, which is fallacious and dangerous.

Post-mortem findings have revealed the pneumococci in abundance, both in the blood and the coagulated exudate in the lungs. Rosenow, in 175 cases of lobar pneumonia, demonstrated pneumococci in the blood of 160 patients or 91 per cent. But in no case could he demonstrate pneumococci in the leucocytes. Leucocytosis was greatly increased in all these cases, and he was able to show a close relationship between leucocytosis and blood invasion of pneumococci. Frankel, Aufrecht, and others have demonstrated these facts over and over again, which would seem to show that the pneumococcus finds a lodgment in the pulmonary tissues, where it excites the interstitial irritation which results in an exudation of blood plasma, out of which the virulent germ elects some entity or component part, with which it unites and produces a pneumotoxin, which, being absorbed, is the prime essential virulent factor in the causation of every case of croupous pneumonia.

Acute pneumonia being a type of a toxic disease, the most important question to consider in treatment is the value of serum therapy. As in diphtheria—its only true analogue for which we have discovered a genuine antitoxin, so in pneumonia, we shall, in the near future, perfect a true antipneumotoxin. The results of late experiments along this line are indeed encouraging. Sailer's late reports from the Philadelphia Hospital, would seem to establish the fact that the treatment of pneumonia with antipneumococcic serum had passed the experimental stage, his recoveries amounting to 90 per cent. of cases treated.

The clinical type of pneumonia is varied and various, and depends entirely on the virulency of the germ and the amount of absorption of its toxin. Let us glance at a clinical picture of the crisis in this disease: You see your patient on the sixth day, he is indeed a sick man; has the same exudate in the lung as on the day previous; is still suffering from high fever, difficult breathing, low arterial tension; in fact, from supreme toxemia. You return the next day; how great the change! The patient is a well man; the fever is gone; pulse normal or nearly so; oppression in chest gone; you examine the chest, and the exudate is still there, but there is no dyspnea; he is relieved, but the exudate and consolidation have not changed. The change in the symptoms is very evident, but there is no change in the lungs. Then to what is this great change due when the crisis has been reached? Nature in her infinite resources has been guarding the patient all along these six eventful days. In her conservative course she has furnished an increased number of leucocytes which act as defenders against the bacteria in the blood, hence the increased leucocytosis in every case that recovers. Here the lowered arterial tension is favoring this natural condition.

As we have shown, the greater the leucocytosis, the fewer pneumococci are found in the blood and sputum; but in no instance have pneumococci been found in a leucocyte. At the same time the organism from the inception of the case has been manufcaturing an antitoxin which is anti-

dotal to the toxin produced by the pneumococci, whose efficiency is proved by the benign crisis. Here the system is not now laboring under a mechanical obstruction in the lungs, but from a supreme toxemia which is about to overwhelm the vital energies of the body by paralyzing the nerve centers of the heart. No, the patient does not died for want of breathing space in the lungs, but from paralysis of the vasomotor centers; in other words, dies from heart failure. If these views are correct, the treatment is indeed simple. And, as Loomis, Delafield, and Osler, the greatest clinicians of the world, have well said, as regards drugs, our treatment amounts to *nil.*

As pneumonia is a self-limited disease, the indications are (1) to support the vital powers; (2) to make the patient comfortable; (3) to control the excessively high fever; (4) to avoid depressant medicines; (5) to stimulate the heart; and (6) to neutralize the poison.

In the first place the patient should be placed upon the best possible hygienic dietetic regimen. He should be placed in a room where there is an abundance of fresh air with regulation of heat at 72°. The diet is all-important, and should consist chiefly of milk and eggs, with animal broths, avoiding the carbohydrates for fear of deranging the functions of the alimentary canal. The food should be given systematically under the physician's special instructions, as the case requires.

To relieve the pain of pleurisy and the shock which always, in more or less pronounced degree, accompanies the initial symptoms of the first stage of congestion, nothing is equal to opium in some form. Morphine and atropine hypodermically will give greater relief than any other remedy, with counterirritation of mustard plasters. Discard poultices as useless and inconvenient; cough mixtures can avail nothing but disturb the stomach. Avoid by all means the heart depressants.

Flint, in the sixties, gave the death blow to venesection; and under the present light of recent discoveries aconite and veratrum viride have no place in the therapy of pneumonia, except perhaps in the first few hours of the disease, when the physician is seldom called. All close observers freely admit that the arterial tension is invariably lowered after the first twenty-four hours. The use, then, of aconite and veratrum can only add to the burden of the heart, already laboring in consequence of the overwhelming toxemia which is paralyzing its nerve centers on the one hand, and on the other producing stasis on the venous side and lack of blood on the arterial side.

The coal tar derivatives in the treatment of high fever are to be mentioned only to be condemned. Moderate fever of 102° is a benign symptom, and should give us no concern whatever; it rather shows that the system is reacting favorably to the poison, and that the conservative powers of leucocytosis and the elaboration of an antitoxin are equal to the task of nutralizing the bacterial posion in the system. Excessive fever should, however, be controlled by hydrotherapeutic measures; the icebag to the chest or cold water by the sponge bath will usually reduce the temperature; if not, resort should be had to wrapping the patient in the cold pack; but the cold plunge is to be deprecated in most instances as unwise. Give the patient plenty of cold water to drink all the time. The next and most important question to that of food is the selection and regulation of the proper heart stimulant which is to tide the patient over the crisis. My experience is, and it is amply corroborated, that alcohol is the most potent and reliable remedy for this emergency. Its judicious use, varying according to the indications in each indvidual case, will accomplish more good than any other remedy during the second stage of hepatization, for it acts both as a food and arterial stimulant. Strychnine, also a nerve stimulant, is highly efficacious and should be used when the flagging energies of the nervous system demand it. It is often alternated with alcohol with perceptible benefit. Caffeine and camphor may both be used in asthenic cases. With quinine and digitalis in large doses as specifics I have had no experience. Some authorities recommend them highly.

We endeavor to counteract the poison by elimination, dilution, and specific medication. At the beginning of every case the alimentary canal should be thoroughly cleansed. Calomel and salts are the most efficient remedies for this purpose. Free catharsis should be kept up until nature herself comes to the relief by instituting the same process, the elimination of poisonous by-product by diarrhea. Diaphoresis should be encouraged by the timely administration of Dover's powders and potassium salts, especially the nitrate, which acts also by diluting the small blood vessels, and thereby equalizing the circulation.

Nitroglycerin is useful for the same purpose in the congestive stage. It must be given in doses of 1-100 to 1-50 grain, hypodermically, frequently repeated as it is quickly eliminated.

A great deal can be accomplished in mitigation of the disease by diluting the poison through the blood. For this purpose nothing acts so well and so quickly as the physiological salt solution, given in enema or by hypodermoclysis. Given freely it strengthens the heart and acts as a diuretic, restoring, possibly, to the circulation the chlorides upon which the equilibrium of metabolism depends.

To the specific medication in the form of an antitoxic serum we shall look with confidence in the near future, and shall see our fondest hopes realized in the perfection of a safe and efficient antitoxin for the cure of pneumonia In conclusion:

(1) Pneumonia is increasing in prevalence and fatality.

(2) The treatment is as unavailing as it was fifty years ago, because until lately the cause was unknown, and the symptoms consequently were misinterpreted, and because our treatment has been empirical and unscientific.

(3) In view of all these facts it would seem that the keynote to the whole situation can be summed up in a few words:

Prophylaxis: *Generous Support of the Vital Energies.*—If measures of prevention were more generally taught and adopted, the prevalence of pneumonia could be greatly reduced in a short while. The profession should know and the people must be taught how to prevent pneumonia. They must be informed that it is infectious; that it can be communicated from one person to another; that it is *preventable.* And how? Simply by taking care of the sputum of pneumonia patients. Instruct them not to expectorate indiscriminately on the floor or bedding. Let them spit in a cuspidor, or upon cloth, which should be immediately burned. The mouth and teeth should be thoroughly and often cleansed with an antiseptic wash. In fact all the excretions should be as seduously disinfected and

destroyed as in cases of typhoid fever. And after recovery or death in every case of pneumonia, the room should be as thoroughly disinfected by fumigations with formaldehyde as in cases of all other contagious diseases.

THE MODERN CONCEPTION OF MATTER.*

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From the earliest times the study of nature has absorbed much of the thought of men. The ancient Greek philosophers sought to explain the physical phenomena which they observed first in fantastic mythical fashion, later in a logical and scientific way. Through all the development of the race man has sought to know what matter is, the laws which govern its continued existence, its many forms and the countless changes through which it passes in its infinite variety of reactions. Many theories had been advanced as to the origin and the essence of matter and the manner of its combinations, but it was not until John Dalton propounded his atomic theory in 1803 that a valid foundation was laid for that magnificent structure of physical science, which, with its grand practical achievements, has become the pride and credit of the age.

Dalton advanced the idea that every simple or elementary substance is composed of extremely minute indivisible and separate particles of absolute uniformity of mass. Different elementary substances have atoms of different relative weights, he argued, because the elements combine with each other in definite weight proportions, and this can best be explained by the hypothesis that the elements combine with each other, atom by atom. Then it was found that in certain cases an atom of one substance could combine with either one or with two atoms of some other substance, necessitating the idea that atoms had definite numbers of bonds of affinity, and that perhaps they possessed certain geometrical shapes with different poles or salient angles of affinity.

These polar attractions were very fascinating to the chemists of the first part of the last century, and it was held that all chemical compounds were composed of a positive and a negative couple, the salts, for instance, being composed of an electrically positive basic radical and a negative acid radical. This dualistic theory had to be modified, however, when it was found that highly positive hydrogen atoms could be easily replaced in many organic compounds by such strongly negative atoms as those of chlorine and bromine.

Of late years the ionic theory has come to be held as explaining the combination of the atoms in many chemical reactions. Van't Hoff showed that substances in solution exert as great a pressure as they would if they existed in the gaseous condition and occupied the same volume at the same temperature; and Ostwald and others have shown that in this condition more or less of the molecules exist in a state of electrolytic disassociation, the liberated atoms and radicals, called ions, being free to form new chemical combinations.

In regard to the substance which constitutes the elements, it was the dream of the alchemists that all matter must have had a common origin and that one elementary substance could be converted into another, and although they failed in the effort to transmute the base metals into gold, those very efforts led them to acquire a vast amount of disconnected information which later became of great value.

Mendelejeff discovered, about fifty years ago, that there exists the most wonderful and precise relation between the atomic weights of the elements and their physical and chemical properties, the whole list of known elements being divisible into groups or families whose members differ from each other by constant increments of atomic weight and by steadily increasing or decreasing intensity in chemical and physical properties. Dulong and Petit found, too, that there is a constant ratio between the atomic weight and the specific heat of all the elements. Speculating upon these facts, Sir Norman Lockyer advanced the hypothesis that all the elements were perhaps but different condensation products of one primeval gas of high attenuation, that, originally existing in nebulous condition, had cooled down and at different stages of its condensation had separated out the elementary substances as we know them. Attractive as this guess may seem, little confirmatory evidence has been deduced.

Within the last half-dozen years the great progress made in the study of radiant matter has done much to modify our conceptions of the composition of matter and a review of this line of research will best indicate the present phase of the subject.

When an electric discharge from a static machine takes place through the air a zigzag spark is seen to pass between the terminals, over a distance of a few inches; but if the discharge take place in a tube of rarified air containing, as in Geissler's tubes, air at a pressure of about 1-1000 of an atmosphere, the spark will pass through a distance of five or six feet, appearing like a glow rather than a spark and having a purplish color, varying with the nature of the gas contained. Further, the discharge visibly passes between the anode and the cathode, no matter what their relative positions in the tube may be. In 1879 Sir William Crookes investigated the phenomena produced by electric discharges in much higher vacua, his tubes being exhausted until they contained but one-millionth of an atmosphere of gas. Under these conditions the discharge appears to be entirely independent of the anode and is seen to proceed from the cathode, or negative pole, alone. The rays fall with luminous effect upon the glass *directly opposite* the cathode, which for these experiments is usually a platinum disc within the vacuum tube connected rigidly to a wire passing through the glass. These are therefore called cathode rays. A greenish light is usually thus produced, without much heat and depending for its color upon the substance upon which the rays fall and not upon the gas in the tube.

When a magnet is brought near, the rays can be deflected from their course, proving them not to be waves of light, for light cannot be deflected by a magnet.

When two cathode discs are so placed beside each other in a Crookes' tube that the rays emitted from them should be parallel it is found on passing the electric current through them simultaneously that the rays diverge, indicating that the rays are diverged from each other by an electric field, as in the previous case the rays were diverged by a magnetic field. Further, if these rays are caused to fall upon the vanes of one side of a movable wheel placed within the tube the wheel revolves indicating that the rays consist of particles of matter shot off from the negative electrode and therefore negatively electrified. Indeed the bombardment by these particles is so intense that when the rays

*Read before the Yonkers Practitioners' Club.

emitted from a concave electrode are caused to focus upon a small strip of platinum foil placed within the tube the foil is quickly raised to the red heat, and may even be melted by the heat developed by the impact of these minute particles. So great is the energy produced by these almost incalculably small particles that it has been calculated that a pound of them would raise to the boiling point in a single second the waters of a lake a thousand acres in extent and seventeen feet deep.

In 1894 Roentgen discovered that when the cathode rays are concentrated upon a platinum mirror within the Crookes tube and reflected they pass through the glass wall of the tube in a highly changed condition. They are no longer deviable by a magnet and are not capable of being reflected, retracted, nor polarized as light rays are. They cause susceptible substances like calcium sulphide and barium platinocyanide to lumanesce strongly, have high penetrating power passing easily through glass, paper, wood, flesh, and even metals in thin layers. These rays start at the point of impact with the reflector within the tube and move in straight lines. They ionize or dissociate gases when passing through them, rendering them good electrical conductors, and they also strongly affect the photographic plate.

Since Roentgen rays produce luminescence, Becquerel in 1896 undertook to ascertain whether bodies known to be luminescent when exposed to sunlight (that is, giving out light without appreciable heat) would emit penetrating rays like the Roentgen rays. He found that uranium salts impress the photographic plate whether they have first been exposed to the sun or not, the activity being a property of the uranium itself.

Following up this work Mme. Curie in 1898 investigated the relative activity of the various salts of uranium in emitting these Becquerel rays and subsequently that of the various minerals containing uranium.

She used a delicate and specially constructed electroscope in these investigations, the substances under examination discharging the same through their power of ionizing or electrifying the air between the terminals. The more radioactive the substance, the shorter the time required for the discharge. More elaborate electrical apparatus capable of detecting quintillionths of a gramme was also employed in the quantitative determinations of radioactivity.

Mme. Curie found that while in the salts the activity was proportional to the percentage of uranium contained, in the ores the activity was very different. This led her to suppose that the ores must contain some active substance other than uranium, and far more active. From uraninite she separated by chemical means an active substance which she named polonium, and continuing she finally succeeded in separating another radioactive substance, one hundred thousand times as active as uranium, which she called radium. The atomic weight of radium has been determined at 225, placing it among the heaviest of the elements. Thorium and a new element, actinium, have also been found by Schmidt and by Debierne in 1898 to emit these same Becquerel rays. These rays, besides having high penetrating power, all affect the photographic plate, are more or less deviable by the magnet, produce luminescence, and ionize gases rendering them conducting. Radium, the most active of these, is the most wonderful, at present, of all the elements. It is self-luminous in the dark, apparently from the action of its own Becquerel rays upon itself, acting as a luminescent body. Placed near other bodies it renders them in turn radioactive for a time. It burns the skin and deeply affects the tissues when brought near; it has been successfully used in the treatment of cancer, lupus, etc.; it emits a gentle heat constantly, and in spite of a constant emanation of matter in the shape of electrons Mme. Curie estimates that each square centimeter would radiate only 1.2 milligrammes in a billion years.

While the number of particles of matter emitted from even a very small amount of radium salt must be reckoned in millions per second, still they are so inconceivably minute that the specimens which have been under observation now for several years have shown no perceptible loss in weight, though tested on balances capable of indicating a part in a million. Particles so small, to produce effects so great, must be shot out with a degree of energy tremendous in the extreme.

Perrin in 1895 and J. J. Thomson in 1897 conducted investigations which proved that the Crookes rays consist of material particles which they called electrons or corpuscles, charged with negative electricity, and Thomson succeeded in measuring the mass, the electric charge and the velocity of these particles. Each one is about 1-800 of the mass of an atom of hydrogen, heretofore believed to be the smallest thing, the simplest thing in nature, and as it were, the foundation of the universe. It would take two septillion, three hundred sextillion of these particles to weigh one gramme, and they travel at rates of speed, up to 70,000 miles a second or about two-fifths of the velocity of light.

From his investigations Thomson concludes that each electron carries the same charge of electricity as does an atom in a chemically conducting liquid. The same kind of electron is obtained from every kind of matter. Electric currents are always due to the passage of these minute electric charges, passing as they do through metals, producing the phenomena of metallic conduction, through solutions, dissociating the substances dissolved and carrying the products with them to be deposited at the electrodes, and through rarified gases with almost the velocity of light. Whenever electrons are suddenly started, stopped, or made to change their direction it disturbs the ether through which they have been quietly moving and gives rise to pulses or waves constituting radiation, whether of light or Roentgen rays or other variety.

From these and further considerations based on very elaborate mathematical calculations it is now maintained that matter is composed of electricity and nothing else. Electricity here is not considered as a form of energy any more than water is a form of energy, but as a vehicle of energy, which can be moved from place to place, and whose energy must be in the form of motion or of strain. In motion it constitutes current and magnetism; under strain it constitutes charge and in vibration it constitutes light.

Sir Oliver Lodge describes the atom of matter as constituted of an individualized mass of positive electricity diffused uniformly over a space the size of the atom, perhaps spherical in shape and about one two hundred millionth of an inch in diameter. Throughout this small spherical space some 800 minute particles of negative electricity all exactly alike, are supposed to be scattered, flying vigorously about, each repelling every other and yet all contained within their orbits by the mass of positive electricity. The positive electricity is very much attenuated and constitutes, perhaps, only about one per cent. of the mass of the atom, while the negative electrons are corre-

spondingly dense, and so inconceivably small that the 800 are less crowded in their atom than are the planets in the solar system.

Atoms of different kinds of matter are supposed to be constructed in the same general manner and of the same kind of electrons, but the number of electrons in an atom are proportional to the atomic weight of the element. Thus oxygen would have about sixteen times as many electrons in its atom as has hydrogen. When the crowding becomes excessive, as in the very heavy atoms of uranium, thorium, and radium, having atomic weights well over 200, the atoms become radioactive, probably due to numerous collisions between the electrons, some of which are being constantly shot away. In like manner the atoms may be constantly emitting ether waves due to the motions of the electrons within, and so slowly undermining their own constitution. Thus atoms will occasionally collapse or divide into parts. This has been observed by Rutherford, who analyzed the radiations from radium by means of a strong magnet. Three kinds of rays were demonstrated by the effect on a photographic plate, one, of negative electrons, called beta rays, being greatly deflected by the magnet; another set called gamma rays are ethereal pulses, and are not deflected at all, while the third or alpha set are slightly repelled by the magnet, being composed of positive electrons. From the degree of deflection their mass can be calculated, and this is found to be 1600 times that of an electron, or twice the atomic weight of hydrogen. This is the atomic weight of helium, and Sir William Ramsey has observed the helium spectrum gradually to develop in a tube which contained nothing but the emanation from radium. Here, then, we have the formation of a new kind of substance, helium, next to the lightest substance known, from radium, one of the heaviest. These minute particles are thrown off with tremendous violence, causing a zinc sulphide screen to flash brightly when they fall upon it, and giving rise to heat when stopped by any obstacle.

Matter, then, appears to be composed of positive and negative electricity and nothing else. All of its properties, the newly discovered as well as the long known, can thus be explained, except gravitation; and even this is surmised by Sir Oliver Lodge to be a slight but uniform residual or secondary effect due to the immersion of negative electrons in a positive atmosphere. It is a mutual force acting between one atomic system and another which is proportional to the number of electrons in each.

Although the study of the radioactive elements has helped us to a better understanding of the composition of matter, still it leaves us unenlightened upon the cause of this spontaneous radiation.

Mme. Curie in her elaborate thesis upon the subject suggests several hypotheses in answer to the question whether the energy of radioactive bodies is generated within themselves or borrowed from external sources. It may be assumed to have been initially accumulated and then gradually dissipated as in the case of long-continued phosphorescence; it may be that the nature of the body is changing, through the particles given off, into a new body or it may be another manifestation of the force of gravitation, itself an enigma. Finally, we may imagine that space is constantly traversed by radiations yet unknown, which are arrested in their course by radioactive bodies and transformed into radioactive energy.

Be this as it may, the remarkable fact remains that within the atoms of matter reside forces of stupendous power, as much more energetic than the ordinary physical and chemical forces we are familiar with as these are stronger than gravitation.

Can we make use of this intraatomic energy? As yet only a beginning has been made, but the mind of man which has already subjugated so many of nature's forces to his use, will in time doubtless conquer this most subtle power also.

A CASE OF TYMPANIC AND MASTOID CHOLESTEATOMA; EXTRADURAL ABSCESS; SINUS THROMBOSIS; PROLONGED PYEMIC TEMPERATURE WITHOUT METASTASES; RECOVERY.

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The patient, a boy, twelve years of age, came under my care on January 26, 1905. He gave the following history: About ten years ago he had scarlet fever, in the course of which he suffered with pain in, and discharge from, the left ear. On his recovery the ear failed to clear up, and ever since then he has had more or less discharge therefrom. One year ago he had an attack of pain in the ear, with some fever and a swelling over the mastoid region. The swelling was incised, and some pus evacuated. The wound healed in the course of a few weeks, the otorrhea continuing. One week ago he began to have renewed pain in and behind the ear, with increase of the discharge. For the last three days he has had pain in the left occipital and parietal regions, with feverishness but no chills.

Physical examination.—The boy is pale, his facial expression somewhat drawn and anxious. Temperature 103°, pulse 100. The left tympanic membrane shows a large perforation, through which a foul-smelling pus is slowly discharging, mixed with small masses of cheesy consistency. There is marked tenderness over the entire mastoid region. Over the region of the antrum there is a linear scar about one inch in length. The skin here is slightly reddened. There is no edema.

Operation, January 28, 1905.—The mastoid was opened after the manner used by Dr. Whiting. The entire mastoid apophysis was found softened and destroyed, the cells full of soft, dark-colored granulations, pus exuding from the antrum. The antrum attic and adjacent region were full of foul-smelling cholesteatomatous matter. The inner table over the sigmoid sinus was softened and dark, and on scraping it away about half an ounce of foul-smelling pus escaped. The subjacent dura was covered with dark-colored, flabby granulations. This extradural abscess was found to cover the entire sinus as high as the knee, and to extend forward and backward, covering an area about the size of a twenty-five-cent piece. As the patient's pulse was very feeble, and as the sinus appeared to be pervious, it was determined not to open it. The posterior wall of the bony meatus was chiselled away, thus throwing antrum and tympanum into one cavity, making a radical mastoid operation, and the tympanum was carefully curetted out. A Whiting flap was cut from the soft parts of meatus and fastened in place with catgut

sutures. The wound was packed with iodoform gauze and the patient put to bed.

Next morning (January 29), the patient was very comfortable, his temperature being 99.8. At 12:30 P. M. he had a severe chill lasting fifteen minutes, followed by a temperature of 104.6°. At 9 P. M. he had a second chill; temperature at 9:30 P. M., 106°. He then went to sleep and slept till 6 A. M., January 30. At 7 A. M. he had a third chill, followed by a temperature of 105.6°. It was evident that there was thrombosis of the sigmoid sinus, and that a second operation would be necessary. The patient was therefore prepared, and at 11 A. M., January 30, assisted by Drs. Cook, Steel, and Moe, I removed the dressing and opened the sinus. A soft gray clot was found, extending from knee to bulb. On carefully scraping this away, free bleeding was easily established from both lateral sinus and jugular bulb. The first blood from the bulb was mixed with pus. As the hemorrhage from the bulb was so free, it was not thought necessary to tie off the jugular vein, therefore the cut ends of the jugular were plugged with iodoform gauze and the wound packed with the same. The patient came off the table in remarkably good condition, with a pulse of 86.

For the next five days the patient remained comfortable, the temperature ranging between 99.5 and 102.8, and the pulse from 88 to 108. On February 4,

at 6 A. M., he had a slight chill, followed by a temperature of 104°, pulse 120. Temperature remained high all day until 6 P. M., when it dropped to normal, but during the evening it again rose to 104. This pyemic temperature continued until February 6, when it was decided to ligate and remove the jugular vein. This was done by the usual incision, extending from in front of the lower end of the first incision to the suprasternal notch. The sheath of the vessels was opened, and the vein separated from the vagus nerve, tied in two places, and cut. The facial vein was also tied off and cut, and the entire jugular vein dissected out. The wound was packed with iodoform gauze and the patient returned, in very fair condition, to bed.

For twenty-four hours after the operation on the jugular vein the temperature remained normal or sub-normal. During the afternoon of February 7, however, it began to rise, and at 8:30 P. M. it reached 105.4°. From this time on his temperature ran a typically pyemic course, going from sub-normal to 105° or over every day. The boy was cerefully examined every day for metastatic abscesses, but none were found. He had on one occasion a few very indefinite subcrepitant râles in the right chest behind, but the râles were unaccompanied by cough or accelerated respiration, and they disappeared in twenty-four hours. The wounds healed as rapidly and kindly as if there had been no infection, and the ligature came away from the lower end of the jugular vein on February 20, just fourteen days after the operation. The boy's appetite was excellent, and he was allowed a liberal diet, to which he did ample justice. A week later the picture remained the same Blood counts showed a tremendous leucocytosis, and on one occasion streptococci were demonstrated in the blood. On March 3, for the first time since the ligation of the jugular, he had no chill, and his temperature ranged from 99° to 102.5°. The three days following (March 4, 5, and 6), were similarly free from chills, and showed a like range of temperature. At midnight, March 6, however, he had another chill, followed by a temperature of 105°. The temperature quickly came down to the normal, however, and remained so until late in the evening. About 11 P. M. he suddenly became delirious and cyanotic, his pulse was uncountable, and his temperature, taken in the axilla on account of his restlessness, went to 107.8°. The delirium and cyanosis lasted about an hour. At 12:30 A. M., March 8, his temperature was 105°, at 3 A. M. it had fallen to 100°, and at 7.45 A. M. it was 97.2, his pulse was 96, his head was clear, and he was demanding food and showing no apparent ill effects from his ebullition of fever. His temperature remained low for two days, but again on the 12th, 13th and 14th he resumed the old program of daily chills, although comparatively moderate temperatures (the maximum being 105.6°) followed them. There being still no signs discoverable of metastatic abscess anywhere, it was suggested by one consultant that there might be trouble in the torcular end of the cut lateral sinus. Acting on this suggestion, on March 16 I reopened the posterior wound, uncovered the lateral sinus, and opened it. Free bleeding was obtained at the first cut, indicating that the sinus was clear. The wound was plugged, and the patient was returned to bed, in better condition after this fourth operation than any after any one of the preceding three.

Although nothing was found to justify the last operation, yet its effect appeared to be rather good. He had no more chills or chilly sensations, and he seemed to gain strength more rapidly. His temperature, also, showed a lower range. On March 23, at 5:30 P. M., without any chill, his temperature reached 105.2, but it dropped rapidly to normal, and on March 24 his condition was so good that I allowed him to sit up in bed for an hour. There was no further trouble from this time on. The next day he sat up in bed all day, his temperature ranging from 97.2° to 99.5°. On the 26th he was allowed to have his clothes on, and on the 29th he was discharged from the hospital and taken home by his parents.

The subsequent history of the patient presented no unusual features. He came regularly to the dispensary three times a week for dressing, and on June 15 his ear had completely dermatized, his other wounds were all healed, and he was discharged from further treatment.

The interesting and unusual features of this case may be summed up as follows:

Time in hospital, eight weeks and four days.

Time during which pyemic temperature lasted, seven weeks and five days.

Metastatic abscesses, none.

Number of chills, thirty-nine.

Highest temperature, 107.8°, in axilla.

Lowest temperature, 96°, in mouth.

Range of temperature, 11.8°.

527 Madison Avenue.

SOME NOTES ON THE CEREBROSPINAL FLUID.

By N. A. PASHAYAN, M.D.,

KINGS PARK, N. Y.

Lymphocytosis in the cerebrospinal fluid has been observed in a number of conditions such as syphilis and chronic alcoholism; but special diagnostic value has been accredited to it in two diseases—viz., general paresis and tabes. With the object of inquiring into the constancy of this sign in paresis and also into its occurrence in other mental affections, a number of patients were selected and a cytological examination of the spinal fluid made.

The following comprises the list: General paresis, all types, 27; Major epilepsy, 24; Infantile cerebral palsy with epilepsy, 2; Primary lateral sclerosis with imbecility, 2; Hebephrenia, 13; Katatonia, 8; Manic-depressive insanity, 7; Chronic alcoholic deterioration, 7; Paranoiac states, 7; total, 97.

The diagnosis of paresis in the cases examined could be considered reasonably certain, being based on well-defined somatic signs and mental symptoms. The findings may be tabulated as follows:

Type of Disease and Remarks.	Number of Lymphocytes.
1. Stuporous dement	282
2. Mildly exalted	185
Same case on another occasion	151
3. Marked expansive ideas	162
4. Depressed	133
5. Cerebrospinal type	129
6. Maniacal	79
7. Depressed, rapidly advancing deterioration	52
8. Demented	51
9. Maniacal excitement	42
Same case during remission	50
10. Demented	48
11. Demented	46
12. Expansive rapid mental and physical decay	33
13. Markedly hypochondriacal	32
14. Demented	29
15. Expansive type, colored with persecutory ideas	24

16. Demented	22
17. Demented	20
18. Maniacal excitement	17
Same case in remission	8
19. Demented	15
20. Expansive type	15
17. Demented	29
21. Expansive type, with apparent arrest of the disease	12
Same in different tapping	9
22. Hypochondriacal	10
23. Demented	4
24. Grandiose ideas	2
25. Demented	0
26. Depressed—prolonged remission	0
27. Expansive type	0

In sixteen of the cases the increase of the lymphocytes may be considered marked, in five moderate, in three doubtful, and in three negative. The disease process was active in the two of the negative findings, while the third was in a state of prolonged remission. Of the doubtful number one was in a condition of mental habetude after a period of maniacal excitement.

The type or the stage of the disease did not seem to have any special bearing on the degree of the cellular reaction. The highest count was seen in a stuporous dement whose physical health was good. Only seventy-nine lymphocytes were found in a case of continuous psychomotor agitation, at times bordering on delirium. No. 12 in the above list, while undergoing a rapid mental and physical dilapidation, exhibited no more than thirty-three cells. On the other hand, there were obtained 129 lymphocytes in a patient suffering with the ascending or cerebrospinal type of the disease, who was in splendid health physically and the mental symptoms were limited to slight amnesia for recent events, some morbid euphoria, and boastfulness. During the height of maniacal excitement in one case the lymphocytes numbered forty-two, while a few months later, in a period of remission, fifty cells were found.

No lymphocytosis was discovered in major epilepsy with one exception. On two different tappings twenty-two and twenty-six lymphocytes respectively were found. The patient had been an inmate of the institution for six years and suffered with epilepsy since childhood. There were no physical signs pointing to tabes, paresis, or any other organic disease. Any residual signs of luetic infection were wanting. It might be added, however, that he has had for a number of years psoriasis of the scalp.

The findings were negative in all cases of hebephrenia—7, 5, 3, and 2, were the only cells encountered. Similarly no increase of lymphocytes was seen in katatonia. Every one of the latter group was characterized by stupor, negativism, and marked muscular rigidity.

Manic-depressive insanity was not accompanied by lymphocytosis. The seven cases included only manic and mixed phases of the psychosis. In none of them did the number of cells exceed two.

The seven cases of chronic alcoholic deterioration were quite typical of their class, but in none of them more than one or two lymphocytes were met with.

No increase of cells was noticed in any cases of the organic nervous diseases nor in any of the paranoiac states.

Six of the cases with negative findings in the above list, two being paretics, gave a history of having had syphilis. In five of them corroborative physical signs were still present. Several years had elapsed, however, since inoculation took place, the most recent one antedating five years.

In estimating the number of the lymphocytes the plan adopted differed in principle from those generally recommended. The patient lay invariably on a table on the right side, head and knees drawn to the chest. Within five or ten minutes after a subcutaneous injection of thirty minims of a 4 per cent. cocaine solution, a long, narrow aspirating needle was inserted between the first and second lumbar vertebræ close to the spinous process. The fluid was collected in sterile tubes and soon after and without centrifugalization the amount of the lymphocytes estimated. For this purpose a Thoma-Zeiss hemocytometer was employed and the number of cells found in 4,000 squares taken as the index of the lymphocytosis present. The specific gravity of the lymphocytes being practically identical with that of the fluid, cellular distribution, and hence their estimation, must needs be uniform. Ten chamberfuls of the hemocytometer being counted, the result should indicate if any increase of lymphocytes existed. The figures above given were obtained in counting the unprecipitated fluid in 4,000 squares.

Fluids containing erythrocytes were discarded. Where any appreciable number of lymphocytes were met with, the specimen was centrifugalized and the deposit transferred on slides, dried, fixed, and stained as ordinarily done with blood. It was seen that large lymphocytes averaged 70 to 80 per cent. and small ones 20 to 30 per cent. Occasionally a few transitional leucocytes were also seen. Polymorphoneutrophiles were absent.

The total amount of the fluid withdrawn varied in individual cases, the average being 2 and 6 c.c.

The position occupied by all the patients being the same, it was remarkable to see how much variation in the degree of tension existed. In some hardly one drop every 5 or 10 seconds could be obtained, while in others as soon as the membranes were punctured there was a gush, a continuous jet streaming for one minute or longer. As a general rule two drops per second was the rate at which the fluid would escape. Talking or any other effort would always accelerate the flow. No special relations seemed to exist between the psychosis and the degree of tension. Paretics as a class appear to have high tension, but there were a good number of exceptions to this. Among those having high tension were epileptics, manic-depressive cases and precocious dements. The highest as well as the lowest tensions were observed in epileptics—in the latter case the fluid was almost viscid.

Under cocaine anesthesia very little if any pain was experienced by the patients. Eliminating all complaints referable to pain or fear, there were still manifested physical and psychic symptoms that can be conveniently classified as immediate and later effects. Among immediate effects pallor, acceleration and irregularity of pulse, but, over and above all, dyspnea—a genuine "air-hunger" and difficulty of inspiration should be mentioned. A few cases became talkative and emotional. One patient in particular, while on the table was calm, suffered no discomfort, and was conversing pleasantly. As soon as he was put to bed he became confused, garrulous, and soon passed into a state of delirium lasting about ten minutes. He complained of great thirst and consumed nearly a gallon of water within the next few hours.* A few complained of tem-

*In order to exclude the possibility that the delirium might have been due to the idiosyncrasy of the patient to cocaine, it was intended to give him the same amount of the solution hypodermically without lumbar puncture, but unfortunately he left the hospital before this was done.

porary parethesias in the legs, such as numbness and pins and needles. Chronic alcoholics seemed more susceptible to immediate effects than any other class.

The later effects consist principally of headache, vertigo, nausea, vomiting, and a general malaise. These make their appearance from two hours to two or three days subsequent to tapping. Vertigo and headache are very distressing and may persist for a week or more. Those having high tension seem more predisposed to them. On the other hand, paretics suffer very little from these after-effects.

Every possible precaution for surgical cleanliness was taken, and in a number of over 175 tappings no focal or systemic ill-effects from this source were developed.

To summarize: Of 27 cases of general paresis a marked increase of lymphocytes was seen in 16, moderate one in 5, doubtful in 3, and negative in 3. Lymphocytosis was absent in 7 chronic alcoholics, 6 old syphilitics, 25 epileptics, 13 hebephrenics, 8 katatonics, 7 manic-depressive cases, and 7 paranoiac states.

Kings Park State Hospital.

SURGICAL RINGS.

By H. A. SHAW, M.D.,

SEATTLE, WASH.

Through the medium of this journal I wish to bring to the notice of the profession a surgical device which other local surgeons as well as myself have found both time-saving and efficient.

The device consists of a pair of steel rings with a small segment cut out. They fit upon the second phalanx of the index fingers, with a denticulated plate upon the inner side of each ring, as seen in figures 1 and 2.

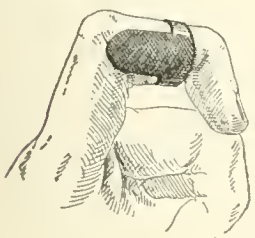

Fig 1.

Fig. 2.

The primary object of the device is to enable the operator to go back to first principles, and use his fingers instead of forceps, needle holders, etc.

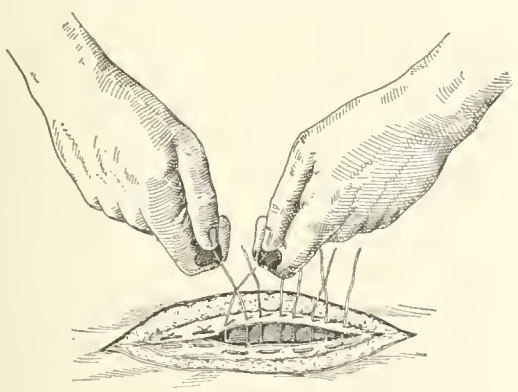

Fig. 3.

1. Its first and most important use is in tying sutures and ligatures. In this case the main advantages are that it is ready for instant use and does not weaken the suture or ligature material, as forceps does, and also avoids cutting of the fingers and consequent infection (Fig. 3).

2. It enables the operator to separate adhesions with the fingers without the aid of forceps, gauze,

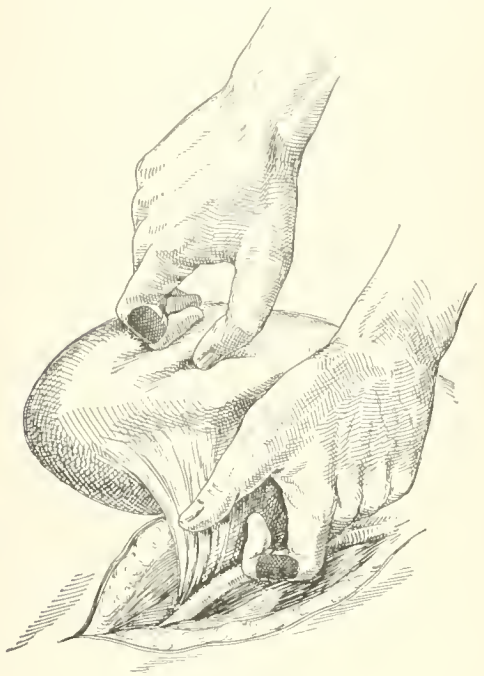

Fig. 4.

etc., with the least amount of injury to the tissues, being especially valuable in separating the hernial sac from the cord, and in varicocele (Figs. 4 and 5).

3. In grasping and retaining tissues, it is much handier and produces less injury than tissue forceps.

4. In the manipulation of the needle, both as a

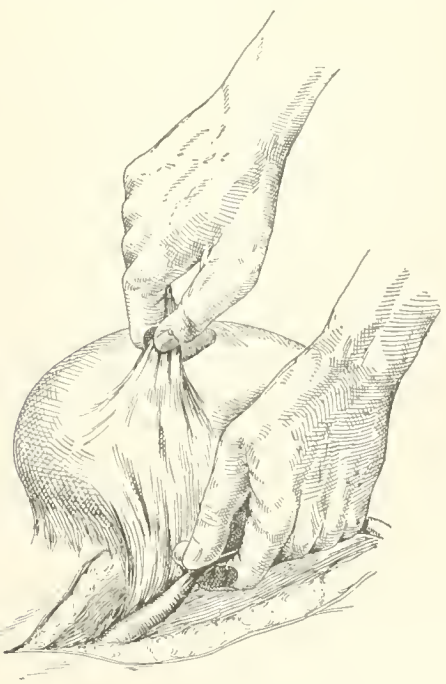

Fig. 5.

holder and as a guide in directing the point of the needle among important structures.

5. Lastly, it enables the operator to handle with ease slippery viscera, as intestines, etc.

It may be said in conclusion that these rings in no way interfere with the action of the fingers.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, February 10, 1906.

THE TREATMENT OF SHOCK.

VASOMOTOR relaxation has long been recognized as the important factor in the production of shock, but the researches of Crile during recent years have undoubtedly added renewed interest to the subject. The question of treatment has also become pretty well crystallized, and prophylactic measures occupy a position of greatest importance. For the shock itself, physiological salt solution and adrenalin have come to be regarded with the greatest degree of favor. Strychnine has largely been employed as a stimulant in this condition, but its value is questioned by many, as it has been shown by animal experiments that this drug exerts little or no influence in raising the blood pressure, which is the essential feature of the treatment. An interesting symposium on this subject is presented in the pages of the December number of the *Therapeutic Gazette,* in which the opinions of a number of leading surgeons have been included.

W. W. Keen has now given up entirely the use of strychnine in shock, basing his change of opinion as to the value of the drug on Crile's researches, and he is very well satisfied with adrenalin, which he has substituted for the former. E. E. Montgomery lays particular stress on the preventive treatment of shock, but when it does occur he advises the injection of a single large dose of strychnine (gr. 1/20-1/5) as a cardiac stimulant, and, in addition, hypodermoclysis or intravenous infusion of a one per cent. solution of sodium chloride containing adrenalin. Repeated doses of strychnine are cumulative, and he therefore advises subsequent injections of some aseptic ergot preparation as an excellent means for increasing the contractile power of involuntary muscular fiber, relying on this as the most effective agent against shock, next to salt solution. Edward Martin favors strychnine as a tonic before operation, but during and after the same he has abandoned its use, particularly in the case of pure shock which is primarily due to trauma and can be helped neither by drugs nor by hypodermoclysis. The latter, in his opinion, is useful merely in favoring elimination, and should be given so slowly as to be immediately absorbed. The only drug which seems to have any effect at all in desperate cases is adrenalin, and to be effective this must be given intravenously and in extreme dilution (1:20,000). When hemorrhage complicates the case, intravenous infusions are of value only if given slowly and repeatedly.

Da Costa is convinced that Crile is correct in his views as to the futility of strychnine in the treatment of shock, as it merely hurries the circulation without strengthening it, and its effects are only transitory. Adrenalin in small amounts hypodermically is also transitory in its effects, but when given intravenously in salt solution and very slowly, it is a remedy of the highest importance. La Place contends that the slow absorption which has been observed to occur when strychnine is given, in a measure explains the inefficiency of the latter in cases of deep shock, and also accounts for the large doses tolerated when the circulation is thus depressed. Restoration of the circulation is always the most important consideration, and La Place believes that this may be most effectively secured by the application of the electric current. Notwithstanding the experimental evidence adduced against strychnine, H. A. Hare favors it as stimulant of the entire organism, and although it may have been relied upon too much in the past, he believes that it should not be cast aside entirely, but be used in connection with the other measures advocated for the treatment of shock.

DOCTORS AND POLITICS.

THE opinion has been expressed frequently in the editorial pages of the MEDICAL RECORD that it would be to the benefit of the general public and of the medical profession itself, if medical men took a more active part in politics. There is no need for a doctor to become what is known as a politician; in fact such a course would not serve the purpose of advancing the interests either of the community at large or of the medical profession—indeed, the effect would be rather the reverse. It is fairly well understood that the politician pure and simple regards politics as a profession or game at which he endeavors to gain a fortune, or at any rate a livelihood. He is fighting for his own hand or for the advantage of the organization to which he belongs.

There is every reason, however, that the medical man should evince a certain amount of concern in those matters which relate to medicine or sanitation, and use his influence to promote the health of the people and to safeguard the interests of his own profession. It is notorious that bills are continually being brought forward or passed in the legislatures of every State of the Union that menace public health, and have been designed with the view of injuring the medical profession. There can be no doubt that the doctor can, if he will, wield an immense amount of influence. He is, perhaps, by virtue of his calling, in more intimate touch with all sorts and conditions of men than is the member of any other class. The way, therefore, in which the medical man can do most good is by educating those with whom he comes into close contact to a sense of the necessity of possessing sound sanitary and medical laws, and by teaching them that such laws are not advocated solely for the selfish reason that they will conduce to the advantage of his own profession. This is essentially a material age, perhaps the most material age that has been ever known, and the United States is by no means the least commercial country of the world, the consequence being that almost any bill introduced by a medical man, or any opposition advanced by the medical profession to legislation favoring quacks, Christian Scientists, and illegitimate practitioners of every description, is immediately put down by an in-

considerate public to the doctor's peculiar care for number one. Of course we do not insist upon the proposition that the members of the medical profession are one and all unselfish and absolutely without guile. Such a statement would be too manifestly absurd, for there are some very wily and by no means guileless politicians in our own ranks. But the assertion is made deliberately that the distrust with which medical measures are generally regarded is unfair to an in the main honorable and generous profession, and will react injuriously on the heads of the sceptics.

What is really required is a better understanding between the people at large and the doctors, and it is plain that no one is better qualified to remove suspicion than the physician himself. A political missionary medical man has a wide field in which to work, and by assiduous zeal, combined with discretion and straightforwardness, should succeed in making many converts. Only convince a man that your intentions are honorable, and above all that their consummation will be to his physical and material good, and he will undoubtedly be upon your side. In the *Lancet* of January 13, medical men and the British general election are considered editorially. Our London contemporary takes the eminently correct view that medicine and partisanship in politics should be completely divorced. It is pointed out that medical men who are candidates for election to Parliament are not going to the poll as medical men, but as members of the particular party to which they may have given their adherence. Notwithstanding the expression of these rational sentiments, our contemporary takes occasion to draw attention to the fact that it is in a high degree desirable that the medical profession should be well represented in Parliament, if only for the reason that "politics, not only domestic politics, but foreign politics, revolve more and more around questions of public health." To give an instance, which applies with equal, if not greater, weight to the United States than to Great Britain, enormous numbers of poverty-stricken, diseased, and persecuted men and women have been leaving Russia in order to seek a haven of rest in a free country. The majority of these have made their way to this country, either to be rejected or to be allowed to enter, but a substantial proportion of the horde has been landed in British ports. The *Lancet* argues, and rightly, we think, that the statesman of to-day may at any moment find himself in need of expert medical advice, and that therefore the medical profession should be adequately represented in the national legislature. However, the argument that medical men should interest themselves in politics is so self-evident that it would be superfluous to continue to press the point. Up to the present time the American physician has shown himself lethargic and languid so far as politics are concerned. He has acted as if he had no part nor parcel in the regulation of matters which most assuredly affect him closely. It is time that the medical profession of the country should come to a realization of the situation, and should resolve, by every means in its power, to forward the welfare of the entire community and to conserve its own interests. Such a result will not come by sitting with folded arms and watching the progress of events.

A PATHOLOGICAL FACTOR IN A CASE OF MORTON'S DISEASE.

Since Morton, in 1876, first recognized and described metatarsalgia as a disease *per se*, a great diversity of opinion has existed with reference to its etiology. As anatomical changes were hard to trace in connection with this complaint, the latter was quite generally regarded as of nervous origin. Morton himself sought to find an explanation for the characteristic pain in some abnormal configuration of the arch of the foot, due to tight shoes or trauma. In a large number of cases, infectious diseases, particularly malaria, gonorrhea, and influenza, were considered to have some bearing on the production of metatarsalgia, in others localized toxic or inflammatory processes were accused. Traumatic and inflammatory deposits have also been thought of as etiological factors, although true tumors in connection with the disease have rarely ever been observed. A few instances of calcified enothelioma, fibroma, and lipoma have been noted, but the connection between these and the attacks of pain could never be clearly traced. Furthermore, in most cases operated upon no pathological changes could be detected in either the neighboring joints or the affected nerves.

The uncertainty which apparently exists regarding the etiology of Morton's disease renders the finding of a definite pathological lesion, even if thus far in only a single instance, of considerable interest. Pochheimer (*Zeitschrift für Chirurgie*, Vol. 80, No. 3) had under observation a young woman who developed a typical case of metatarsalgia after having suffered repeated injuries to her foot. Subsequent examination disclosed a number of nodules under the skin, scattered along the flexor surface of one of the toes. An operation undertaken for the relief of her symptoms showed that these nodules were distributed along the course of the nerve supplying the digit, and on microscopical examination they proved to be fibrosarcomata. They were apparently derived from the flexor tendon, its sheath, or the plantar fascia. The pain was probably due to direct pressure exerted by the tumors, and no nerve elements could be found in any of them. The lesion here referred to is extremely rare, however, and does not by any means afford sufficient evidence to warrant our attributing all cases of Morton's disease to this source; yet it clearly demonstrates how important and necessary it is to bear in mind the possibility of latent tumor formation even in cases of seemingly purely neurotic conditions in the foot. One should not be satisfied in any given case with an explanation which attributes the pain to a simple inflammatory process, but when sufficient doubt exists an exploratory operation, in order to determine the true condition of the parts, would be justifiable. Morton's disease is unfortunately not an uncommon condition, and we would doubtless know more about it if this suggestion of Pochheimer were more frequently acted upon.

Relief of Intercostal Pain by Sterile Water Injections.—Localize the pain by pressing deep into the intercostal space, then inject a syringeful of sterile water into the tissues in the vicinity of the nerve. Complete cure has followed this procedure when morphine gave only temporary relief.—J. J. Reid.

Etiology of Congenital Dislocation of the Hip.

The unusual prominence given to this subject within recent years lends particular interest to the numerous theories which have been brought forward to account for the production of this deformity. Broadly speaking, these may be grouped into two great classes—in the first, the luxation is ascribed to some error of growth or development; in the second, the condition is attributed to some abnormal attitude of the fetus in utero. All other attempts to explain the deformity, including trauma during pregnancy or labor, relaxation of the joint ligaments, articular hydrops, localized muscular paralysis, etc., have failed to withstand criticism. Since the lesion has become better understood, the number of reported cases has greatly increased, and among the interesting points noted in studying this mass of clinical material is the fact that the deformity is often associated with others in the body, which in most instances depend on some mechanical influence. Among these are torticollis, pes varus, genu recurvatum, and a number of others. Paul Ewald, in an article in the *Deutsche Zeitschrift für Chirurgie,* Vol. 80, Nos. 3 and 4, suggests that there is no good reason why we should not ascribe the congenital hip dislocation to the same factors which bring about the other deformities mentioned. It is believed that insufficiency of liquor amnii, together with anomalies in the form and position of the uterus on the one hand, and in the presentation and position of the fetus on the other, have an important bearing on the production of the deformities mentioned, and it is not unreasonable to assume that they exert an equally important influence in the production of the luxation under discussion. That no inherent error in development exists which tends to produce a congenital dislocation of the hip, seems fully proven by the fact that after successful reposition of the femoral head, an acetabular cavity will form, even after a period of one and a half to three years has elapsed. This certainly could not occur if any inherent developmental error existed in these parts. It has also been shown by animal experiments that a flattening of the acetabular cavity will follow either a resection of the head of the femur or any means taken to prevent a close approximation of the latter to the acetabulum. We may imagine that this condition may readily enough be reproduced in a fetus which is made to assume an abnormal attitude by anomalies in the uterus or the maternal pelvis.

Protective Inoculation Against Typhoid Fever.

An interesting contribution to this all-important subject is contained in a report by the commander of the German troops in Southwest Africa, where the procedure had been employed on a fairly large scale and in a systematic manner, published in the *Archiv für Schiffs- und Tropen-Hygiene,* Vol. IX. No. 12. Of 424 patients with typhoid fever under observation, there were 100 who had previously received from one to three injections of the Pfeiffer-Kolle serum. The time which elapsed between the injections and the onset of the disease was not always accurately known, but in no instance could it have exceeded nine months. It was found, however, that in the worst among the inoculated cases in this series, the patient had been taken ill soon after vaccination, and apparently the protective action of the serum required at least three weeks or longer for its proper development. Several features of interest are presented by a comparison of the course of the disease in the non-vaccinated and the vaccinated subjects. In the former class of cases, to begin with, the mortality was 11.1 per cent.; in the latter, 4 per cent. It was also observed that although mild cases were found among the non-vaccinated patients, these seemed to be more prevalent in the other group, particularly as regards the toxic symptoms. Thus, there was little headache complained of, no sensory disturbances of moment, and slight cardiac involvement, although the other evidences of the disease, such as splenic enlargement, the characteristic eruption, and the pea-soup stools, were present. The fever ran a much shorter course in the inoculated patients, and did not reach an equal height. Recurrences were very infrequent. Final conclusions on the value of protective inoculation in typhoid fever cannot as yet be formulated from the observations which have thus far been published, but they certainly afford us a favorable outlook for the future. An absolute protection against the disease has not been attained, but there can be little doubt that its effects have been ameliorated in those who have subjected themselves to protective inoculation, and this protection, moreover, seemed to be measured by the number of inoculations. If the method has not been sufficiently developed for general application in civil medicine, there should be no question as to its further trial in armies, in which we have come to fear diseases of this class more than wounds received in battle.

News of the Week.

A Reception to Baron Takaki will be tendered by the New York Academy of Medicine on February 15, after the regular exercises of the meeting. The program of the evening will be: A paper on "Arterial Sclerosis of the Viscera," by Dr. Harlow Brooks; a paper on "Arterial Tension," by Dr. Theo. C. Janeway, and "Remarks on Medical Schools in Japan," by Baron Takaki.

The Dirty Streets of New York.—Bird S. Coler, president of the Borough of Brooklyn, recently made an attack, in a published interview, upon Commissioner Woodbury for his neglect to clean the streets, and is quoted as saying that he is the "most incompetent official in the city." "The condition of the streets and the public dumps here," Mr. Coler is reported to have said, "is simply disgraceful. I have taken trips through different sections of the borough and have found the streets littered with papers and rubbish and no evidence that a real effort had been made to keep them clean. I consider Major Woodbury thoroughly incompetent. About all he prides himself on, apparently, is that his horses are in stables that are as handsome as castles. Our streets are dirty beyond endurance and Woodbury does nothing." There is certainly no question as to Dr. Woodbury's failure to keep the streets clean. Even under Nagle, of scented memory, they were hardly so filthy as now.

Rockefeller Institute Scholarships and Fellowships.—The Rockefeller Institute for Medical Research purposes to award for the year 1906-07 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the Institute in New York City, under the following conditions: The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoology, physiology, pharmacology, and physiological and pathological chemistry. They are open to men and women who are properly qualified to undertake research work in any of the above mentioned subjects and are granted for one year. The value

of these scholarships and fellowships ranges from six hundred to one thousand dollars. It is expected that holders of the scholarships and fellowships will devote their entire time to research. Applications accompanied by proper credentials should be in the hands of the Secretary of the Rockefeller Institute Dr. L. Emmet Holt, 14 West Fifty-fifth Street, New York City, not later than April 1, 1906. The announcement of the appointments is made about May 15. The term of service begins preferably on October 1, but, by special arrangement, may be begun at another time.

Quarantine Regulations.—Members of a special committee selected by the Southern Representatives and Senators have agreed on a bill relative to quarantine matters which has been submitted to a delegation from the States especially interested. The object of the bill is to provide for wider jurisdiction of the Public Health and Marine Hospital service, and to prevent the introduction into Southern ports of yellow fever from Central and South American countries. Among other things the measure appropriates $500,000 for the purpose of acquiring suitable places for quarantine grounds and anchorage for vessels at such points as may be best suited to prevent the introduction of yellow fever. This sum is placed at the disposal of the Surgeon-General in part also, to prevent the importation of the disease and its eradication in case it is introduced. A special quarantine commission, promoted by the Union Fruit Company and the New Orleans Board of Health and comprising many Southern health officers, has been visiting Panama, Colon, and other places for the purpose of studying local conditions and forming practical quarantine regulations for the future.

Pure Food Laws.—Eighty cases of alleged violation of the pure food laws have lately been sent to the Attorney-General for prosecution. The New York State Department of Agriculture will increase the scope of inspection of foodstuffs. Heretofore, candies, preserves, syrups, and flavoring extracts only have been held up to tests, but now flour, meats, and breakfast foods are also to be analyzed. A bill to define natural, pure, artificial and carbonated wines, and to prevent misbranding, adulteration and imitation of wines, is now before the Committee of Ways and Means at Washington.

State Health Report.—The annual bulletin of the State Department of Health shows a total of 137,059 deaths reported last year. This made a death rate of 17.4 per thousand population, or about the average of the last five years, against 18.2 in 1904. There was a daily average of 376 deaths, against 380 in 1904 and 350 in 1903. Pneumonia was the cause of death in 14,157 cases, against 13,531 in 1904, and 9,000 in 1903. Pulmonary tuberculosis caused 10 per cent. of the deaths. The mortality from cerebro-spinal meningitis was 2,566, against 1,700 in 1904, and the average in former years, 550. Scarlet fever, after four years of high mortality, has suddenly decreased by half.

Aid for Needy Patients Discharged from State Hospitals.—At a conference held in Albany on January 31, representatives of the Charities Aid Association of New York City, members of boards of managers of the various State hospitals, the superintendents of State hospitals and the State Commissioners of Lunacy, agreed upon a plan for after-care of needy patients who are discharged from insane hospitals in this State as cured. The plan is to be carried out by the Charities Aid Association, if it will undertake the work as requested by a resolution adopted by the conference.

New York News via London.—The *British Medical Journal* announced a few weeks ago that the election of a Tammany Mayor of New York had resulted in the dismissal of our efficient Health Commissioner, Dr. Darlington. In its next issue, however, our contemporary corrected this statement, and informed its readers that "Dr. Darlington has been reappointed Commissioner of Health of New York City at a salary of 7,500 dollars (£1,500)." It explains that it "took this statement [regarding the dismissal of the Health Commissioner] from a responsible medical journal of New York." The question is not one of vital importance, for misinformation regarding American medical matters is not uncommon in our British contemporaries, but we should really like to know what "responsible medical journal of New York" was the authority for this statement. It certainly was not the MEDICAL RECORD, and we do not believe it was the *New York Medical Journal*, and so far as we know these are the only responsible medical journals of New York—at least weekly journals—to which presumably our British contemporary would look for the medical news of this city.

Christian Science in the Jury Box.—An individual, formerly more conspicuous than now among the New York followers of the Eddyotic creed, has been fined $100 for ignoring a summons to serve as a juror during the December term. In extenuation of his conduct the apostle of the immaterial alleged that as a "healer" he enjoyed the physician's immunity in regard to this duty of the citizen. The humor of the situation is presented by an editorial writer of the New York *Times*, who points out that the mental capacity of a person holding such beliefs is incompatible with even the modicum of common sense demanded of the occupants of the jury box. He further says that as a juror, a "Christian Scientist," being a professional contemner of all evidence and all the laws of evidence, and having a carefully trained blindness to every fact that does not come in the shape of a fee, would certainly be a spectacle just a little too ridiculous to be amusing. The real offender in this curious case is the court official who allowed the healer's name to remain among those of potential jurors for a single moment after his mental peculiarities were discovered.

Two More Quacks Arrested.—The County Medical Society is prosecuting two chevaliers of industry who have furnished a striking demonstration of the fact that the gullible in matters relating to the cure of disease are not found among the hoi polloi alone. Among the purchasers of the "magic boots" sold by this precious pair, and alleged to be curative for nearly all bodily ailments, are said to be persons of considerable prominence in social and financial circles. That this wonderful footwear was not intended for plebeian extremities is evident from the price, which, it is stated, frequently was more than $1,000 a pair.

Conviction of a Mental Healer.—After a trial lasting twelve days a notorious self-styled mental healer, who conducted a flourishing "Mental Science Institute" at Sea Breeze, Fla., was found guilty in a United States Court at Jacksonville, on February 3, and sentenced to pay a fine of $500 and serve thirty days in jail. She was charged with using the mails for fraudulent purposes, as

she treated patients all over the country by what she termed "absent treatment." The case was appealed and will now go to the United States Circuit Court of Appeals at New Orleans. This was the second trial of the healer. In the first trial two years ago she was convicted and sentenced to one year and one day in the Federal prison at Nashville, Tenn. This verdict was reversed on appeal.

Report of Committee on Nomenclature and Classification of Causes of Death.—In order to forestall the criticisms and incredulity with which the vital statistics of Chicago have been met for several years past, the Commissioner of Health, Dr. Charles J. Whalen, suggested that the Chicago Medical Society appoint a committee of experts in the nomenclature and classification of causes of death and the registration of vital statistics to make a study of the methods and work of the Health Department in these subjects, and to be empowered to report any defects discovered and suggest practicable remedies therefor. The suggestion was promptly acted upon by the society, and the following named members were appointed as the committee: Professors A. C. Cotton, Rush Medical College; N. S. Davis, Northwestern University Medical School; Adolph Gehrmann, College of Physicians and Surgeons; Ludwig Hektoen, Director Memorial Institute for Infectious Diseases; Geo. W. Webster, President Illinois State Board of Health; Weller Van Hook, Northwestern University Medical School, and Dr. J. Allen Patton. The committee submitted its report to the Council of the Chicago Medical Society January 9, 1906, by which body it was accepted and its recommendations concurred in. In substance the report of the committee was to the effect that the Health Department was obtaining accurate records of death and that its statistics might be relied on.

Medical Examiners of the Finance Department.—Dr. P. J. Murray of Brooklyn has been appointed medical examiner to the finance department of New York, *vice* Dr. A. L. Wolbarst, an appointee of former Comptroller Grout, resigned. The salary is $2,500 per annum.

Dr. Thos. R. Maxfield of Brooklyn has been appointed Acting Assistant Sanitary Superintendent of the Health Board in Brooklyn to succeed Dr. T. L. Fogarty.

Health Department to License Dogs.—A bill has been introduced at Albany to take from the Society for the Prevention of Cruelty to Animals of New York City the authority to license dogs and vest the same in the Department of Health.

Tuberculosis Exhibitions.—A tuberculosis exhibition, at which several popular lectures are being delivered, is being held at the Union Settlement, 235 East One Hundred and Fourth Street, from January 30 to February 13. The exhibition is under the auspices of the Charity Organization Society. In connection with the tuberculosis exhibition which was recently held in Boston, it is announced that the most essential exhibits will be shown in various cities and towns of the State.

The Osteopathy Bill.—Senator Hinman has introduced into the New York Legislature a bill to regulate the practice of osteopathy. The bill gives a definition of osteopathy, and provides for an independent Board of Osteopathic Examiners to be appointed by the Board of Regents on or before January 1, 1907, and serve for three years. The board is to be under the direction of the State Board of Regents, the same as the Medical Examining Board.

Dr. J. Edward Stohlman, superintendent of the German Hospital, in this city, has been appointed warden of the Jersey City Hospital, having been chosen from fifty-nine candidates for the position.

Queens County Jail.—The Queens County Grand Jury has handed up a presentment severely condemning the provision made for the insane in the county jail which it says could hardly have been worse during the middle ages.

Roosevelt Hospital.—Dr. George L. Peabody has resigned from the Roosevelt Hospital attending staff, and Dr. Frank H. Jackson has been appointed physician to the hospital to succeed him. Dr. Robert Coleman Kemp has been appointed Junior Physician to the hospital.

Ambulance Wrecked.—A Gouverneur Hospital ambulance was smashed and the horse injured in a runaway accident at Avenue D and Eighth Street on February 3. Both the driver and the surgeon escaped injury by jumping before the frightened animal collided with an express wagon and was seriously hurt.

Scarlet Fever Closes Schools.—Owing to the occurrence of two cases of scarlatina among their pupils, the New Jersey State Normal and Model Schools in Trenton have been closed.

Fifteenth International Medical Congress.—Contributions are called for to the Medico-Legal Sections of this Congress, embracing Forensic Medicine, Military, Naval, and Railway Surgery, and Hygiene and Epidemiology. All American contributors are requested to send to the president of the Medico-Legal Society the titles of such papers as they will contribute. They may be written in English, French, German, or Spanish. The preliminary program of the congress has been issued and contains plans of the building of the Lisbon Medical School where the section meetings will be held, and other details in regard to the various committees, heads of sections, etc. Information regarding the congress may be obtained from the general secretary, Professor Miguel Bombarda, Nova Escola Medica, Lisbon, Portugal.

Rockefeller Institute Fire.—Damage amounting to about $500 was done by a fire in the janitor's quarters of the Rockefeller Institute for Medical Research at 127 East Fiftieth Street, on February 2. The blaze lasted for about twenty minutes.

Bronx Medical Society.—At the next regular meeting to be held at Bronx Masonic Temple, One Hundred and Seventy-seventh Street and Washington Avenue, on Wednesday evening, February 14, 1906, Dr. Charles E. Nammack will read a paper on "The Practical Management of Typhoid Fever." General discussion by members of the society will follow the reading.

Removal of Dr. Bowditch.—In the annual report of the Massachusetts State Board of Charities, made public on January 29, the trustees of the State Sanatorium at Rutland are criticised for their action in dismissing Dr. Vincent Y. Bowditch as visiting physician at the sanatorium. The report refers to the incident as "an injudicious and regrettable step."

Hospital Commission for New York.—Mayor McClellan has appointed a commission of fifteen well-known men to act with the Commissioner of Charities, the Commissioner of Health, the Tenement House Commissioner, and the President of the Board of Trustees of Bellevue and Allied Hospitals as a committee to devise a plan of organization of the public hospital system. One of the matters to be investigated is the possibility of devising a single system of control of the various institutions

now under the management of the trustees of Bellevue and Allied Hospitals, the Department of Public Charities, and the Department of Health. In his letter to the commissioners the Mayor outlines a very broad program of study and says that he expects the commission to consider the entire hospital situation of the city of New York, to make a complete investigation of the whole subject, and after considering it in all its bearings to present a report upon which, if necessary, legislation may be obtained which will give the city a better system than that under which it is now compelled to work.

The Harvey Society Lectures.—Prof. T. H. Morgan will deliver the ninth of the Harvey Society lectures on February 17, at 8.30 o'clock in the hall of the New York Academy of Medicine. The subject will be "The Extent and Limitations of the Power to Regenerate in Man and Other Vertebrates."

The Late Dr. Ezra H. Wilson.—The Council and College Faculty of the Long Island College Hospital, having heard with profound grief of the death of Ezra H. Wilson, M.D., have ordered the following expression of the deep sense of the loss sustained by themselves personally, the Long Island College Hospital, and the Profession of Medicine, to be placed on the minutes of the board:

Ezra H. Wilson, M.D., having distinguished himself in his preliminary studies of medicine, devoted his life to the study of pathology and bacteriology. His work along these lines, as original investigator and instructor of the youth, has given his name a high place among the honored and distinguished men of the Profession of Medicine. For many years as a director of the Hoagland Laboratory, a member of the Council of the Long Island College Hospital, a member of the Health Board of this city, he exercised great influence for good. We feel that his untimely death has deprived us of a valued friend and worker, and the city in which he dwelt and the Profession of Medicine, of one of those modest, earnest, able students whose work is beyond price.

Elias H. Bartley, M.D., Joseph H. Raymond, M.D., Henry A. Fairbairn, M.D., *Committee.*

Obituary Notes.—Dr. Edward S. Dalrymple, a well-known physician of Sussex County, N. J., was found dead in bed at his home in Branchville Borough on February 3, at the age of forty-three years.

Dr. Daniel M. MacMartin, a native of Amsterdam, N. Y., died on February 2, of heart disease, at Spokane, Wash., at the age of fifty-two years. He was a graduate of the College of Physicians and Surgeons of New York, and had been located in Spokane for five years.

Dr. Asa Johnson of Minneapolis, Minn., died on January 27, at the age of eighty-one years. Dr. Johnson was born at Bridgewater, N. Y., but began his professional life at Beloit, Wis. He went to Minneapolis, then Saint Anthony Falls, in 1853, and since that time had been prominently connected with the public affairs of that city. In 1873 he became the founder and first president of the Minnesota Academy of Science. For the past fifteen years Dr. Johnson had retired from active practice.

Dr. J. R. Crofton of New London, Conn., died on January 29, at the age of thirty-nine years. He was graduated from the College of Physicians and Surgeons of New York in 1888, and served on the staff of the City Hospital and also in the Chambers Street Hospital.

Dr. Bertold Pirosh of Chicago, died on January 25, at the age of fifty-six years. He was born in Kovna, Russia, and was graduated from the University of Konigsberg in 1876, and from the Imperial University, St. Petersburg, in 1878. He went to Chicago fourteen years ago and was interested in several Hebrew dispensaries and hospitals.

Dr. John W. Long of Bryan, O., died on January 23, at St. Joseph's Hospital in Chicago, after an operation for an affection of the throat, at the age of seventy-one years. He was graduated from Bellevue Hospital Medical College in 1864, and served for a time as acting surgeon at Fort Ruby, Nev.

Dr. Alfred S. Patrick of Charleston, W. Va., died on January 23, at the age of seventy-four years. He was graduated from the Medical College of Ohio in 1853 and continued in practice until the beginning of his last illness, four weeks before his death.

Dr. John Slade Ely, Professor of the Theory and Practice of Medicine at Yale University, died on February 7 from injuries received in being thrown from his horse which was startled by an automobile. He was born in this city in 1860 and was graduated from the Medical Department of Columbia University in 1886. He studied in Europe for some time, returning to become assistant in pathology in the College of Physicians and Surgeons. He was pathologist to the first medical division for Bellevue Hospital from 1889 to 1897. In 1897 he left New York to accept the chair of Theory and Practice at Yale.

Obituary.

GEORGE RYERSON FOWLER, M.D.,

BROOKLYN, N. Y.

Dr. George R. Fowler died in Albany on Tuesday of this week, following an operation for appendicitis. He was taken ill on the train while on the way to Albany two weeks ago to attend a meeting of the State Board of Medical Examiners, and also to be present at the meeting of the Medical Society of the State of New York. Soon after his arrival symptoms of appendicitis developed, and the patient was removed to the hospital for operation. This was apparently successful, but at the end of four days intestinal paralysis developed and death followed.

Dr. Fowler was born in this city on Christmas Day, 1848, and was graduated from the Bellevue Hospital Medical College in 1871. During the Spanish War, in 1898, he served as surgeon of the Third Division of the Seventh Army Corps with Gen. Fitzhugh Lee. Later he acted as consulting surgeon and chief of the operating staff of the Seventh Army Corps, accompanying General Lee to Havana. He organized a system of hospitals for the use of disabled soldiers. He was surgeon to the Methodist Episcopal Hospital, surgeon-in-chief of the Brooklyn Hospital, senior surgeon to the German Hospital, and consulting surgeon to St. Mary's Hospital, the Relief Hospital, and the Norwegian Hospital. He was examiner in surgery of the New York State Board of Medical Examiners.

Dr. Fowler was strangely enough known as a special student of abdominal surgery, and of appendicitis in particular, and was the writer of an authoritative treatise on the subject, first published in 1894, and in a revised edition in 1900. He was also the author of numerous journal articles on surgical topics, and enjoyed the reputation of a skilful and successful operator.

Correspondence.

THE MEDICAL DISCOVERY OF OLIVER WENDELL HOLMES.

A LESSON IN MEDICAL HISTORY.

To the Editor of the Medical Record:

Sir:—The Medical Record of November 25, 1905, contains an editorial on the above subject which calls attention to the deplorable fact that "most of us have forgotten, if we ever knew, that he had claims to the gratitude of the world as a life saver and a medical discoverer." The Editor appropriately comments, "we hope that this epoch-making essay will be published in a form more accessible to the American reader."

This incident is a sad illustration of the neglect of Medical History in the curriculum of our colleges. Every child is taught the important events and discoveries of American soldiers and statesmen and his patriotism is nurtured by the recital of deeds of heroism and devotion to duty. Would not the neophyte in medicine be equally stimulated to research and to patriotic pride in the scientific achievement of his country by the knowledge of the fact that a discovery for which a monument has been erected to a Hungarian physician was antedated by an American physician five years or more?

In an address delivered before the Section on History of the Congress of German Naturalists and Physicians at Carlsbad, September 22, 1902, on "Some American Contributions to the History of Modern Therapy" (published in *Janos*, November and December, 1902, and in the *Therapeutic Gazette*, February, 1903), I dwelt with pride on this notable discovery of our own Holmes and I was astonished that in that assemblage of professors and instructors on Medical History in the German and Austrian Universities not a single voice was raised in defense of the claim of Semmelweiss, of whom I said: "Far be it from me to take aught from the man who introduced the idea successfully in Europe. To the unfortunate Semmelweiss is given the credit of being the pioneer in urging the importance of prophylaxis in this terrible scourge. When it is remembered that his mind was wrecked by the criticisms he encountered, even the most truth-loving historian must pause ere he would snatch one leaf from the laurel-crowned brow of this self-sacrificing man. Nevertheless historical justice demands that the claims of an American physician be recognized, whose views antedate those of Semmelweiss by five years, as can be established by irrefutable evidence." The latter was clearly set forth in my essay without being called in question *until after* adjournment. Then I was approached by two gentlemen, one an instructor in History of Medicine in Vienna, the other in Budapest, who asked me if I were sure of my dates and if my sources of information were reliable. On their request I submitted the manuscript to them for careful perusal. Its return was accompanied only by formal thanks. In the November, 1902, number of the historical Amsterdam journal *Janos*, my claims for Holmes were disputed by Privat Docent von Györy, of Budapest, in an essay which "does credit to the polemic ability and patriotism of the author," but only established the fact that I was in error in assuming that Semmelweiss had himself published his views in 1848 and that he really did not do so until 1861 (Die Aetiologie, der Begriff und die Prophylaxis des Kindbettfiebers). Thus was added and established by the defender of Semmelweiss an historical fact that Holmes really antedated Semmelweiss *eighteen* years, in the publication of his valuable discovery. Another historical fact was inadvertently brought out by von Györy, who stated that "His (Holmes') prophylactic measures were the same as those of the English." Semmelweiss knew them quite well, it seems, for he wrote (loc. cit., p. 146), "The English never visit a healthy pregnant or parturient woman without previously washing their hands with chloride of lime," etc. The latter practice, it may give some historical interest to this communication to state, was first used in our country in 1835 by a friend of Holmes, whose name he suppresses, but whom he quotes as having lost five cases of childbed fever and "not having encountered a single case of this terrible disease since he had adopted the practice of washing his hands in chloride of lime solution before introducing his finger into the vagina." We may therefore justly add to our claim for priority the discovery of *manual asepsis* in midwifery by an American in 1835. Owing to the meager literary interchange of thought, this fact, Holmes' great discovery, was not noticed by even the most progressive men of that time. The history of the controversy and defense of Holmes against the criticisms which, alas, degenerated into unseemly attacks by some leading obstetricians of his time, may also serve as a lesson of the hideousness of professional jealousy and self-interest on the one hand and of the beauty of Holmes' tolerance, of his sympathetic love of his kind, and of that truly poetic spirit which actuated him even in the chamber of sickness and death. What a lesson is conveyed in these noble words, quoted from his monograph, "Puerperal Fever as a Private Pestilence," published by Tickner and Fields in 1855? "The subject has the same profound interest for me at the present moment as when I was first collecting the terrible evidence out of which it seems to me the commonest exercise of reason could not help shaping the truth it involves. I have abundant evidence that it has made many practitioners more cautious in their relations with puerperal females. For my own part I had rather rescue one mother from being poisoned by her attendant than claim to have saved forty out of fifty patients to whom I have carried the disease. . . . I take no offense and attempt no retort. No man can make a quarrel with me over a mother with a new born baby at her breast! There is no epithet in the vocabulary of slight or sarcasm that can reach my personal sensibilities in such controversy. I appeal from the disparaging language of the professor in Philadelphia to the recorded opinions of those whom I do not know, and who do not know me, nor care for me, except for the truths that I may have uttered, to Copeland, who has spoken of my essay in phrases to which the pamphlets of American scribblers are seldom used from European authorities; to Ramsbotham whose compendious eulogy is all that self-love could ask; to the fifth annual report of the Registrar General of England, in which an abstract of my essay figures largely, and not without favorable comment. I will take it for granted that so far they have counterpoised the depreciating language of my fellow countrymen and teachers. The teachings of the professors of the two great schools in Philadelphia are sure to be listened to not only by their students, but by the profession at large. I am too much in earnest either for humility or vanity, but I do entreat those who hold the keys of life and death to listen to me also for this once. I ask no personal favor, but I beg to be heard in behalf of the women whose lives are at stake, until some stronger voice shall plead for them. If the doctrine I have taught is a mournful truth, if to disbelieve it and practise on this disbelief, and to teach others to disbelieve and practise, is to carry desolation into confiding families, let it be proclaimed as plainly what is to be thought of the teachings of those who sneer at the alleged dangers and scout the very idea of precaution. . . . The pestilence carrier of the lying-in-chamber must look to God for pardon, for man will not forgive him."

The dignified and solemn language of Oliver Wendell Holmes stands in painful contrast with that of his ironical but influential critics.

Another lesson of history which may be learned from this episode is the sad fact that while Holmes, the discoverer of a positive life-saving idea and practice was ridiculed in his own country by the highest authorities, among them the man who taught him midwifery and who should have been proud of the achievement of his disciple, in Europe Semmelweiss was not only ridiculed but persecuted for the same discovery by the most eminent obstetricians, among them his own teacher.

History often repeats itself. Was not Paracelsus von Hohenheim ridiculed by his contemporaries and by them handed down to posterity as a quack and pretender? And he was a man of whom the noted historian Ranke has written, "In him lived a spirit ingenious, profound, and endowed with rare knowledge." While his vanity and habits made him many enemies and his alchemistic doctrines betray only the spirit of ignorance, which was the prevailing characteristic of his time, his writings display true medical intuition in that he foreshadowed in that period of darkness and therapeutic spoliation the very truths which govern us of this advanced time. He wrote: "When disease attacks the body, all the healthy organs must combat it, for disease tends to kill them all." That which Hippocrates termed "vis medicatrix naturæ," Paracelsus termed "the inner alchemist." He proclaimed boldly what the doctor of this time rarely ventures to assert: "Nature is te physician, not you. Since I saw that the doctrines of the ancients have accomplished nothing but the making of corpses, death and deformity and decay, I was compelled to pursue truth by another way." This was a scathing arraignment of his colleagues which they naturally resented and thus the truths he proclaimed were disregarded. Whatever the failings of this man as an individual, history accords him a realization of the therapeutic aims which the physician of the present time accepts without cavil.

Other historical instances of this unfortunate tendency are seen in the treatment received by Brissot, Harvey, Audin-Rivière, and others. Brissot was a French physician of great learning and logical acumen, who insisted that "inflammation does not always demand venesection, because the power of nature, which always aids the diseased organism, may produce salutary congestion." He opposed general bleeding so earnestly that he was driven from

Paris. He died in Portugal a martyr to his love of truth, amid the maledictions of his confrères. When Broussais and his brilliant pupil Bouillaud sought to remove most diseases by bloodletting *coup sur coup*, a courageous dissenter arose in Audin-Rivière, who was a professor of Hygiene in the Lycée de Paris. A follower of Hippocrates, he scourged with the lash of brilliant rhetoric sustained by logical statistics and observations at the bedside, the spoliative practice of Broussais which had become general and literally "out-Heroded Herod." He related a mild epidemic of smallpox in 1824 in which 1,136 persons died, nine-tenths of whom had been subjected to repeated bleedings. He stated that Dr. Frappart had ordered 1,800 leaches for one patient. He was haled before the courts which mulcted him in the sum of 500 francs damages and prohibited his book. The discoverer of the greatest truth in medicine—the circulation of the blood—the justly renowned Harvey, was persecuted by reason of his teachings and lost his practice in London; his work was refused censorship in England and was printed in Frankfurt in 1628, after having been prohibited in Paris.

The lessons of humility and tolerance are constantly repeated in the history of medicine as in the history of the world. The former should be taught, as is the latter, at least in concise and assimilable form.

Simon Baruch, M.D.

New York.

THE FEE QUESTION.

To the Editor of the Medical Record:

Sir:—I read with much interest and some sorrow the article on the fee question signed by Dr. Robert T. Morris, in your issue of January 6, 1906. I did not like to see published such a statement as this which appears in the letter from Dr. G., published by your correspondent, and of which he approves: "The revenue of the medical profession has not increased at all in proportion to the revenue of the lawyer, the artist, or the artisan." The physician's fee should not be measured by that of the lawyer, nor, in my opinion, should it be measured by that of the artist or artisan. Great corporation lawyers have enormous fees, and connected with these there is not infrequently much that is wrong from many points of view. Lawyers are, no doubt, personally as kind and helpful as members of other professions, but their profession as such never was, and in the nature of things, never can be, the center of anything like the large and noble charity work that distinguishes the profession of medicine. The medical man has an ethical relation to the suffering of this world that no lawyer, as a lawyer, can ever sustain. The doctor is the trusted friend and confidant who enters unchallenged the sacred inclosure of domestic life. He takes rank not with the lawyer, but with the clergyman, and it will be a sorry day for the medical profession and for humanity when physicians come to view their financial relations with a sick and dying world through purely legal eyes. I was educated to both professions—that of medicine (Coll. Phys. & Surg., New York, 1870), and that of theology (Theol. Sem., Reformed Church in America, New Brunswick, N. J.), and I think I understand something of the difficulties of both the practitioner and the preacher; and I understand, as well, how close is the tie that unites, or should unite, them both in one fellowship of compassion and self-sacrifice. I am acquainted with many good lawyers, some of them are my personal friends, and many have been in past years my trusted parishioners, but as a profession law never called for the heroism and unselfish living that are part of the life of every true physician. I do not wish to be understood as in anywise criticising the fee named by your correspondent for the work which he described. For anything I know to the contrary, it was just and reasonable. But I do protest against introducing the advance in lawyers' fees as in any way related to the amount of compensation a physician may expect. A lawyer may work from purely mercenary motives and be a very good lawyer, but a physician moved by such motives alone could not be either a good man or a good physician.

Frederic Rowland Marvin, M.D.

Albany, N. Y.

THE FEE QUESTION.

To The Editor of The Medical Record:

Sir:—My attention has been directed to Dr. Robert T. Morris's correspondence, published in your issue for January 6, with a recalcitrant lady of his clientele, upon the ever-sensitive subject of our fees; and using the particular instance in point as a text, he preaches an admirably good-tempered little sermon.

It seems to me that the interest of the profession in Dr. Morris's correspondence gives a peculiar appositeness just now in the publication of the accompanying essay—which for lack of a better term we may entitle "The Business End of It," or perhaps "Fees and Fee Bills."

Written some little while ago, a time of especial fitness has been awaited for giving it forth. Let me hope that this is the appointed hour.

It has occurred to me that, as being almost the only topic of vital interest to a physician commonly ignored in our medical journals, this one may be worthy of a few minutes' thought. Perhaps we might call it "The Doctor's Obligation to His Family." First of all, we are medical men. But in the second place we are necessarily business men, too, and as a rule with families to support, to educate, and later to start in life. And the very practical questions when to present our bills for professional work, and upon what principles of equity to fix the amounts to be charged, deserve our attention.

There are still gentlemen who feel that these matters are unworthy the noblest of professions; that the "honorarium" (guineas delicately enclosed in an envelope and placed upon the table without comment on either side) and also the legal disabilities which, in England at least, still handicap the physician who endeavors to compel collections against dishonest patients, still constitute the right and proper condition of things; and that it is degrading to us to enforce our rights. But an increasing majority differ from this old-world view; feeling that to demand in all frankness what we have earned is no more unworthy of our dignity than it is derogatory to the dignity of the legal profession. The cases seem to me "on all fours," as the lawyers say. Even to-day the doctor's bill is among many families habitually considered last of all; nor is this surprising. One is reminded of the deacon of accumulative instincts who, upon being reproached with his systematic neglect of the contribution-box, explained that the Lord did not press him so hard as did his other creditors! The moral is not hard to draw.

As a very young practitioner I sent my bills four times a year, upon the first day respectively of March, June, September, December. This was a distinct improvement upon the method of my grandfather, who, like most of his generation, presented bills only when he was pressingly in need of money. And as to two of these four equidistant dates, the choice proved of practical value. December 1 means that the doctor's bill will stand a chance to receive prompt attention, whereas a month later it would be lost amid those arriving thick as snowflakes upon January 1. Again, June 1 is a desirable date, for then one may chance to receive his money, whereas a month later it is in hopeless competition with summer hotel bills, *et id genus omne*.

But after some years of experience it was decided to render accounts upon strict business principles, the first of each and every month (except during the continuance of a case), and to have engraved upon the billheads, "Bills presented monthly"—by way of indicating that nothing invidious is to be inferred by the patient in any instance.

In no case has this plan induced death from heart-failure at the shock of finding the physician to be also a man of business. On the contrary, I am satisfied, after many years of trial, that my patients—the honest ones, who are a great majority—prefer this plan. Should an error in bookkeeping arise, it enables them to go back in memory over the brief interval since the preceding bill, and correct it. Moreover, it is unquestionably easier for them to pay, and for the doctor to collect, ten dollars twelve times a year, than a hundred and twenty dollars once a year—or even than thirty dollars four times a year. And further, we should remember that gratitude, like alcohol, though a heart tonic, is volatile; and we should use it while it lasts.

Most doctors are their own bookkeepers. As a class, they do not earn their salary as such, and should discharge themselves. The tired, overworked practitioner will always postpone until that more convenient time, which so seldom comes, this particularly unpleasant duty. I believe that it will pay all, except those just beginning and hence with very small practices, to hire an accountant by the year, turning over to him the pocket day-book at the end of each month, and giving him a schedule of prices for certain work, as a general guide. There are hundreds of bookkeepers who will be glad, in return for a trifling sum earned outside of their business hours, to do this work. The bills thus prepared are to be examined in review, just before mailing, by you, in the accountant's presence. He may also be willing, for a moderate percentage, to attend to collections requiring the gentle admonition of a personal call.

This naturally brings up the further question

as to the size of our fees—which needs agitation, if ever a topic did. Even the best brains of our profession are not paid as they deserve to be, and as—for example—eminent lawyers are. Take the instance of Senator Conklin. Being an honest man, he left the United States Senate in debt. But within the few years elapsing between then and his death, in consequence of the great blizzard, he had through legal fees cleared himself, and left a fortune of more than $100,000. Such a thing would be an utter impossibility with us. And yet, in consideration of the good accomplished by our ablest men, and of the awful, the crushing responsibility of life or death sometimes upon our shoulders, no fee is high enough. It is a ludicrous mental and moral obliquity to hold, as I have heard urged, that such work is beyond all price, and that this is why even their wealthy patients cannot attempt to compensate them for it! I regard our greatest physicians as invariably underpaid. If, by some simple suggestion—but born of genius wedded to experience—a brain is saved from insanity by the neurologist, a mind that otherwise must have entered oblivion, then a fee of a hundred thousand dollars, in the case of a millionaire, would be small indeed for that work. The specialist would, in that case, still be underpaid; he would still deserve our commiseration; but not so much so as usual!

In most such instances that brain specialist is indeed lucky if he adds a twenty-dollar fee to his slender bank account. And were he to charge a tithe—a mere vulgar fraction—of the first-named sum, that patient, the man of wealth, would use his restored mentality in devising lurid invectives to fit this peculiarly atrocious case of robbery! On the other hand, an able consulting *lawyer*, who should win some great transcontinental railway suit for this same millionaire by raising some shrewd legal point, would name, with calmness, a fee of five or even six figures, and it would be paid as a matter of course—and without unseemly wrath. Who shall say that this picture is overdrawn?

As to the rank and file of the profession, we exhibit our lack of business ability and invite the contempt of the ungodly in nothing so much as in our failure to combine for mutual protection against miserably insufficient prices for our work, as also in our lack of cordial mutual support. I have small patience when I hear, as I have repeatedly done, the argument used that we should charge all people alike, without regard to their financial condition; that if we charge Mr. Smith $50 for setting a broken bone, we have no right to charge Mr. Jones $500 for the same thing. Still less do I rejoice and give thanks when the speaker is a doctor, who maintains that the brother-physician, in the instance of a given wealthy patient, whom he has cured, has "overcharged"!

Let me illustrate by a parable. The Emperor, William I, of Germany, was fond, like Haroun al Raschid, of the "Arabian Nights," of mingling among his people unknown—or thinking himself so. Once upon a time, while wandering at night through a crowded market place he priced the eggs offered by a certain old woman. Startled at the sum she named per dozen, he exclaimed, "Can it be that eggs are indeed so high as a mark a piece?" To whom returned the *handelsfrau*, "Nay, your Majesty, eggs are plentiful enough; it is *Kings* who are scarce!"

Now, all can see the gross injustice herein attempted upon an inoffensive and harmless monarch. But the fable, as I maintain, presents a parallel with our case. We are not selling our brains over a counter to all comers indiscriminately at so much per think or per dozen thinks. The Smith-Jones argument above mentioned comes with ill grace when directed against a profession which serves the poor without money and without price, to such an extent that a huge proportion—perhaps not less than one-fourth of the population of the great city of New York—receive their medical attendance free. Those who can pay, should therefore, it would seem, do so somewhat in proportion to the extent of their means; at least for operative and for consultation work involving unusual experience and ability.

This principle of a graded scale of charges is certainly the one approved of by the legal profession; the difference being that we have less of the courage of our convictions than have they, in carrying it out. For example, most of us would not assess a poor clerk for expert work as much as we would charge a millionaire for that same service. This fact being admitted, the principle just asserted is also admitted. And logically, if we charge that clerk (let us say) one dollar, as a bill for our services, we should charge the man of money many thousands for the same thing, in order to maintain the same proportion. This is not always feasible; but let none of us who admit that we do not have an identical fee-bill for wealth and poverty alike, assail our more logical and consistent brothers who charge somewhat in real proportion to means as well as to the good accomplished. And let none of us do that shabby thing so common in our profession of intimating that a given fee is too high, and that we, if called, would have charged less!

One further point, often neglected: the family doctor can better judge than the man whom he calls in consultation, as to the patient's fortune, and therefore as to what would constitute a fair fee in a given case. It is a wise custom for the specialist to submit his proposed charge first to you who called him in, and to be guided by your decision in this matter. Should the operator offend the patient by the size of his bill, the doctor who has recommended him may suffer a vicarious punishment from the subject, subsequently. Therefore, the arrangement just named seems but courteous to the family attendant.

It has long seemed to me that much good would result if in all our medical schools one of the professors would address the graduating class upon the eve of their leaving their *alma mater*, giving a little lecture full of kindly advice upon just such practical topics as these now under discussion. The average income of our profession is undoubtedly pitifully small. If this were better known its ranks would not be so crowded. The more reason why we should help these young men, about to encounter much competition—at least in town—to avoid certain financial blunders which most of us have committed, because uncounseled. It might even be well to point out the unwisdom of speculation—as with time the question shall arise how best to invest their hard-earned dollars. The young doctor can in most cases take no wiser step than to endeavor to buy the house in which he lives, making steady if small payments upon the mortgage. Real estate cannot take unto itself wings.

Advice coming from the lips of a professor to whom these lads look up with a real reverence—as is often the case—would be apt to be followed implicitly; for "just as the twig is bent the tree's inclined." It would earn their subsequent and lasting gratitude; and by inducing sensible business methods, and even concerted legal action in certain localities, for mutual protection in financial matters, would compel a respect in others for our calling as being one eminently worthy the best treatment, rather than as now often the worst, at the hands of a business community.

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OUR LONDON LETTER.

(From our Special Correspondent.)

THE GENERAL ELECTION AND MEDICAL CANDIDATES—ANNUAL MEETING OF THE GYNECOLOGICAL SOCIETY—COLOTOMY—TORSION OF THE OMENTUM—BIRTH RATES—PUERPERAL FEVER—NURSES AND REGISTRATION—OBITUARIES.

LONDON, January 19, 1906.

ALL the week we have been engaged in the excitement of a general election. You will have learned from day to day many of the surprises that have occurred, which have brought about a complete change in the position of parties. Although the usual prophecies of success were made by partisans, it is certain that both victors and vanquished are amazed at the decisive result. No one seriously pretends to any other conviction. The position of the profession in the new House of Commons is at present uncertain, but we do not expect very much. Hopes are expressed that from six to ten doctors will obtain seats. Almost the lower figure has already been reached. There has been some heart-searching among political doctors as to whether they should vote for one of their profession, irrespective of his party views. Yet, while other classes are working to obtain representatives, it seems but natural that we should follow suit—especially as questions of sanitation and other matters on which skilled advice is urgent, are sure to arise.

The British Medical Association has submitted to candidates a series of questions, and thereby has elicited a number of promises to support the measures it has brought or will bring forward. Perhaps such a proceeding may prove important as showing that the general apathy of the profession must not be too implicitly trusted by members of the new Parliament, but it is hardly desirable that the association should be thought to be quite representative of the medical world. It has too often done what we cannot approve. Moreover, at first the new government seems likely to be so strong that it will be as indifferent as its predecessors to medical opinion.

The annual meeting of the British Gynecological Society was held on the 11th inst. The treasurer's report and balance sheet showed the prosperity of the society continues, and a hearty vote of thanks was accorded him. A report was also presented by the editor of the *Journal and Transactions*, which elicited equally cordial thanks. Mr. Jessett,

in proposing this vote, said that under Dr. Macan's editorship the *Transactions* had become a classical work, not only on account of the original papers and record of the society's work, but also through the abstracts and reviews of gynecology in America and on the Continent, and the contributions of foreign authorities. Votes of thanks were also accorded to the auditors and honorary secretaries, and the election of officers for the year was taken. Mr. Bowerman Jessett, who occupied the chair in 1893, was elected president for the year.

At the Clinical Society on Friday, Mr. Lawrie McGavin read a paper on colotomy, in which he pointed out the disadvantages of both the lumbar and iliac operations, and advocated the plan of opening the transverse colon as the routine operation. This he considered gave a firmer support for the belt and plug, less liability to prolapse, rendered the operation more simple, owing to the mobility of this part of the bowel and the increased ease with which a sphincter can be obtained. He also said the position of the new anus was better for the more comfortable evacuation of the bowel, and the transverse colon could more easily be reconstituted should occasion arise. Out of four cases of iliac colotomy, difficulty of control and prolapse had been complained of in three, in spite of belt and pad. Notes of three cases by the transverse operation were read. In all the control was good, prolapse absent, and the general comfort greater than average cases by the iliac plan. He thought further improvement might be effected by dividing the bowel, closing the distal end and drawing the proximal through a broad band of fibers from the rectus muscle and suturing it.

The president, Mr. Clutton, said that nowadays he never met with prolapse after inguinal colotomy, and did not find any apparatus necessary. As to utilizing the rectus, that was the rule in iliac operations.

Mr. Harrison Cripps said he had performed above six hundred inguinal, but only about a dozen transverse colotomies. He agreed that the lumbar method was obsolete. The after difficulties of colotomy were (1) prolapse—a rare occurrence at the present day, as it could be prevented by not making the wound too low, insuring no slack bowel was left above the wound, and making the opening the right size. (2) Retaining the fecal matter. The point was to obtain sufficient solidity, the contents in this respect differing between the transverse colon and the sigmoid. (3) Decomposing mucoid secretion in the distal part, which occurred in 20 or 30 per cent. of the cases. In inguinal colotomies this could be treated by syringing through, but this was impracticable in transverse colotomy, which last, he thought, should only be performed when the obstruction is too high to permit the iliac operation.

Mr. Openshaw agreed with the last speaker, and would resort to the transverse operation only when the obstruction was in the splenic flexure.

At the same meeting Messrs. Pinches and Corner reported two cases of torsion of the omentum complicating inguinal hernia—a rather rare event, as only fifty-five cases have been previously recorded. Mr. Clutton discussed the significance of strangulation and torsion. Mr. Forbes Ross did not think the diagnosis from appendicitis important, as the operation would show the condition. Mr. Spencer thought there was no a priori reason why torsion should not occur; he had met with it in femoral hernia. How was the diagnosis arrived at?

Mr. Pinches replied, by finding an inflamed hernia with extensive tenderness of the abdominal wall in a patient previously the subject of a freely-moving hernia.

No little fuss has lately been made about the decline of the birth rate. The press generally regards it as another indication of our degeneracy, but a few enthusiastic malthusians hail it with satisfaction. The subject has been discussed by the Royal Statistical Society from a different point of view. Drs. A. Newsholme and T. H. C. Stevenson contributed a paper introducing corrected birth rates, making allowance for the fact that some populations included more wives at child-bearing age than others. This corrected rate gave very different figures from the "crude" rate; *e.g.* the birth rate of Ireland in 1903 was 23.1, a little higher than that of France—21.7. But the French rate was practically unaltered by correction, whereas the Irish rate was made 36.1. This was attributed to the fact that, though both countries had about the same proportion of women aged 15 to 45, the proportion of these married was 52.5 per cent. in France and 32.5 per cent. in Ireland. A study of statistics of other countries showed the authors a decline of fertility generally to the extent of 17 per cent. in England and Wales, 18 per cent. in New Zealand, 24 in Belgium and Saxony, 25 in Victoria, and 33 in New South Wales. The actual present birth rates were also examined and led the authors to conclude that a decline is associated with a rise in the standard of comfort in a community—a determination of people to secure this comfort. They had no hope that any nation—in the absence of overwhelming moral influences—would be left behind in this race to decimate the race, and they anticipate a deterioration of the moral, if not also the physical, nature of mankind.

The foregoing paper was followed by another by Mr. G. U. Yule, who compared the fertilities of married women in different districts of London in 1871 and 1901. In the upper-class districts the fertility dropped about 20 per cent., while in the lowest it was practically unchanged. It must, however, have fallen among the working classes generally, as the fall in the upper-class districts was little more than in the country at large. The fluctuations in the birth rate, as in the marriage rate, appear to correspond with the cycle of trade and industry. The movements of the marriage rate are more irregular than those of the birth rate. The fall in the latter is associated with a fall in prices.

An object lesson comes from Manchester, where the isolation hospital admits cases of puerperal fever. According to a paper by Dr. Gordon, out of thirty-seven such cases, twenty-three had been attended by midwives and fourteen by medical men. In the midwives' cases, symptoms set in from the fourth to the eighth day, and there had been no operation. In all the microbe was the bacillus coli. In the doctors' cases, symptoms set in generally within forty-eight hours and there had been operative interference. In these the organism was a streptococcus, mixed occasionally with the bacillus coli.

The Nurses' Association has held another meeting in support of registration. The spectacle-makers, having set up as sight testers, are demanding a similar degree of recognition and protection. At this rate we shall soon have every form of quackery and imposition asking for state registration and selling diplomas.

Mr. J. H. Ceely of Aylesbury (where he was surgeon to the hospital from 1832 to 1882) died in London on the 25th inst., aged 96. He was a London Hospital man. He took L.S.A. in 1830, M.R.C.S., 1832, was elected to the fellowship, 1852, where he had obtained a high position as an operator in Buckinghamshire.

Surgeon-General Sir Joseph Ewart, Ph.D. St. And., F.R.C.P., died on Wednesday at Brighton, where he lived after retiring from the army, and took a great interest in all public matters. He was three times mayor of Brighton, consulting physician to the Alexander Hospital for Children, and held other medical appointments. He belonged to the Indian Army and served in the mutiny. He had been professor and senior physician in the Calcutta College Hospital, examiner and principal in the university, and he was also editor of *Indian Annals of Medical Science*, and author of many papers on Indian mortality, tropical diseases, snake poisoning, and other topics within his extensive experience. His first diploma was dated 1853.

Lieut.-Col. C. S. Close, R.A.M.C., retired, died on the 30th ult., aged 68. Dr. Kershaw of Leeds died on the 4th inst.

Dr. Wm. Graham, J.P., M.O.H., for Middleton, also died on the 4th, aged 51. He graduated at the Royal University of Ireland in 1883. He wrote on public health questions, was a D.P.H. of Victoria University, and a zealous sanitarian.

Dr. H. Campbell Pope died suddenly on the 2d inst. He had served as president of the West London Medico-Chirurgical Society, of which he was one of the founders. He took M.D., London, 1878; F.R.C.S., 1876.

The death is also announced of Dr. Thos. R Adams, J.P., consulting surgeon Croydon General Hospital and one of its founders.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

GARDENING AS A PLAN OF TREATMENT—A MEDICAL ELECTION—OXYGEN IN SURGICAL DISEASES—TUBERCULOSIS AS A HOME DISEASE—RENAL TUBERCULOSIS—RESECTION OF THE FIFTH NERVE.

BERLIN, January, 20, 1906.

ALTHOUGH the originator of the idea of treating various diseases by having the patient engage in garden work is perhaps rather too sanguine in his expectations, the results obtained in this way at least deserve mention. Fifty-one patients suffering from anemia, neurasthenia, chronic gastritis, constipation, chronic bronchitis, and acne were treated in twenty-six gardens. Only thirty-one patients worked regularly during an entire month, the others in some cases continued the treatment a little longer, but in most instances it was carried out for a shorter period. Seven patients out of eighteen with anemia, and eight out of thirteen with neurasthenia were greatly benefited. The gardeners' unions have objected to the plan on the score that its popularization would cause a weak type of individuals to become gardeners who would also be willing

to work for a less compensation than the regular workmen. These objections, however, have but little force, for the work is not only exacting but also has other disagreeable features, and patients would scarcely be able to work continuously as is required of regular gardeners. The conclusion is that the treatment by garden work is satisfactory and yields good results, but its efficiency depends on the nature of the patient's affection, his natural ability, and other circumstances such as the weather, the distance that must be traversed to reach the garden, etc.

Considerable interest has recently been excited by the elections for the Aerzte-Kammer. A few words will suffice to indicate the importance of this. Every province of Germany has its own chamber, the members of which, numbering forty in Berlin, are elected by all the physicians of the province. The government officially recognizes the organization by delegating a representative to attend at each session and in addition accords certain privileges to it. Every physician is legally obligated to give a part of his income to the body, which in this way accumulates a fund for the purpose of assisting needy physicians or their families. The organization is further empowered to censure or to impose a fine up to the sum of 2,000 marks on any physician whose conduct is derogatory to professional honor. At the recent election all of the medical societies seemed to be in accord in regard to the nomination of candidates, when suddenly another ticket was submitted comprising a list of physicians for the most part entirely unknown to the medical world of Berlin. On investigation it was found that this ticket was backed by a very small fraction of the medical body who in opposition to nearly all German physicians wished to restrict the treatment of lodge members to a few physicians, members of the "Verein fixierter Kassenaerzte." It appeared that this association had acted in connection with some of the large Berlin lodges in order to deprive many of the profession of a large source of income by the selection of other candidates, but although for a short time it seemed as if the second ticket was not without chances of success, at the final election the first ticket was carried by a great majority.

Wohlgemuth, in a paper entitled "Sauerstoffinjectionen bei chirurgischen Infectionskrankheiten," head before the Medical Association, describes a new treatment of septic processes. The use of oxygen in surgical diseases is old but it has never been followed by any remarkable effects. The speaker had developed the plan of injecting oxygen gas into the tissues in cases of inflammation, especially those caused by anaërobic bacteria. Furuncles, carbuncles, septic wounds, panaritia, and phlegmons, which usually required long courses of treatment were quickly cured by oxygen gas. The secretion of purulent sinuses could promptly be checked by daily treatment with oxygen, and the burning pain in infective bruises soon ceased. In panaritium and cellulitis large incisions were unnecessary if the wound were treated with oxygen through a small incision and the gas injected into the surrounding tissues. The most surprising effect was to be seen in the treatment of furuncles which were often cured in one session. One disadvantage pertained to the method, however, as the injections were rather painful. The technique was very simple; a small cylinder of 100 c.c. capacity was filled with oxygen at a pressure of one hundred atmospheres and provided with a rubber tube ending in a sharp or blunt needle. The pressure best adapted for the purpose was of such a degree that when the stream of gas was allowed to escape under water it appeared to make it boil. The needle was inserted into the tissues about the furuncles until these had been entirely encircled.

A paper of great interest regarding the principles of tuberculosis treatment was read by De la Kamp before the Society for Internal Medicine; its title was, "Tuberculosis Sanatoria in Relation to Home Life." The speaker had examined the families of tuberculous patients who had been in the large sanatorium at Grabowsee. Seven hundred and fifty families were examined and it was found that 246 wives out of 573 were suffering from tuberculosis; of the remainder whose lungs were in good condition 158 were the victims of other diseases; of 1,340 children examined 656 showed signs of tuberculosis, at least in regard to glandular involvement. The examination of 85 patients formerly treated in this sanatorium showed that 76 were in a condition to require readmission and in 5 of these the disease had progressed. There is no doubt, however, of the value of sanatorium treatment, as the disease appears to run a more benign course in such patients than in others. It is apparent that tuberculosis is a "home disease" and that one of the most important features lies in the education of the patients as conducted in the sanatoria. The best means of combating the disease is to contribute large amounts for the reform of lodging conditions among the poor. To cure the father without curing the family is only half a cure.

At a recent session of the Medical Society Israel demonstrated the wealth of the material available in his hospital. Sixty-six cases with primary renal tuberculosis were discussed by Rosenstein in a paper entitled "The Minute Anatomy of Renal Tuberculosis." The speaker distinguished three varieties, (1) the caseo-cavernous form, (2) tuberculous ulceration of the point of the papillæ, (3) diffuse tuberculosis. He did not recommend exploratory laparotomy in doubtful cases as exact diagnosis was impossible without dissecting the organ. It was possible that in the course of time it would become practicable to resect only the involved portion of a diseased kidney without extirpating the whole organ. Neuhauser reported on other cases operated on by Israel. Of 102 cases of renal tumor 68 were hypernephromas, the others sarcomas, carcinomas, and mixed tumors.

The general practitioner found much of interest in a paper by Gege read before the Berlin Surgical Society and dealing with the results of peripheral resection of the trigeminal nerve. The author reproduced the operative statistics of Fedor Krause. Out of seventy cases operated on five suffered from symptoms of hysteria, which in four cases were aggravated after the operation. Replies concerning their condition were obtained from fifty-five patients. Three and a half years after operation eleven patients remained free from attacks but all the others suffered from a recurrence after, on the average, twenty-six months; but even in these cases great improvement was noted because the attacks were of a more favorable nature and were more easily controlled by other antineuralgic remedies than had been the case before the operation.

Progress of Medical Science.

Boston Medical and Surgical Journal, February 1, 1906

The Sanitary Importance of Clean Milk.—C. Harrington declares that ordinary market milk is almost everywhere a polluted, dirty food. It contains large numbers of bacteria, due to disease or lack of care in production, storage and handling at the farm, during transportation, and in the home. He describes the various modes of contamination from the time milking begins until the milk is on the table of the consumer. One very common infecting agent is Klein's *Bacillus enteritidis sporogenes,* which occurs in horse (not cow) manure, and is constantly being blown about in city air. Another cause of intestinal disease lies in the streptococci and other organisms contained in the pus contributed to the milk of cows suffering with garget, which is the most common of cattle diseases. Not only is bad milk injurious to young children, but it is injurious also for invalids and convalescents. In Massachusetts, dirty milk causes more typhoid fever than does polluted water. As regards the tuberculosis question, it is clear, in view of the evidence now at hand, that tuberculosis, especially of the digestive tract, can be and is transmitted by such milk, especially if the disease in the cow has become localized in the udder. It is difficult to arouse public sentiment on this question, but the remedy is simple. We should insist upon clean milk and be willing to pay for it; encourage the production of a sanitary supply, and refuse to buy excrement and pus; buy of the man whose supply costs a cent or two more per quart to produce, and let the sloven learn that cleanliness is an asset and filth a heavy load to carry.

A Report of Two Cases of Erythema Multiforme Desquamativum.—The cases are reported by P. K. Brown, who refers to Osler's collection of twenty-nine previously recorded cases. Of these two patients, one had gastro-intestinal crisis fever, joint, heart, and kidney complications; the other had intestinal disturbance, fever, slight kidney disturbance, angioneurotic edema and purpura, with mucous membrane hemorrhages. None of Osler's cases had the scarlatiniform variety of erythema, which seems usually not to be associated with as severe conditions as in these two instances. Detailed clinical histories are given of the latter. The author notes that most authorities agree that erythematous manifestations occur most often in gastrointestinal intoxications, from poisons introduced into the stomach, or from errors in metabolism. A great variety of types of erythema are reported under this heading, and the literature on the subject increases the list of substances classed under poisons all the time. Quite recently the various antitoxins have been added to the already long list. Diphtheria antitoxin was added to the list from the date of its first use. The cases with eruptions and gastrointestinal crises are, as a rule, the least serious form of the trouble, unless other complications supervene, as they are likely to in case the attacks recur. The similarity of the disease to scarlatina was well illustrated by the author's cases. The rash was hardly distinguishable from scarlatina, and desquamation took place all over the body. Cases are recorded in which recurrences are frequent, complete desquamation taking place each time, the intervals between the attacks being so short that the skin in some parts of the body was constantly in a state of exfoliation. This

condition resembles closely the exfoliate type of dermatitis, which is not infrequently the terminal condition in this peculiar disorder. What helps further to distinguish it from scarlet fever is its earlier period of desquamation, the rather striking absence of throat symptoms in a majority of cases, its recurrence, the absence of the peculiar pale ring about the mouth, and a disproportion between the fever and the intensity of eruption.

New York Medical Journal, February 3, 1906.

Tuberculosis of the Vermiform Appendix.—H. A. Haubold reports one case, that of a boy of nineteen years, without antecedent history. Initial symptoms of two days' duration, consisting of abdominal uneasiness and constipation, slightly distended abdomen, with some tenderness in the lower right segment, were relieved by free catharsis, but recurrred two days later and led to abdominal exploration. An intramuscular celiotomy evacuated a pint of milky fluid from the peritoneal sac. The omentum was adherent to the appendix at its distal end. The appendix was much thickened, with a hard exudate. No tuberculous foci were noted in the peritoneum, nor was there any fibrinous exudate or free pus. Immediate recovery from the operation was good, but the wound showed no tendency to heal. In the meantime the pathologist had reported the existence of tuberculosis of both appendix and omentum. In three weeks the wound had become reduced to the size of a large fistula, but never entirely healed. The patient gradually emaciated, with low fever, but no cough or expectoration. Examination of the lungs was negative. Death followed nine weeks after operation. No autopsy was held. At no time after the operation was there any evidence of infection from pyogenic bacteria.

Hereditary Syphilis.—An interesting series of cases is presented by R. W. Taylor, who first briefly reviews the progress of studies bearing on the etiology of syphilis in general. Concerning the *Spirochæta pallida*, he says that "the conviction is fast impressing itself on the medical mind that at last we have discovered, if not the true causal agent, at least a microorganism which is in some way concerned in the inception and course of syphilitic infection." Taylor believes that the disease can be transmitted to the third generation, and records two personal cases going to prove this view. Much light has been thrown on the question of the immunity of heredity syphilitics to subsequent acquired infection. We now recognize cases in which "syphilitic heredity" occurs, cases in which simply a dyscrasia is transmitted, which while it may greatly weaken its possessor and retard its growth, shows itself only in dystrophic changes in which several or many tissues or organs are involved in nutritional disturbances. Under favorable conditions, treatment will generally bring such patients back to a standard of health wherein they possess no immunity to acquired infection. On the other hand, severe cases occur, in which the resemblance to true acquired syphilis shows itself and which is a truly malignant condition, capable of transmitting the infection in early years to a healthy subject and running a more or less severe course, according to the activity of treatment. Such patients possess as a rule immunity to subsequent acquired infection. Rarely, owing to changes in nutrition not understood and chiefly to the efficiency of treatment, the hereditary disease seems to become extinct. The immunity is then lost, and the patient may, under favoring circumstances, contract syphilis. Naturally changes in patients of the third generation are more generally of the dystrophic rather than of the virulent form. Death without apparent cause is peculiar to the syphilitic children of the third generation. Abortions and miscarriages are rarer in the third generation, and do not constitute a pathognomic sign, as in hereditary disease of the previous generation. As a rule, syphilitic infants of the third generation do not present in the first six months of life any characteristic anomaly, and they may appear healthy during the first few years. Then, without appreciable cause, they become thin, with more or less dwarfing of their physical and mental functions. Intranasal affections very often mark the syphilis and lead to a fatal termination.

American Medicine, February 3, 1906.

The Readjustment of Education and Research in Hygiene and Sanitation.—William T. Sedgwick urges that a sharp separation be made between sanitary and hygienic work in research and education, claiming that such a separation exists already in fact, and that its recognition would promote the interests of both branches of general hygiene. He would have sanitation mean chiefly the care of the environment (streets, water, milk supplies, sewerage, etc.), and hygiene chiefly the care of persons or groups of persons (feeding, vaccination, personal hygiene, etc.). The latter would then belong largely to medical men or physiologists, the former to sanitary biologists, chemists, and engineers. He laments the small attention paid to hygiene and sanitation, alike in medical schools and in schools of engineering, and looks for a remedy partly in the better definition and separation of these subjects, and partly in the establishment of permanent, well paid positions for trained men in the public health service,—which should at the same time be made more general and less local. He pays his respects to political boards of health as follows:—Politics must also be wholly eliminated from our boards of health, both state and municipal. There is no republican method of vaccination, no democratic plan of street cleaning, and places on boards of health must not be used as rewards of political activity. The time,—if it ever existed,—has gone by when a good board of health can be made up of a political doctor, a political saloon-keeper, and a political nobody; for no well-trained and self-respecting expert in hygiene or sanitation can or will remain in the dubious and uncertain service of weak, incompetent, or shifty characters.

Some Observations on Albumoses in Urine.—Warren P. Elmer after mentioning the discoveries of Bence Jones and discussing briefly the subsequent contributions to our knowledge of albumoses in urine, takes up their clinical significance in general and mentions the following as the diseases in which albumosuria most frequently occurs. Multiple myeloma of bones, tuberculosis, especially pulmonary, croupous pneumonia in the stage of resolution, septicemia, pyemia, abscess, carcinoma, and sarcoma when undergoing rapid retrograde change. The leukemias and Hodgins disease after treatment with Röntgen rays. The various tests for albumoses are considered at some length and he recommends the following as the most practical: The reagent consists of a 50 per cent. solution of sulphosalicylic acid in distilled water. This reagent precipitates on contact all proteids found in the urine, but the albumoses redissolve on warming the urine, while albumins, globulins, etc., do not, so that when any or all of the albumin group are present with albumoses filtered the warmed urine will separate them, and the albumoses be determined by cooling the filtrate. Care must be taken to avoid prolonged boiling, for if mucins be present they may be broken down, one of the products being an albumose. A very small quantity of albumoses may be detected by dividing the urine after adding the reagent and warming one part while cooling the other and comparing the tubes before a dark surface. In conclusion he cites 34 cases of albuminuria in various diseases, with a comparison between the variations in the amount of albumoses in the urine and the leucocyte count as an index to the patient's condition and concludes that especially in destructive processes in the lungs the albumoses in the urine are a more delicate guide than is the leucocyte count.

Röntgen Rays in External Treatment.—M. B. Hutchins discusses the mode of action of the rays and the various diseases in which patients have been reported cured or benefited. He especially emphasizes that mild prolonged or short strong exposures of the skin or incomplete action of rays may produce epithelioma, and that imperfect and unskillful Röntgen-ray exposures can so complicate a case as to render the use of any treatment, or hope of cure, quite vain.

Journal of the American Medical Association, February 3, 1906.

The Arctic Climate.—F. Sohon describes and illustrates by a chart and photographs the advantages of the arctic climate for the relief of chronic affections, particularly tuberculosis. The continuous sunshine and its marked effect on animal and vegetable life in these regions during the summer months as well as its increased actinic quality, the dustless and germ-free atmosphere, and the effect of the sea air under these conditions are all noted as factors in causing the special salubrity for respiratory affections. He sums up the merits of the arctic climate for this class of cases as threefold: "First.—It holds absolutely nothing to add fuel to the existing flame. There is no dust to irritate tissues already struggling against a present mastery of the disease, no superadding of pus or other infections, no contracting of colds to invite a setback, nothing to depress vitality. Second.—It holds every incentive to an increase of bodily vigor. Each and every chance and opportunity for a cure which is here sought for and obtained only singly and indifferently is there grouped together in full intensity without the necessary presence of any disadvantageous element. Third.—As a result of this dual combination, a beginning tuberculous process may be checked in the shortest space of time, and not so much local damage will be done while waiting for the tide to turn and recovery to begin. This will lessen the chances of a new infection occurring after a cure." He believes there is a chance here for benevolent enterprise with a surety of results.

Localization of the Higher Psychic Functions.—After first sketching briefly the history of the present status of the question of cerebral localization, C. K. Mills and T. H. Weisenberg bring forward the data and reasons for the

belief that the prefrontal lobe, that is that portion of the brain anterior to the motor centers, and especially the left prefrontal lobe, is the center for the highest psychic functions. First, they find much evidence of value in support of this view in the studies of human and comparative morphology and anatomy. Brains of persons of known intellectual power show a special development of this region, and if such brains are compared with those of human beings of low individual or racial development the psycho-physiological importance of the prefrontal region becomes more apparent. Exceptionally the left lobe has not the highest development as compared with the right, and in studying the conditions a careful comparison should be made between the gyral and fissural characteristics of the prefrontal and parieto-temporo-occipital areas. Morphological studies of the brains of imbeciles support the theory of the higher psychic functions of the anterior lobes, and the embryological studies of Flechsig and the histological researches of Campbell show, among other things, the absence of projection cells and fibers in this region of the brain. Campbell speaks of it as the very last pallium to appear in the progress of phylogenesis, which is in accordance with the view here expressed as the highest and most specially endowed portions of the nervous system are the latest to appear. Gross and microscopic examinations of the brains of general paretics afford support to this view, and it is probable that a careful study in cases of dementia præcox will also afford like evidence. If the prefrontal lobe is the seat of the higher psychic action, the suggestion naturally occurs whether it can be subdivided into subareas or centers. The difficulty of answering this question is evident, but the authors suggest as a possible clue the position of certain known motor centers that are most clearly associated with psychic functions, such as those for speech and for the movements of the head and eyes, which project from the precentral convolution into the prefrontal lobe. They criticise the work of certain authors who have questioned the psychic function of the prefrontal lobes and point out their fallacies and defective methods of study. The paper concludes with the report of a case of tumor of the prefrontal lobe bearing on the subject here discussed.

Delayed Chloroform Poisoning.—H. G. Wells explains the late mortality after chloroform administration, to which attention has been called by Bevan and Favill and others on the theory that chloroform, a protoplasmic poison, when in sufficient quantity in the blood, inibits the proteolytic activities of certain of the cell enzymes, while autolysis still goes on and this, with the accumulation of toxic substances due to the impaired functions of the degenerated liver and kidney, is the cause of the symptoms of late chloroform poisoning. Just what cell elements are selectively inhibited cannot be definitely stated, but he believes that the oxidative ferments are chiefly involved. If the oxidases in the cell were destroyed or inhibited we would see just the changes observed in chloroform poisoning, and we should look for the appearance of organic acids in the urine, such as we find in these cases. The liver is probably most affected because it is the most active organ in the autolytic and oxidative processes of the body. The summary of his views is given by Wells as follows: "Chloroform poisoning, in common with a number of closely related conditions characterized by intoxication and marked changes in the liver (acute yellow atrophy, phosphorus poisoning, certain septicemias, and some cases of puerperal eclampsia) probably all depend on the effect on the liver of poisons that destroy the synthetic functions of the liver cells without destroying their autolytic ferments. Autolysis of the liver cells follows, with resulting alterations in the liver structure, and the appearance of the products of autolysis (amido acids and various other organic acids) in the blood and urine. It is probable that in chloroform and in phosphorus poisoning, at least, it is the oxidizing enzymes that are particularly involved, accounting for the marked fatty changes that are present in these conditions."

A Remedy for Cholera.—C. D. Ussher, inspired by Koch's statement that quinine in 1/1000 to 1/2500 solution destroyed the cholera germ in from ten to thirty minutes, has used the drug in the treatment of cholera, giving ten grain doses every hour till bile reappears in the stools; from forty to eighty grains have been given. While under the old treatment nearly every case was fatal, under this medication 90 per cent. of the patients recovered, including some who were almost moribund. The routine method is described as follows: Quinine sulphate, 10 grains every hour till ricewater stools ceased and bile reappeared; sweet spirits of niter, dry cupping, heat, and friction for suppression of urine; saline injections when the wrist pulse had disappeared (some of these patients recovered under the quinine without injections). Occasionally a diarrhea mixture was employed if intestinal irritability continued after the reappearance of bile. If irritability with foul odor persisted, a mixture of equal parts of sulphophenolates of zinc, calcium, and sodium was used at intervals of from two to four hours.

The Lancet, January 20, 1906.

Primary Pneumococcus Peritonitis.—The patient of W. C. Ashdowne was a woman of twenty-nine years, with a history of abdominal pain, diarrhea, and vomiting at intervals for some two weeks before admission to hospital. The general abdominal condition was one of distention and tenderness, and finally it was decided to open the abdomen. Much gas was present and some pus, with here and there thick fibrinous deposits on various viscera. The patient died within twenty-four hours after operation. The pus removed at the time contained encapsulated diplococci and a pure culture thereof was obtained from it. The author has found records of thirty-one primary cases due to the microorganism indicated. The primary character of his own case was verified by autopsy. Cases have been recorded of peritonitis secondary to pneumonia or part of a general infection. An analysis is made of the features of the previously reported cases. Of the thirty-one, eight were operated on; nineteen died, four recovered. In the case above referred to there was a history of drug-taking to avoid pregnancy, and the irritation thereby set up may have led to a sufficient gastroenteric disturbance to allow of the passage of the infecting organism through the bowel wall.

The Relief of Certain Headaches by the Administration of One of the Salts of Calcium.—G. W. Ross alludes to a form of headache in which the following are the common features: (1) It is present and most severe on waking, and tends to lessen in intensity or altogether disappear in from one to six hours. (2) It usually manifests itself as a dull, heavy ache, or as a frontal or temporal throbbing. Less often it is occipital, vertical, or unilateral. Infrequently it is neuralgic. (3) In its most typical form it is exceedingly chronic, often of several years' duration, and most intractable. It also exhibits itself as the common occasional headache to which many people are subject (4) It is associated with a deficient coagulability of the blood. The subjects of the chronic form of this headache are usually of the lymphatic type. The expression is heavy and listless. The face is full and the eyes are often puffy. Some anemia is the rule, and it varies in intensity from a slight paleness to an actual chlorosis. The whole bearing exhibits mental and physical lassitude. He styles it the "lymphatic headache." It is characterized by pain after food, edema in face or extremities, shortness of breath, chillblains, or articaria, or neuralgia in varying combinations. Eleven cases are tabulated. For treatment the author prefers the lactate of calcium in dosage of 15 grains, with a dash of tincture of capsicum in chloroform water or camphor water, taken before meals. This salt is more palatable and better absorbed than is the more familiar chloride. The lactate combines well with bitters, iron, and strychnine, but not with alkalies or their carbonates. The bowels must be carefully regulated. Milk is advised. Shellfish, strawberries, etc., are contraindicated. Malt liquors and wines are to be avoided. The author suggests that this plan of treatment for migraine, those neuralgiæ accompanied by a deficiency in the coagulability of the blood, and for some cases of chronic nephritis.

Bradycardia and Cardiac Arrhythmia Produced by Depression of Certain Functions of the Heart.—A paper elaborately illustrated is contributed by J. Hay, who describes the case of a man of sixty-five years, who had a slow pulse for some two and a half years before coming under observation. He suffered from a disturbance of conductivity in the muscle cells of the heart in response to the nerve stimulus to contraction—or as the author styles it, "heart block." This was estimated by measuring the time between the auricular and ventricular systole, as recorded in the tracing of the venous pulse. The patient's pulse was down to 32 per minute. Later the conductivity became normal, but the "block" which persisted was found to be caused by depression of excitability. At certain times the pulse was simply slowed, while at other times it was arrhythmical. According to Hay, no similar case has been recorded. Atropin had a marked influence in increasing the frequency of the stimulus production, but had no influence on the power of conductivity. Sounds were heard during the diastolic phase of the ventricles; they were synchronous with the wave in the jugular vein caused by the systole of the right auricle. The assumption seems justifiable that the sounds were produced by the auricle in its systole. The depression of the conductivity and excitability of the myocardium was probably due to impaired metabolism, secondary to an insufficient blood-supply, the result of arteriosclerotic changes in the coronary arteries. The excitability of the musculature was unstable, possibly as a result of nervous influences such as mental excitement.

British Medical Journal, January 20, 1906.

Extreme Bladder Over-Distension.—In a man of eighty years, with some fever, brown tongue, bad breathing, ede-

matous legs, and congestion at the bases of both lungs, D. J. Hamman found a tumor reaching from the pubes to the xiphosternum. The abdominal walls were extremely tense and the skin showed signs of cracking. The urine had been dribbling for several days. As a catheter could not be passed, aspiration was performed and 260 ounces of urine were drawn off. The patient died with uremic symptoms in four days. The autopsy showed the bladder occupying the abdominal cavity up to midway between the umbilicus and xiphosternum. It was firmly adherent to the abdominal wall and the surrounding viscera, and could not be separated without tearing of its walls. The walls were very thin. The ureter and pelves of the kidneys were greatly dilated. There were no deposits or calculi in the bladder. The middle lobe of the prostate was found much enlarged and projecting over the vesical opening of the urethra.

Food Poisoning and Coma.—A case similar to that reported in this journal one week ago is mentioned by C. Mercier, whose patient was a woman who had given a lunch party and had eaten freely of confectioner's viands. In a few hours she was found comatose. When seen she was still comatose and writhing violently. Suddenly these movements culminated in most violent vomiting, succeeding which consciousness returned. The author thinks that the coma can scarcely be attributable to any presence of ptomaine or other poison in the blood, but must have been due to the mere presence of indigestible food in the stomach. Was it an exaggeration of the drowsiness, he asks, we are all apt to experience after a full meal? Sleep pushed to excess is coma.

Treatment of Arteriosclerosis.—J. Barr enumerates as the causes of this condition, lead, pressor agents acting on the circulation, alcohol, nitrogenous foods, age, sex, physical strain, cold, and race. Americans are, the author says, especially liable to arteriosclerosis. Treatment is considered under the headings of diet, mastication, exercise, baths, drugs (thyroid extract, iodine, adrenalin, citrates, benzoates, sulphates and sulphites, and chlorides). Most men and women eat far too much nitrogenous food. This should be replaced by fats and carbohydrates, including fruits. Buttermilk may be used sparingly, but it contains considerable lime, and it is a good plan to combine it with stewed fruits, which largely neutralize the effects of the lime. Food should be thoroughly masticated and insalivated. Exercise is valuable, but should be carefully regulated. There is no exercise for the right side of the heart like mountain climbing, but advanced years call for caution in this respect. Baths according to the Nauheim plan have frequently a favorable effect on the blood-vessels. The author says that he rarely prescribes digestive agents and hypnotics for this class of patients. If a man cannot eat or sleep there is something wrong with him—he requires to be treated, not palliated. In this disease the man eats too much, and when his digestion fails he can readily subsist on some hot water until his appetite returns. In these cases insomnia depends on high blood-pressure, from whatever cause arising, and it is much better to remove the cause than treat a symptom. In the hands of the author thyroid extract has acted well as a vasodilator. Adrenalin—injurious alone—sometimes does good when combined with iodine or thyroid. Benzoates are of value when the kidneys are involved. As the chlorides are pressor agents, their use should be limited.

The Significance of Small Quantities of Sugar and Albumin in the Urine.—This question is considered by R. W. Burnet, who asks whether these cases of slight albuminuria or of glycosuria are not, in some instances at least, related to those showing signs of actual disease; whether, indeed, in some, it is only a question of the different stages of the clinical history; whether, in other words, permanent pathological changes do not in some cases develop or become evident later on. Both the albuminuria and glycosuria may arise under similar circumstances. The patients are apt to be those in whom, by reason of strain, of long-continued severe mental exertion, anxiety, or other such cause, the metabolic processes have been disturbed, the digestive functions have become disordered, and the nutritive activities seriously hampered, with the result that the patients are more or less out of health, although most probably one cannot put the finger on any definite sign of actual organic disease. The author is not disposed to accept the justice of the term "physiological" albuminuria. He denies the existence of any such condition. Normal urine contains no albumin. All albuminuria is therefore pathological. It is true that many of these cases seem to remain perfectly well, and unless we have evidence of increased arterial tension, casts, etc., we need not take too serious a view of these cases. Most of them do well, but the author believes that under unfavorable conditions a certain number drift into organic disease. Sugar indicates a more serious bodily disturbance than does albumin, especially if the former occurs in young persons. It is of less grave significance when occurring in the elderly. In the latter, with glycosuria we are apt to find free living and a large consumption of alcohol. Finally, the author states that the presence of both albumin and of sugar in the urine indicates serious disturbance in the metabolic processes, calling for relief to the nervous strain which the patient may have been undergoing, and an adjustment, as far as can be, of his environment, but that under favorable conditions these patients may continue in at least fair average health for many years.

Berliner klinische Wochenschrift, January 5, 1906.

Bilateral Empyema.—Laache maintains that this condition is not as rare as it is usually stated to be. Hellin, in a recent publication, reported that he had been able to find records of only 114 cases in the literature, but he, like the author expressed the view that the condition was commoner than ordinarily supposed. Laache describes two instances of this sort which have come under his own observation. The first case was that of a man twenty-one years old, who, after a lobar pneumonia, developed a purulent exudate first on the affected side and then also on the other. The second thoractomy was performed about six weeks after the first, and the patient was discharged cured at the end of about four months after the beginning of his illness. A noteworthy incident was the fact that in the course of one exploratory puncture the lung was evidently injured by the needle, as profuse hemoptysis amounting to 500 grams in twenty-four hours resulted, and a very large superficial hematoma developed, but the incident did not prove to be a serious complication. The other patient was the victim of extensive suppurating foci as the result of actinomycotic infection, and at the time of his death presented a double purulent pleuritic exudate.

The Forensic Identification of Blood.—Neisser and Sachs speak highly of the value of their method of blood identification by hemolysis, which they have now been able to test in three medicolegal cases. The delicacy of the method is so great that a perceptible reaction is produced even in dilutions of one to a million or one to ten millions, while in point of accuracy the procedure is comparable to the precipitin method. The test is carried out as follows: By a preliminary test the dissolving power for sheep's blood of the normal rabbit serum to be used is determined; the average figure for this being 0.25 c.c. to 1 c.c. of a 5 per cent. dilution of sheep's blood. This amount of the rabbit serum is then mixed with the solution to be tested for human blood and 0.01 c.c. of rabbit antiserum adapted for human blood is added. This mixture is kept at a temperature of 37° C. for one hour, and then 1 c.c. of a 5 per cent. dilution of sheep's blood is added and the preparation returned to the thermostat. At the end of two hours the reaction will be complete. If human blood was present in the suspected fluid no hemolysis of the sheep's corpuscles will have occurred, whereas in the absence of human blood hemolysis will have taken place. A control preparation exactly similar to the first except in the omission of the suspected fluid should show hemolysis. The authors recommend that this test be carried out in addition to the precipitin reaction in all cases in order to strengthen the evidence obtained, by the use of a second means of determination.

Münchener medizinische Wochenschrift, January, 16, 1906.

Pyelography.—Voelcker and Lichtenberg under this name describe the process of taking *x*-ray photographs of the pelvis of the kidney. In order to do this, the ureter is catheterized and the instrument is advanced until it has reached the renal pelvis. A 5 per cent. solution of colloidal silver is then slowly injected through the catheter by means of a suitable syringe until the patient complains of pain. There are marked individual variations in the amount of distention that the pelvis of the kidney will tolerate; thus, in one instance, the injection of five c.c. gave rise to severe colicky pains, while in other instances fifty to sixty c.c. could be introduced. The *x*-ray photographs are taken by means of Albers-Schoenberg's screen, and are said to be of satisfactory clearness. The authors have employed the method in eleven instances, ten of the patients being women and one a man. Four failures are recorded, owing to various causes. Schematic drawings indicating the noteworthy features of four of the radiographs are appended, and show dilatation of the renal pelvis, angulation of the ureter, and dilatation of the ureter. The authors believe that the procedure will be found of use in the diagnosis of displacements of the kidney, dilatation of the renal pelvis, disorders of the ureter, and perhaps of renal tumors also. The operation is not very painful, but is best preceded by the injection of a small amount of morphine.

The Diagnosis of Gallstones.—Ehret says that he has found that stones chronically impacted in the common duct give rise to a definite symptom complex which, when present, enables the diagnosis to be made with certainty. Two postulates form a desirable but not essential preliminary, first, the undoubted evidence of the existence of gallstone disease, and, secondly, the at least occasional coloration of the stools with bile pigment. The author's symptom com-

plex comprises three elements. The temperature is usually normal, but at more or less regular intervals periods of fever appear, to be followed by a return to normal lasting from a few days to several weeks. The elevation of temperature may reach 41° C., and lasts for one or two days, after which it returns to normal by crisis. These periodical elevations of temperature are regularly accompanied by a deepening of the already existing jaundice. In those patients who are not habitually jaundiced, icterus appears at these times. When the temperature goes down, the coloration of the skin also returns to the condition usual for the patient. The third element consists in the fact that although the liver may be sensitive to pressure, these periodical attacks are usually not associated with any noteworthy subjective disturbance, the pain ordinarily present in cholelithiasis being conspicuous by its absence. The author affirms that while every case of stone in the common duct may not give these symptoms, in every instance in which this triad does occur the existence of a stone impacted in the region indicated may safely be assumed.

The X-Ray Examination of the Stomach and Intestine.—Rieder speaks very highly of the advantages to be derived by the use of the *x*-ray in determining the position and conformation of the stomach and other portions of the alimentary tract, and states that valuable information in regard to their functional efficiency may also be obtained in this way. The simplest method of procedure is to have the patient drink about fifty c.c. of water to which ten or fifteen grams of subnitrate of bismuth has been added. The patient swallows the mixture under observation by means of the fluoroscope, and useful information in regard to the esophagus and stomach is often secured. The act of swallowing may be studied more at leisure if a small quantity of the bismuth salt is given in a capsule or as a species of dough by mixture with a small amount of water. If more exact observations on gastric motility, or intestinal activity, etc., are desired, a bismuth meal may be employed. To prepare this, about thirty grams of subnitrate of bismuth are mixed with a little milk, and this is then added to 300 to 400 grams of flour gruel, sweetened with a milk sugar in order to obviate the tendency to constipation. In order to study the conditions existing in the large intestine, rectal injections containing bismuth may be administered, and the author has found that by the use of one liter of fluid it is possible to insure penetration as far as the iliocecal valve. The author also points out the various ways in which this method of examination may be utilized for diagnostic purposes in cases of gastric affections, such as hour-glass stomach, gastroptosis, dilatation of the stomach, intestinal stenoses or obstruction, dilatation or descent of the colon, the differential diagnosis of tumors, etc. Although ordinarily the observations are most satisfactorily made by means of direct inspection with the fluoroscope, instructive radiographs may also be secured as in any other department of *x*-ray work.

Deutsche medizinische Wochenschrift, January 18, 1906.

The Dietetic Treatment of Gastric Ulcer.—Senator first mentions the plan of treatment for gastric ulcer employed by Lenhartz, who advocates giving the patients small quantities of very concentrated food, such as eggs, from the first, and rapidly increases the diet by the addition of sugar and milk, and gives scraped beef as early as the end of the first week. The idea of this treatment is to maintain the patient's bodily strength and prevent the doubly weakening effect of hemorrhage and starvation. Senator occupies a middle position between the views of Lenhartz and the older plan of starvation treatment, and recommends a dietary which will be nourishing but also non-irritating, easily digestible, concentrated, and tending to check hemorrhage. This consists in the use of gelatin, fat, and sugar. The first step is the administration of 10 per cent. sweetened gelatin solution, which is given in tablespoonful doses at intervals of from a quarter of an hour to two hours. Small amounts of fresh butter and cream are also allowed, the butter being preferably given in little frozen balls, and the cream beaten up with sugar so as to form the ordinary whipped cream. The daily allowance of this dietary is equivalent to 900 or 1,000 calories, and it may be begun even immediately after a hemorrhage. The gelatin solution may after a time advantageously be replaced by more palatable forms of the same material, such as calf's foot jelly, or other varieties. Other therapeutic measures are also employed, and in some instances rectal feeding may be resorted to, though of late years the author has found little occasion to use the latter means of feeding.

French and Italian Journals.

Sudden Death at the End of Pregnancy, Post-Mortem Cesarean Section, Living Child.—P. Rudaux reports two cases of this nature. The first patient described was a woman, twenty-eight years old, without any pathological antecedents. She had become pregnant for the first time when twenty years old, and had given birth at term to a male child. She became pregnant again in 1898. She entered the hospital in February, 1899, a short time before labor was due. A few days later she died suddenly. Every effort was made to resuscitate her—artificial respiration, traction of the tongue, subcutaneous injections of ether and of caffein were all practised, but in vain. The heart beat persisted, but was becoming feebler. Cesarean section was performed and a living child extracted. The urine had always been normal. At autopsy the lungs were found to be congested, and the right ventricle contained a large blood clot which extended into the infundibulum. The kidneys were of normal size and of dark red color. The liver was large and of dark color. The spleen was soft. There was nothing in the brain of any interest, neither did the uterus present any lesion.—*Annales de Gynécologie et d'Obstétrique,* December, 1905.

Hygiene of Nurslings.—H. Méry draws attention to the increasing interest which is being taken in the study of infantile conditions. He emphasizes the importance of distributing, not plain milk, but modified foods which are found after examination of the child to be indicated by its condition. There are various institutions which devote their energies to the distribution of plain foods, but the distribution of such foods as buttermilk, modified milk, and so on, should be looked after. Méry thinks that as few children as possible should be kept in the hospitals. He believes in encouraging outdoor consultation for sick nurslings, and in distributing pecuniary aid to the mothers. A house in which the régime of nurslings could be looked after exclusively would be most appropriate for this work. This building should have its various laboratories, and bacteriologists, for the preparation of fermented milks of various kinds. A most important department would be a culinary laboratory, which should be taken care of by a person who is capable of directing it. A convalescent home outside of Paris would also serve a good purpose in the care of these children. When the children are admitted to the hospital the writer believes that all those who have any contagious disease should be strictly isolated from those who are suffering from simple digestive troubles only and who need only dietetic treatment. The writer believes that if these suggestions were carried out, the mortality of children would be decidedly decreased.—*La Presse Médicale,* January 6, 1906.

Indications for Surgical Treatment of Diseases of the Stomach.—Queirolo says that in matters of diagnosis and therapeutic indications, diseases of the stomach are essentially inside the domain of internal medicine; surgery is the arbiter of the possibility and value of operative interference in special cases. The determination when surgical interference shall take place belongs to medicine, because of its observation of the symptoms bearing on diagnosis, and its knowledge of the probable utility of any operation performed. In gastric ulcer, when it is rebellious to medical treatment, we may turn to surgery to do an excision or to change the form of the organ, or the margins of the ulcer. There are peremptory indications for surgical interference in cases of complications, such as repeated hemorrhage, perforation, or stenosis of the pylorus, as a result of cicatrization. In atony and gastric dilatation, when medical treatment is seen to be useless, a gastroenterostomy is indicated. In pyloric spasm, long duration of the disease, without medical relief, favors surgical interference; the dilatation of the organ and the general decay of nutrition also indicate it. In pyloric hypertrophy, when the disease is of long duration, and rebellious to rigorous measures, gastroenterostomy is a factor in the cure of the affection.—*La Riforma Medica,* December 23, 1905.

Intoxication Arising from Medication in Babies.—R. Jemma tells us that some children show a remarkable tolerance for drugs, and can take larger doses than adults in proportion to their age. At the same time, others have symptoms of intoxication from therapeutic doses of ordinary drugs. Some authors publish series of cases of remarkable tolerance for opiates, while others record other series of deaths from small doses of the same drugs. The author believes that these apparent contradictions are an indication that individual idiosyncrasy plays an important part in the matter. He records one case of intoxication from antipyrin, given for a spasmodic cough in ordinary doses, where the mother gave the entire bottle at one dose. The child was taken with intense dyspnea, vomiting, congestion of the face, and severe spasms of coughing, with bloody expectoration. The following day it had a typical antipyrin rash, part of it purpuric. Another case observed by him was the result of chocolate tablets of an anthelmintic, believed to be santonin. The child suffered from prostration and torpor, eclamptic seizures, and deep yellow coloration of the urine. He had taken only two of the tablets, probably three to ten centigrams of santonin being taken in all.—*Rivista di Clinica Pediatrica,* December, 1905.

Book Reviews.

Materia Medica and Pharmacy. By Reynold Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine at the New York Post-Graduate Medical School and Attending Physician to the Hospital; Consulting Physician to the Nassau Hospital; Visiting Physician to St. Mark's Hospital; Ex-President of the American Therapeutic Society; Fellow of the American Academy of Medicine; Vice-Chairman of the Revision Committee of the United States Pharmacopeia, etc. Sixth Edition. Based on the Fifth Edition of White and Wilcox's "Materia Medica and Therapeutics." Philadelphia: P. Blakiston's Son & Co., 1905.

The changes rendered necessary by the issue of the recent edition of the United States Pharmacopeia, and the accumulation of matter that has been from time to time added to the various editions of "White and Wilcox" have induced the editor to rewrite the work. The present volume is the first part of this revised work, and contains Materia Medica and Pharmacy. The preparations, doses, and descriptions of the remedies are given in considerable detail, and there is a useful résumé of the action and uses of the drugs and preparations. Therapeutics and Pharmacology will be treated of in detail in another volume. Both official and unofficial preparations receive similar recognition and attention; the latter, indeed, taking up an appreciable part of the volume. The book is well printed and has a very complete index.

Practical Sanitary Science. By David Sommerville, B.A., M.D., Lecturer in Public Health, King's College, London. New York: William Wood & Co., 1906.

This is an excellent little handbook for the public health laboratory, containing as it does, between its covers, an outline of practically all the important methods of sanitary examination concerned with the analysis of water, air, soil, sewerage, foods, and disinfectants. Though intended primarily for students, the book can be commended to health officers for ready reference. While the methods described are few, yet they are sufficient in number to meet any ordinary condition, and in character are such as have been approved by the test of long practical employment.

The Surgeon-Generals of the Army of the United States of America. By Major James E. Pilcher, U. S. Vols., Captain U. S. A., retired. Carlisle, Pa.

This book, as its name indicates, consists of biographical sketches of the official heads of the Army Medical Department since its organization in the Provincial forces before Boston. The book is a collective reprint of the series of essays on the subject appearing from time to time in the Journal of the Association of Military Surgeons. The work covers a field of medico-military history hitherto unoccupied, and in its style, completeness, and make-up, reflects much credit on the author.

A Text-Book of the Diseases of the Ear, Nose, and Pharynx. By D. B. St. John Roosa, M.D., LL.D., Professor of Diseases of the Eye and Ear in the New York Post-Graduate Medical School and Hospital, etc., and Beaman Douglass, M.D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital, etc. New York: The Macmillan Co., 1905.

This work by two well-known teachers and clinicians well illustrates the modern idea of the intimate relation between aural and nasal diseases. In fact, one chapter of eighty-three pages is devoted to diseases of the nose and nasopharynx which may affect the ear. To quote from the preface: "The recent proper estimate of the relation between the nose and ear has led us (the authors) to endeavor, not merely to place these subjects in one volume, but to weave them together as one subject, thus emphasizing their common dependence." This is the keynote of the work and the standpoint from which it is written.

A distinctly conservative line pervades the various chapters. The chapter on acute inflammation of the middle ear is full of common sense. Great stress is laid upon the necessity for prompt and efficient treatment of the milder conditions so as to avert the more serious ones and thus obviate the need of major surgery. Concerning the popular use of electricity for the relief of eustachian obstruction, it is declared that nothing is accomplished by it that is not achieved by the use of common air, medicated vapor, and bougies. We are rather surprised to find no mention made of the submucous resection of the nasal septum for deviations. The preface opens with the statement that the book is intended to assist practitioners and students of medicine to study and treat diseases of the ear. This result has, we think, been attained with a most gratifying success.

Lo Sgombero degli Ammalati e dei Feriti in Guerra. Memoria dei Dottori Luigi Bernardo, Tenente Colonn. Medico, e Guiseppe Brezzi, Maggiore Medico, Onorato dal° Premio nel Concorso Riberi del 1902-1903. Rome, 1905.

This monograph on the care and transportation of the wounded in the field of battle received the first prize of the Medical Department of the Italian army in 1904. It deals with the means of transporting the sick and wounded from the battlefield to places where treatment can be properly carried out; and with the care of the wounded on the battlefield under various conditions and in different countries. The authors consider first, the effect of transportation upon various injuries of warfare; then they go on to the art of estimating losses in battle, and the manner of handling and transporting the wounded during the battle. They study, especially, the surgical service of the Anglo-Boer war, and draw therefrom conclusions for the guidance of the Italian and foreign armies in the future. They discuss in detail the organization of transportation facilities, and the means of first aid on the battlefield. Charts are appended, geographically illustrating the disposition of the corps of surgeons, the arrangement of field and base hospitals, etc. during a conflict. The monograph should be translated into all languages, and would have done much good in the Russian army during the war just closed.

The Art of Massage. By A. Creighton Hale. Second Edition (Fifth Thousand). Profusely Illustrated with Original Drawings. London: The Scientific Press, Limited.

This book contains twenty-seven chapters and treats of massage and incidentally of several other things. The parts dealing with massage may possibly be of some service; those devoted to the etiology and treatment of disease are not satisfactory, and seem out of place.

Materia Medica and Therapeutics. An Introduction to the Rational Treatment of Disease. By J. Mitchell Bruce, M.A., LL.D. (Hon.) Aberd., M.D. Lond., Fellow of the Royal College of Physicians of London, Consulting Physician to Charing Cross Hospital and to the Hospital for Consumption, Brompton. Formerly Examiner in Medicine in the University of Cambridge, and Examiner in Materia Medica in the University of London and in the Victoria University. New and enlarged edition, revised throughout, and containing the Indian and Colonial Addendum to the British Pharmacopœia. Forty-seventh Thousand. Chicago: W. T. Keener & Co., 1905.

In the present edition of Bruce's Materia Medica and Therapeutics the subject matter has been revised and brought up to the level of the latest knowledge. There has also been added a new part containing an account of the Materia Medica of the drugs in the Indian and Colonial Addendum to the British Pharmacopœia. The book is very little larger than the former editions, and on account of its accuracy and general trustworthiness will continue to be a favorite with students and practitioners using the British Pharmacopœia. The section on therapeutics is particularly valuable, the subject being treated on a physiological basis, and appealing to the reader by its concise and logical methods.

Surgical Diagnosis. A Manual for Students and Practitioners. By A. A. Berg, M.D., Adjunct Attending Surgeon to the Mt. Sinai Hospital, New York. New York and Philadelphia: Lea Brothers & Co., 1905.

It may truly be said that the favorable light in which modern surgery appears is due as much to the development of means for making an early diagnosis as to the actual improvement in operative technique. Pathology, bacteriology, chemistry, and physics have all contributed to an early and correct recognition of maladies which should be regarded, and in fact are, surgical in character from their incipiency. But few diseases now remain for which some means of early diagnosis have not been devised. In the present work the attempt has been made to bring together in a concise fashion the essentials of all surgical diseases, with the exception of those of the eye and ear, giving in each case a general clinical picture, including the etiology, the course of the disease, and sometimes the pathology. The differential diagnosis is also stated in some instances, but this feature might have been developed with advantage. The chapters on surgical diseases of the abdomen and on diseases of the urinary organs are very complete, and in the latter the value of cryoscopy and cystoscopy is fully discussed. The original illustrations, including the *x*-ray pictures, are very good; most of the others have a familiar, hackneyed look, and many appear somewhat the worse for wear. The book constitutes an efficient and fairly comprehensive manual and forms a worthy addition to the very few English books on this subject which we possess.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held December 21, 1905.

Dr. Charles L. Dana, in the Chair.

This meeting was held under the auspices of the Sections in Medicine and Genitourinary diseases.

The Treatment of Gonorrheal Rheumatism with an Antigonococcus Serum.—Dr. John Rogers read this paper. He said that from what was known of other infectious diseases it was very evident that the prolonged cases of this infection must lack the antibodies which naturally existed or were produced in the vast majority of individuals, and if these antibodies could be provided artificially recovery might at least be accelerated. There was still doubt as to how the human urethra recovered from the infection, but it seemed explainable on the ground that the mucous membrane gradually became an unsuitable culture medium. The injurious effects of the infection were probably produced not by a true toxin, but by a bacterial proteid which was liberated by the death of the organism. The term gonorrheal rheumatism seemed particularly appropriate, as by analogy it called attention to the systemic infection which most commonly manifested itself by serious disease of one or more joints and less often involved other organs. It also invited comparison with the ordinary acute polyarticular rheumatism, in which the microbe cause of the almost exactly similar lesions was as yet not proved. After entering the circulation the gonococcus showed a marked affinity for the serous membranes, and in addition to the common disorders of joints and tendon sheaths which it produced, there were enough cases of endocarditis, pericarditis, pleuritis, and meningitis due only to the gonococcus on record, to make one attribute to this organism any such complication in a patient giving a more or less recent history of gonorrhea. One or more of the large joints might be attacked at almost any period after the incidence of the gonorrhea, the usual time being between the first and eighth week. After considering the symptoms, the differential diagnosis, prognosis, etc., he said the ordinary antirheumatic treatment was notoriously unsatisfactory. In every suspicious case from 20 to 60 minims of the antigonococcus serum should be administered every day or every other day beginning as early as possible after the arthritic symptoms appeared and continuing until the pain and disability subsided. He usually gave it in the loose tissue overlying the fascia in the back of the upper arm. There was generally a noticeable improvement at the end of twenty-four or thirty-six hours, and within a week or ten days an almost complete subsidence of the disorder if it was acute. After the suspension of the treatment there seemed to be a constant danger of recurrence or recrudescence of the arthritis, especially if the urethritis persisted and the inoculations might have to be repeated. But the whole course of the disease was vastly shortened and ameliorated and, beyond an occasional arythema, absolutely no ill effects had been produced. This method of treatment had the same limitations and disappointments of all serum therapy and was not advanced as an infallible remedy. The effectiveness of the serum depended to some extent upon the animal and the culture which was used, the length of time and the manner and this animal was inoculated, and the number of "bleedings" to which it was subjected. The serum had little or no effect upon the urethritis. The unfortunates who suffered from gonorrheal rheumatism must have a constitutional deficiency of antibodies, and as soon as these were supplied artificially the disease subsided. He submitted the histories of eight cases, which were examples of the common acute, chronic, or prolonged forms of this joint disease, and although they were by no means all that had been tested, he had not omitted the failures. In a "prolonged" case, or one which persisted for years and years, and from bad to worse, a failure should not be judged harshly when the possibility of error in diagnosis was considered. Many good observers doubted the existence of such a condition, and its explanation involved some difficulties. But in following the histories of these patients the more or less steady continuation of the same milky inflammatory process seemed to him conclusive evidence of the nature of the original infection, even if its definite prolongation was due to some superimposed alteration in nutrition or metabolism. That one of these peculiar cases was evidently benefited was certainly gratifying and encouraging.

Preparation of an Antigonococcus Serum Effective in the Treatment of Gonorrheal Rheumatism.—Dr. John C. Tarrey said there were several reasons why an antigonococcus serum had not been used heretofore in the treatment of gonorrheal rheumatism. It had been found to be impossible to bring about an infection in animals by the gonococcus. Again, there was not the slightest indication of an acquired immunity in man to gonorrheal infection. Finally, the consensus of opinion seemed to be that animals could not be immunized to the toxin of gonococcus as it was contained within the cell. It was, in other words, an endotoxin, a bacterial protein. Although there was apparently slight chance of success, at the suggestion of Dr. Rogers, he prepared a serum for a case of gonorrheal rheumatism of some fifteen years' standing, which had been treated in every other way without result. They were agreeably surprised to find the serum effective not only in that case, but also in a high percentage of others on which it had been tried. The culture, which was originally employed in producing the serum, was isolated from an acute case of gonorrhea in a male. It conformed in every respect with the characteristics of the gonococcus. The diplococci were negative to Gram's stain, would not grow on ordinary peptone agar or broth, and died on ascetic sugar in a short time. For purposes of inoculation a very satisfactory medium was a mixture of rich ascetic fluid and slightly acid beef infusion peptone broth. The incubator temperature should be between 36° and 37° C. This strain, after being cultivated on artificial media for over a year, grew fully as well and produced practically as effective a serum as when first isolated. Two other strains of this organism, kindly given him by Dr. Elser, gave rise to fully as potent a serum as the original culture. Rabbits had been used exclusively in producing the serum. They should be inoculated every five or six days, intraperitoneally, with 10 c.c. of culture. The best results were obtained with cultures from six to fifteen days old. The highest degree of toxicity and growth was obtained during this period. The first inoculation always caused a great loss of weight, sometimes one-fourth the total weight. The five or six days following inoculations gave rise to only a very slight loss of weight and discomfort. After a variable time, however, the majority of the rabbits reached a condition of hypersensitivity to the toxin and succumbed to a dose that would never have proved fatal to a normal animal. This seemed to indicate that the toxin present in the culture medium was, for the most part, if not entirely, derived from the dead bodies of the cells. Only exceptionally did rabbits approach a condition of active immunity. The animals were bled from the ear or the carotid. Serum derived from the later bleedings was more potent than that obtained at first, when the animal had received only a few inoculations. The serum kept well on ice for two or three months. In inoculating rabbits whole cultures, both the cells and filtrate, were used, with the hope that a serum might be obtained possessing both antitoxic and bactericidal factors. That it was at least in some degree antitoxic seemed probable from its protective power for guinea pigs. The chemical evidence also pointed to the same conclusion. The more important permanent benefit which the serum in most cases afforded was, without doubt, however, due to a bactericidal activity. It seemed probable that the serum supplied enough immune

bodies to enable the system to destroy the comparatively few gonococci which were concerned in gonorrheal rheumatism. This supposition had not been substantiated as yet by complete experimental evidence. Both agglutinins and precipitins for the gonococcus had, however, been demonstrated in the serum.

Dr. James Ewing discussed the paper.

Deductive Value of Urinary Examinations.—Dr. Richard C. Cabot of Boston in this communication said that in the study of diseases of the kidney we were still hampered by the tyranny of the morphological point of view which was, like most tyrannies, self-imposed. We had formed the mental habit of asking what the diseased organ would look like if we could see it at this moment. But it should be remembered that it was *functions* and not appearances that deserved our main interest. Renal irritation and renal insufficiency, acute and chronic, was what we wanted to recognize and to treat. Three sets of changes must be distinguished in the kidney as follows: Renal irritation, which showed itself in the presence of albumin and casts; renal insufficiency, which might exist with or without albumin and casts and showed itself chiefly in the physical characteristics of the urine and in the condition of the rest of the body; and nephritis, which showed itself in the post-mortem appearance of the kidney. The very wide and important discrepancy between urinary findings and post-mortem appearances had been very forcibly borne in upon him by his own investigations, as well as others.

Renal irritation was most easily studied in that produced by violent muscular exertion, *e. g.* a boat race. The urine in such cases almost invariably contained serum albumin and casts, the former being even as much as ½ per cent. and the casts as numerous and as various as in acute nephritis. After a few days' rest all abnormalities disappeared from the urine. The largest number of casts ever seen by Drs. Cabot and Emerson occurred in cases of diabetes with sound kidneys post-mortem. What he wished especially to emphasize was that the evidence of irritation, albumin and casts was not evidence of nephritis, which might be or might not be present. Hence the folly of sending a urine to the laboratory or to a urologist for diagnosis, or for more than a description of what he found.

If the kidney could not do its work, if it could not excrete the products of nitrogenous metabolism, or if it could not excrete water and the inorganic salts, definite changes could be found either in the urine or in the functions of other organs, uremia, dropsy, and cardiac changes. The mutual dependence of heart and kidney was almost as close as that of stomach and bowel. A strong heart would pull the system along, even if the kidney was badly damaged. The harm done by a diseased kidney seemed to depend in many cases on how well the heart could make up for the damage by increased work, and, in such cases, one got characteristic changes of renal insufficiency. These were to be appreciated by (1) the changes in the physical characteristics of the urine and (2) by that group of changes known as uremia, dropsy, and cardiac enlargement. Evidence of irritation (albumen and casts) or change in the amount of this or that solid excreted might or might not accompany the gross physical evidence on which our knowledge of renal insufficiency depended. The physical changes were so familiar that he enumerated them in the briefest manner. When conditions permitted the test by quantitative analysis, which substances were retained and which were excreted was direct functional diagnosis and should be of the greatest value in therapeutics.

Regarding nephritis the reader quoted from Dr. Emerson's figures as follows: "Out of 11 cases of extreme chronic passive congestion without any microscopical evidence of nephritis, 8 were diagnosed clinically as nephritis. Thirteen out of 109 cases of acute nephritis were recognized first at autopsy, while 11 were called acute nephritis clinically, but not at autopsy. One in every four was wrongly diagnosed." In 46 out of 104 cases of chronic indurative nephritis (43 per cent.) the diagnosis was not made in life. Scanty urine, even anuria, or at the other extreme, polyuria with low gravity, might exist without nephritis; it was the persistence and not the existence that was a serious matter.

The following were the reader's conclusions: (1) Functions, not histological appearances, were what one should strive to recognize in kidney disease. (2) Albumin and casts never meant nephritis; they might, or might not, accompany it. (3) The physical characteristics of the urine, the visceral evidence of uremia, dropsy, and cardiac involvement were the best helps to the functional diagnosis of renal disease. The dilution test, the concentration test, and, if opportunity offered, the quantitative estimate of the kidney capacity to excrete particular substances might render valuable aid.

The Medical Treatment of Diseases of the Kidneys.—Dr. James Tyson of Philadelphia said that indications for successful treatment of kidney disease were (1) to restore the kidney to its natural condition and (2) to overcome such dangers as threatened the economy. The means to these ends were not as simple as the statement of them, but they were more easily met in acute than in chronic nephritis. In acute nephritis the condition of the kidney was more favorable for recovery to the normal state if rest was enjoined, especially rest in bed. Then the patient should not be given such food as would tax the kidney function. Such food as milk, or milk and water, or vichy or carbonated waters were of value. Again the kidney might be depleted by purgation, as a saline purge or calomel. These three measures fulfilled the indications for the treatment of the vast majority of cases of nephritis. But there were two symptoms at least which should be considered, dropsy and uremia. Fortunately, the same treatment which was involved in the fulfilment of the first acted in the fulfilment of the second condition. Purgation should be repeated and persisted in. Sweating produced by vapor baths, or hot-air baths, or other methods should be employed. He placed sweating after purgation; elimination by purgation was more efficient than elimination by perspiration. By the employment of such measures the majority of the cases of simple acute nephritis would get well. The measures employed in the treatment of the acute cases should be continued in the chronic cases and with two additional ones. First, the administration of hot-water injections high up in the rectum; secondly, the subcutaneous or intravenous injection of saline solutions. His own experience with these remedies or with high injections was not satisfactory, great difficulty being in getting the liquid to stay. The rectum should first be washed out. It was supposed to act well in exciting increased excretion of urine. Hypodermoclysis was sometimes of value in the treatment of uremia, but it should never be employed except in association with venesection and so avoiding the overfilling of the right heart. If one should first bleed the patient and then introduce the saline solution, so diluting as well the toxins, good should accrue. The employment of diuretics in the management of these cases hold a secondary place. They should not be used until sweating and purgation have first been practised. In the large majority of cases it was almost impossible to make a diagnosis between chronic interstitial nephritis and chronic parenchymatous nephritis. In the management of these chronic cases he said there was no drug that had the power of influencing these chronically inflamed kidneys, and this was a fundamental proposition. There was no one drug which could influence an albuminuria. In such cases rest became an important adjuvant, but because the disease was such a prolonged one it was a disadvantage, because of the long confinement and want of exercise; this more than counterbalanced the good that might result from the rest in bed. A patient might be placed at rest for fully a month or six weeks if massage were employed; such a plan might

lower the amount of albumin even one-half or one-quarter, but it would not reduce it entirely. In the treatment of these chronic cases one should attempt to find a golden mean as regards the question of rest. Dr. Tyson referred to another class of patients who came for life insurance examinations, not aware that the urine contained albumin and casts, the discovery being made accidentally. In such cases he advised no treatment whatever, except to caution the patients to lead restful lives and to carefully select their food. He asked what should these cases of chronic nephritis live upon? In the first place milk was always a safe diet, but should be given only to the extent of one quart a day. After this came vegetables, such as the soft and succulent ones, like potatoes, rice, beans, and tomatoes. Cereals and sugars he had been surprised to hear physicians make injunctions against. There was no reasonable objection whatever to nephritic patients having sugar in ordinary amounts; there was no more suitable diet than sugar in moderation. Meat in moderate quantities should be allowed. The most important thing to consider in the dietetic treatment of chronic nephritis was quantity. One should not encourage overfeeding, but moderation in eating, as well as in all things. It did not make so much difference what patients ate except from the standpoint of indigestion. Crisp bacon might be allowed in the middle of the day and raw oysters in the evening. Eggs should be allowed, but one should watch for idiosyncrasies, and if it was found that the consumption of eggs increased the albumin, they should be discarded. Alcohol was capable of producing a nephritis, therefore he did not advise its use in nephritic cases; yet there were cases in which alcohol seemed to do good in moderate amounts, particularly prior to meals as an appetizer, as a cocktail before, and possibly whiskey and water with meals. Condiments he considered to be harmful, especially horseradish. Coffee, tea, and tobacco fell in the same category with alcohol; that was, their moderate use was not necessarily harmful; they became harmful only when they were abused. Regarding drugs he said that more harm than good was done by their use in chronic nephritis. To produce an increased excretion of urine he preferred citrate of potassium. Iodides were also to be recommended in some cases when accompanied by arteriosclerosis. Iodide of sodium in small doses, continued over long periods of time, had given good results in these cases. But so soon as the first evidences of any harmful effects presented themselves the iodides should be at once stopped. The iodides seemed to act as diuretics. His experience had taught him that opium should never be used if it could be avoided. In the water-logged condition of chronic nephritis the same measures as above were to be employed, but with less prospects of success. Long incision, about one inch long, behind the ankles, followed by antiseptic dressings, was followed by far better results than the usual mere pin scratchings. The saddest of all the symptoms of chronic nephritis was the gradual appearance of retinitis albuminurica; here one met with the utter futility of treatment; such a condition showed that the end was not far off. To be sure some cases lasted a year, and even longer. Sometimes the biniodide or bichloride of mercury combined with the iodides had some effect in clearing up in a measure the loss of vision.

The Operative Treatment of Chronic Nephritis.—Dr. Ramon Guiteras presented this communication. He referred to the opinions of numerous surgeons in this country and abroad who were interested in renal surgery. Two and a half years ago he sent out a communication to 150 of the most prominent surgeons of this country, and he found that they were about equally divided in favor for and against the Edebohl's operation of decapsulation. Answers were received from 42 surgeons who had performed the operation, the aggregate number of cases operated on being 120. Of these 120 cases 16 per cent. were reported cured, 40 per cent. improved, and 11 per cent. unimproved; of this list there were 33 per cent. deaths. In cases of interstitial nephritis the results appeared to be brilliant, as the albumin and casts disappeared from the urine, although the amount of solids excreted was not brought up to the normal. The mortality in cases of chronic interstitial nephritis unfortunately was 26 per cent.; in chronic parenchymatous nephritis, 25 per cent; in chronic diffuse nephritis, 75 per cent. The operation of decapsulation for the cure of chronic Bright's disease was then a new procedure. Recently he sent letters to these same 42 surgeons, asking for later results of their operations. One-half of this number replied. They had decapsulated the kidney on 41 cases of nephritis, minus one case, which was a movable kidney and operated on by nephropexy. Of these 40 cases the report was as follows: Recovered, 1 patient; improved, 3; unimproved, 3; died, 33 (82 per cent.). Therefore the speaker felt that he was now justified in saying that at the present time capsulectomy was not a popular operation among the surgeons of the United States, while in Europe it had been thoroughly tried and had but few followers. It was difficult to see how decapsulation could be expected to cure such diffuse and deep-seated kidney disease as arteriosclerotic interstitial nephritis or diffuse parenchymatous degeneration of the kidney. The other operations for chronic nephritis were nephrolysis, nephrotomy, nephrectomy, and nephropexy. Nephrotomy was still the operation which appealed to most of the European surgeons in the treatment of chronic nephritis and was used in cases of hematuria, in the nephralgic type, to relieve the tension of nephritis, and for anuria. Personally, the reader did not believe in total decapsulation, but he was a firm believer in partial decapsulation of not over one-sixth of the kidney area to assist in fixation, if the kidney was movable. If the kidney was not movable he believed that tension would be removed by simply incising the capsule over the convexity. If there were symptoms of unilateral nephralgia and hematuria he would perform a nephrotomy not only as an approved operation, but also as an exploratory means of determining a possible existing surgical disease. In closing, he wished to emphasize the importance of making a correct diagnosis in renal disease, and in this one must be guided by the history, the general examination, and the urinary findings. In renal surgery it was not what one found, but what one did not find, that often influenced unfavorably these cases. Therefore, one should not be satisfied with anything less than a thorough routine examination in all the cases, and, if suspicions were aroused regarding a possible abnormal condition, one must exhaust every means to know its presence or absence. Too much haste and not sufficient study had heretofore been the two factors which had interfered with success in renal surgery.

Dr. Edward G. Janeway said that albumin and casts were dubious things on which to make a diagnosis; something more should be present to go on. Not only should one study the presence of albumin and casts, but other things as well, in order to make even a tentative diagnosis. He cited several cases, in order to illustrate certain points he wished to emphasize. In the water-logged condition the kidneys were taxed by placing too much water in the system. Opium made patients more comfortable, but there were times when it was productive of great evil. Cheyne-Stokes breathing was often quickly relieved by a hypodermic injection of morphine. Small doses of mercury would often cause salivation in these patients; this had been known to follow the use of Fothergill's pill. Iron should be used with great care.

Dr. George L. Peabody said he was largely in accord with what had been already stated, although he believed that Dr. Cabot was too radical, if he really meant to say that albumin and casts indicated nephritis. There was nephritis if there was a persistence of the albumin and casts. With regard to the treatment he was glad that Dr. Tyson had helped to do away with that bugbear of diet.

There was no question in his mind but that the diet in chronic nephritis should be a varied one to maintain the nutrition of the patient. There was another superstition regarding the use of red meat. These patients should have a reasonable amount of meat every day. The treatment of chronic nephritis resolved itself into the treatment of the symptoms. He referred to the fact that chronic nephritis and rheumatism was almost unknown along the Nile in Egypt. Certain climates appear to stimulate the renal excretion. The best means of relieving high tension, he believed, was venesection; next to that was aconite; next to aconite was chloral. In cases of chronic uremia with high-tension pulse, cardiac disturbances, and insomnia, aconite did well. Nitroglycerine was an uncertain agent; nitrite of sodium was more to be relied upon. In uremic convulsions he said he had had success with ethylcarbonate, but this agent should be given in large doses, hypodermically. The mineral waters he considered useless. He had had a limited experience with decapsulation of the kidney. He reported the case of a boy who had had decapsulation performed four times, and possibly might have to have it done again. Decapsulation was performed after all other methods had failed to relieve the anasarca; after the operation the boy was apparently well. But he had relapses, necessitating the operation again. He was now in the hospital under medical treatment; if this failed, the operation would again be resorted to.

Drs. T. W. Hastings and E. E. Smith also discussed the papers.

NEW YORK PSYCHIATRICAL SOCIETY.

Meeting Held December 6, 1905.

The President, Dr. Allan McLane Hamilton, in the Chair.

Insanity as a Result of Hysterotomy and Oophorectomy.—Dr. Graeme M. Hammond under this title discussed the doctrine of the influence of the ovaries upon mental development, and concluded that they did not supply the brain with any substance necessary for the preservation of its integrity, and that the removal of these organs was never followed by insanity unless there was hereditary tendency to insanity or a congenitally defective brain. He admitted that insanity more frequently followed operations upon the pelvic organs than any other operations, but stated that this was not due to the loss of the ovaries and uterus, but (1) to an hereditary tendency to insanity; (2) to psychical causes, such as the fear of death, disappointment at not bearing children, the curbing of the maternal instinct, the fear of the loss of the husband's love, the fear of becoming cold and indifferent to the husband, and the fear of acquired masculinity; (3) to physical causes, such as anemia, neurasthenia, and the breaking down of the general health from long-continued disease; and (4) to surgical shock. His conclusions were that insanity was not due to loss of function of the ovaries or uterus, and that insanity never followed operations on these organs unless there was an hereditary tendency to insanity or a congenitally defective brain, and that this tendency, developed by the psychical and physical causes referred to and by surgical shock, was the true reason for the insanities which follow operations on these organs.

Dr. G. H. Kirby said that at the Manhattan State Hospital and in the service of the Pathological Institute he had recently had eight cases in which the psychoses seemed to be more or less directly connected with operations on the generative organs. In four cases he was not able to determine whether the ovaries had been removed; in the other four cases they had undoubtedly been removed. Two were cases of excitement resembling mania; one of these patients recovered, the other patient was discharged improved; the third one was a case of dementia præcox, and in the fourth patient the symptoms were those of an agitated melancholia of the involution period. The general conclusion was that there was no special type of psychosis following such operations. His experience in general coincided with what Dr. Hammond had said.

Dr. Adolf Meyer stated that in the main the statements of Dr. Hammond seemed to coincide with the experience just mentioned. There would hardly be so much objection to drawing a parallel between the loss of the ovaries by operation and the loss of function during the involution period, so far as his experience with the anatomical condition of the ovaries after involution had taken place would make him think, but for argument no doubt Dr. Hammond was right in eliminating that point, because it would be difficult to convince the opponent. He doubted whether it were wise to say that only hereditary or congenital conditions would allow the formation of psychoses, since it seemed fairly probable that individuals with a fair start in life could, nevertheless, in the process of development undergo such constitutional changes as to expose them to mental breakdowns. A large number of cases that finally consented to gynecological operations, and that came under discussion in this topic, were, however, individuals who had a strongly disorganized mental makeup, further aggravated by the points which Dr. Hammond had so well described. Replying to Dr. Hammond's question whether psychoses had been observed following other operations, Dr. Meyer said that occasionally psychoses were attributed to other operations, but there again we had the same thing. As a rule the nature of the psychosis corresponded to the constitutional makeup of the individual, or such matters as the exhaustion, shock, infection, etc., which occurred in the post-operative condition.

Dr. Maurice C. Ashley agreed with what Dr. Hammond had said, and stated that in his experience with such cases, which had not been great, he had seen a number of cases of insanity which had been attributed to operations upon the reproductive organs, and all observers had seen many such operations where no psychosis followed. Psychoses had also been attributed to some profound mental shock, such as the loss of friends or financial reverses, but other similar shocks and losses were frequently noted in which no phychosis followed. Why, then, should any persons sustaining similar shocks, or submitting to like operations, develop a psychosis unless there were some inherent weakness or predisposition to insanity in those who did become insane? It seemed impossible to say definitely that the psychosis in any given case was the result of an operation.

Dr. L. Pierce Clark said that while his experience had been limited in observation of these cases it coincided with Dr. Hammond's views expressed in the paper of the evening. The occurrence of insanity after such operation seemed to him to argue for a primary constitutional defect, a marked predisposition. The exhaustion, fatigue, and worry leading to such operation, while considerable in degree, could not be regarded in any other light than as inciting factors to insanity.

Dr. Carlos F. Macdonald coincided with the position taken by Dr. Hammond with reference to the etiological importance of heredity in these cases. He was disposed to attach more and more importance to heredity as a causative factor in all forms of insanity. He thought it was rarely the case that a surgical operation of so serious a nature as oophorectomy produced insanity except in individuals who had an unstable mental and nervous organization, whether inherited or acquired. As a matter of fact, it was exceptional for insanity to follow surgical operations, or severe injuries of any kind, even injuries to the head, although it was a common idea, even among the profession, that injuries to the head frequently resulted in mental disease. In determining the cause of the disease in a given case we were too much in the habit of seeking for some event or incident in the life of the individual, some injury or disease outside the brain, and to regard that as the cause of the mental disorder. For himself, he had come to attach less and less importance to the so-called exciting causes of insanity and to look for the predisposing causes

Alcohol, for example, rarely produced insanity except in persons who were congenitally or otherwise predisposed thereto. In paresis, also, writers attached far too much etiological importance to excesses, particularly sexual excesses, when, as a matter of fact, many individuals were given to excesses of that kind who never succumbed to mental disease. As Dr. Hammond had well said, there must be a predisposition to the disease before these so-called exciting causes could become operative. A few years ago it was a popular fad with gynecologists to remove the ovaries for the cure of insanity. That idea was practically exploded now among alienists. He had had under his care for ten years a woman, fifty-eight years of age, who about fifteen years ago had her ovaries removed. The operation not only failed to cure her of her insanity, but she was markedly erotic, notwithstanding the removal of her ovaries and the fact that she had passed the usual age of the climacteric. The only way in which what we were accustomed to call the exciting causes of insanity could become operative was by undermining the general health and thus bringing about a condition of malnutrition of the brain, and thereby predisposing the individual to a true psychosis. This would apply to surgical operations as well as to other exciting causes.

Dr. William Hirsch said that in the subject which Dr. Hammond had discussed there were several points on which he thought every psychiatrist ought to take a decided stand. It was not long ago that just the opposite standpoint was taken by all gynecologists, and he did not agree with Dr. MacDonald, that this view was entirely exploded. He encountered a great many cases in which the question of removal of the ovaries came up without any local reason whatever. Eight years ago he had under his care a young woman who had at the time an acute psychosis. During her illness quite a number of consultations took place, and besides others the patient was seen by the most prominent gynecologists of that time. He positively insisted upon the removal of the ovaries. They were not diseased, but he insisted on curing the psychosis by removing the ovaries, and cited many cases of a similar kind. The speaker was utterly opposed to the operation, which, therefore, was not done. In the meantime the woman lost a child, which would undoubtedly have had a lasting effect on her mind if she could not have become pregnant again, which she did after a few years. She was now perfectly well. The speaker said he was entirely convinced that if the ovaries had been removed she would not have recovered from her mental trouble. Another point of importance was the question whether the removal of the ovaries had a specific effect on the mental condition as did the removal of the thyroid gland. This was a question which could not be decided theoretically, but merely by practical experience, and he did not think that anybody could say that his clinical experience justified any such assumption. After complete removal of the thyroid gland we were bound to expect certain symptoms, while we knew that no special symptoms necessarily followed the removal of the ovaries. Therefore he did not think the ovaries had any physiological function except the sexual function. For this reason the removal of the ovaries could not produce insanity any more than any other operation. The speaker fully coincided with those who held that view, except, perhaps, for those psychical reasons which Dr. Hammond mentioned. Of course the shock and the morbid ideas connected with this operation might be much greater than those of any other operation, but the psychosis itself would be the same as any other post-operative psychosis, which was exactly the same as a traumatic psychosis. There was such a thing as traumatic psychosis. He personally held that a traumatic psychosis was clinically well marked and could be diagnosed merely from its clinical symptoms. These cases were not seen in institutions, and were more frequent in private practice, for the reason that the true traumatic psychoses ran a very short course. He had seen a number of these cases which passed into wild delirium, connected with hallucinations, interrupted by lucid intervals, and lasting altogether only a few weeks at the utmost. The third point was the question whether any normal individual, with a perfectly normal mind, could ever acquire a post-operative psychosis, or whether it required a predisposition, such as congenital malformation of the psychical organ or constitutional inferiority. Dr. Hirsch fully agreed with all the speakers that a perfectly normal brain could not acquire a psychosis after any operation, unless it were an organic trauma to the brain. From mere shock from an operation in any part remote from the brain no mental disease would develop, unless there were such a predisposition. He did not quite agree with Dr. Hammond in putting paranoia with those diseases which could be acquired by a trauma. A normal man could never become a paranoiac. Paranoia was an exquisitely degenerative disease; that is, the mind of a paranoiac never was a normal one, even if the paranoia did not manifest itself as such in earlier life.

Dr. E. A. Macdonald said that he could not add anything to what the other gentlemen had said, and with which he entirely agreed. His own experience in hospital superintendency had not brought to notice a great many cases of insanity caused by operations upon the uterus and its appendages, this being partly, no doubt, due to the fact that in the main he had been connected with hospitals where only male patients were treated. Dr. Carlos Macdonald had anticipated him in referring to the much more frequent claim that *sanity* follows such operations in the case of the *insane*. He did not quite believe with Dr. Macdonald that such claims of the gynecologists, as he suggested, were at an end, though they were by no means so common as they were a few years ago. A number of years ago—as Dr. Hamilton would remember, because he was then editor of a journal that took particular notice of the claim—a distinguished gynecologist came to New York and made the statement publicly that at least 85 per cent. of insanity in women was distinctly traceable to disease of the uterus and appendages, and that cure was to be found in operation upon these organs. Dr. Hamilton would also recall some cases in which without special symptoms the cause of insanity was attributed to the ovaries and operation was performed, perfectly healthy ovaries being removed. In one particular case this was done in spite of his and the speaker's protest. What the effect of the operation upon the insanity might have been he could not say, because the patient died under the operation. Since that time he had seen no reason to alter his opinion that operations upon the uterus or the ovaries had very little specific importance in the production of insanity. In the few cases which he had seen of insanity following such operations he thought it was not due to the particular operation, but to the after-effects—shock, exhaustion, etc.—incident to any surgical procedure.

Dr. Allan McLane Hamilton said that his experience had been considerable, and he knew of many cases where, in the face of the objections of himself and others, oophorectomy had been performed. For the most part these patients presented symptoms that in no way could be connected with the ovaries or pelvic organs, and he recalled even one alcoholic dement who was spayed. He remembered very well the cases referred to by Dr. A. E. Macdonald, and the agitation at the time when for a considerable period the gynecologist was consulted to the exclusion of the psychiatrist. The case related by the doctor was one of catalepsy, and, despite the operation, the patient not only showed no return to ordinary consciousness, but died in a few days thereafter from the effects of the operation. He wrote a paper at the time and cited some examples which clearly proved that no benefit followed the removal of the ovaries, but actual harm was instead done. In some examples of the psychosis which was now known as precocious dementia, which was occasionally recoverable, this pernicious interference had a lamentable effect, and the psychic shock was always a disastrous element. In but one

case had the speaker seen good results from the suggestion of an operation of this kind, and this was in a neurasthenic with insistent ideas. The fear of the surgeons really aroused or cured the young woman. Dr. Hamilton said we had a duty to perform, and that was to educate, or at least caution those daring members of our profession who not only wrongly connected neuroses and actual organic disease, but psychoses as well with various bodily ailments and defects. It was not so long ago that epilepsy, and even tabes, were cured (?) by section of the ocular muscles, and Erb's spastic paralysis was cured by circumcision. There seemed to be a great deal of ignorance about the somatic causation of insanity, and this had led to errors not only in diagnosis, but treatment as well.

Dr. Hammond, in closing the discussion, agreed with Dr. Hirsch's remarks concerning paranoia, saying he did not mean to imply that operation on the ovaries could cause paranoia, but that there are many cases in which paranoiac symptoms are dormant until after operation on the pelvic organs, when such symptoms become very prominent.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundredth Annual Meeting, Held in Albany, January 30, 31, and February 1, 1906.

(Special Report to the MEDICAL RECORD.)

(*Concluded from page 202.*)

THE PRESIDENT, DR. JOSEPH D. BRYANT OF NEW YORK, IN THE CHAIR.

THURSDAY, FEBRUARY 1—THIRD DAY.

Clinical Notes on Exophthalmic Goiter.—Dr. W. GILMAN THOMPSON of New York read this paper, which was based upon a study of upwards of 40 collected cases, including several treated with Dr. Rogers' cytotoxic serum. The object of the research was to emphasize the importance of certain symptoms which pointed conclusively to the toxic rather than the purely neurotic character of the disease. In almost all serious cases, and in probably all fatal cases, there were definite febrile exacerbations, accompanied by acute dilatation of the heart, the development of murmurs, intense precordial distress, often gastric or other abdominal pain, attacks of vomiting and diarrhea, active perspiration, sensations of suffocation, insomnia and great restlessness, an erythematous rash, and edema of the feet and legs. Such a symptom group pointed clearly to the influence of a toxemia due to hyperthyroidism. The effect of the Rogers cytotoxic serum was to inhibit the hyperthyroidism. This serum was prepared 'from the diseased human thyroid gland, which was extracted and passed through living rabbit's blood. The resulting serum was found to contain both a cytotoxin and an antitoxin. Dr. Thompson had seen several of the cases treated by Dr. Rogers with the serum, in which remarkable and rapid improvement had resulted—in two of the writer's cases after all hope of recovery through ordinary means of treatment had been abandoned. Dr. Thompson further advanced the view that in many cases the agent which excited the acute exacerbations met with in exophthalmic goiter was to be found in some simple intercurrent infection, such as an attack of bronchitis, pharyngitis, or very often acute tonsilitis. One or other of these infections was observed in 16 out of 43 cases of Graves' disease at the onset of serious acute exacerbations.

Simplified Method of Testing for Blood in Feces.—Dr. A. L. BENEDICT of Buffalo said that Boas had applied to feces the ordinary guaiac test for hemoglobin, which could not be applied to feces directly, as the consistency and opacity of the fecal mass obscured the characteristic blue color. The essential point in the Boas test was the preparation of the clear extract of blood pigment by means of acetic acid and ether and, as the ether would also dissolve out the fats, a preliminary extract of fats was made with ether alone. These two extractions, while not especially troublesome in a well-equipped laboratory, were somewhat tedious and disagreeable, as the contents of the test tube were liable to spurt. After various trials of all sorts of extracting agents and checking the results with the regular Boas test, the writer devised the following, the use of gasoline being suggested by his previous modification of the indican test in urine, gasoline having been found to extract indigo better than chloroform did. About two c.c. of liquid, or one c.c. of solid feces, was taken, diluted, and shaken with water, if necessary, to reduce it to the consistency of diarrheal discharge. Either a test tube or bottle might be used. A given quantity of gasoline was added. A little freshly whittled gum guaiac dissolved in about one c.c. of grain or wood alcohol, was added, and then a few drops of ozonized (c.p.) oil of turpentine. While fats were, to some degree, extracted by the gasoline, they did not interfere with the test and, if blood was present in detectable amounts, the gasoline assumed a distinct bluish tinge. The gasoline had the practical advantage of deodorizing. As no elaborate apparatus was needed and any clear glass bottle could be used, the test could conveniently be applied at the patient's residence and small vials of fresh tincture of guaiac and turpentine could be carried in the pocket, if desired.

The Somatic Evidences of Syphilis in Paretics.—Dr. JAMES M. WINFIELD of Brooklyn read this paper by title, reporting the results of examinations for the external evidences of syphilis among 241 patients in six of the New York State Hospitals for the Insane. The doctor found that nearly 75 per cent. of those examined showed the various signs and stigmata of cutaneous syphilis. In the individual hospitals the largest percentage was found in those of the rural districts and the one for the criminal insane. From his findings the doctor concluded that syphilis was a very important factor in the production of general paralysis of the insane.

An Inconsistent Feature of the Oath as at Present Administered.—Dr. WILLIAM BROWNING of Brooklyn said that as medical men were probably called upon more often than any other class to give testimony, they had an ample warrant for considering forms of procedures. It was to the second portion of the oath, referring to the "whole truth," that attention was directed. It was a common criticism that frequently the witness was not permitted to fulfill this. It could be corrected by some simple modification of the present wording.

Diaphragmatic Grooves on the Liver.—Robert Orton Moody writes that grooves on the convex surface of the liver have been more or less carefully studied since the close of the sixteenth century. There has been much discussion concerning the etiology of these grooves which has resulted in the development of various theories. Although, as the writer states, it is evident that study of this subject so far can yield no theoretical generalizations, nevertheless it suggests some new possible causes in certain cases and presents some interesting evidence which modifies previous interpretations. From his careful researches, Moody presents the following conclusions: Diaphragmatic grooves are found in the fetus as early as seven months, in infancy, in youth, and in old age. The grooves may or may not contain folds of the diaphragm; the latter are sometimes permanent and sometimes disappear when the liver and diaphragm are removed from the body. The comparatively small number of cases recorded does not justify definite generalizations concerning the frequency of these grooves and the age and sex of subjects in which they are most often found. Many factors take part in the production of the grooves, some of which may be congenital conditions of the diaphragm, difficult respiration, constriction of the thorax and abdomen by clothing, severe diaphragmatic pleurisy, localized peritonitis, and a disproportionate ratio between the size of the liver and of the abdominal cavity.—*Bulletin of the Johns Hopkins Hospital.*

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

THE FOOD FACTOR IN DISEASE. In two volumes, by FRANCIS HARE, M.D. 8vo, 1,032 pages, illustrated, muslin. Longmans, Green & Co., New York. Cloth, $10.00, net.

MILITARY HYGIENE. By ROBERT CALDWELL, F.R.C.S. 8vo, 416 pages, illustrated, muslin. Wm. Wood & Co., New York. Cloth, $4.00, net.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Twentieth Session. 8vo, 546 pages, illustrated, muslin.

A COMPEND OF MEDICAL CHEMISTRY, INORGANIC AND ORGANIC, INCLUDING URINARY ANALYSIS. By HENRY LEFFMANN, M.D. Fifth Edition, revised. 16mo, 200 pages, illustrated. P. Blakiston's Son & Co., Philadelphia.

PHARMACOLOGY AND THERAPEUTICS. By REYNOLD WEBB WILCOX, M.A., M.D., LL.D. Sixth Edition, 8vo, 1,010 pages, muslin. P. Blakiston's Son & Co., Philadelphia.

MASSAGE AND THE SWEDISH MOVEMENTS. By KURRE W. OSTROM. Sixth Edition, 12mo. 184 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia.

MAN AND HIS POISONS. By ALBERT ABRAMS, A.M., M.D. 8vo, 268 pages, illustrated, muslin. Price, $1.50. E. B. Treat & Co., New York.

THE MANAGEMENT OF A NERVE PATIENT. By DR. ALFRED T. SCHOFIELD. 12mo, 267 pages, muslin. P. Blakiston's Son & Co., Philadelphia.

THIRTY-FIFTH ANNUAL REPORT OF THE SECRETARY OF STATE ON THE REGISTRATION OF BIRTHS AND DEATHS, MARRIAGES AND DIVORCES IN MICHIGAN FOR THE YEAR 1901. By FRED M. WARNER, Secretary of State. Edited by Cressy L. Wilbur, M.D. 8vo, 117 pages, muslin. Robert Smith Printing Company, Lansing, Mich.

REFRACTION, INCLUDING MUSCLE IMBALANCE AND THE ADJUSTMENT OF GLASSES. By ROYAL S. COPELAND, A.M., M.D., and ADOLPH E. IBERSHOFF, M.D. 8vo, 144 pages, illustrated, muslin. Price, $1.50, net. Boericke & Tafel, Philadelphia.

SURGICAL NURSING AND THE PRINCIPLES OF SURGERY FOR NURSES. By RUSSELL HOWARD, M.B., M.S., F.R.C.S. 12mo, 318 pages, illustrated, muslin. Edward Arnold, London, England. Price, $1.70, net.

QUIZ-COMPENDS, A COMPEND OF DISEASES OF THE SKIN. By JAY F. SCHAMBERG, A.B., M.D. Fourth Edition. 12mo, 209 pages, illustrated, flexible muslin. P. Blakiston's Son & Co., Philadelphia.

URINARY ANALYSIS AND DIAGNOSIS BY MICROSCOPICAL AND CHEMICAL EXAMINATION. By LOUIS HEITZMANN, M.D. Second Edition. 8vo, 319 pages, illustrated, muslin. Price, $2.50, net. William Wood & Co., New York.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS OR THE ACTION OF DRUGS IN HEALTH AND DISEASE. By ARTHUR R. CUSHNY, M.A., M.D. Fourth Edition. 8vo, 752 pages, illustrated, muslin. Price, $3.75, net. Lea Brothers & Co., Philadelphia.

THE STRANGE STORY OF THE QUILLMORES. By A. L. CHATTERTON. 12mo, 272 pages, illustrated, muslin. Stitt Publishing Company, New York.

A MANUAL OF MATERIA MEDICA AND PHARMACOLOGY. By DAVID M. R. CULBRETH, Ph.G., M.D. Fourth Edition. 8vo, 976 pages, illustrated, muslin. Lea Brothers & Co., Philadelphia.

FOOD AND DIET IN HEALTH AND DISEASE. By ROBERT F WILLIAMS, M.A., M.D. 12mo, 392 pages, muslin. Price, $2.00, net. Lea Brothers & Co., Philadelphia.

A MANUAL OF BACTERIOLOGY. By HERBERT U. WILLIAMS, M.D., revised by B. Meade Bolton, M.D. Fourth Edition 8vo, 357 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia.

THE PATHOLOGY OF THE EYE. By J. HERBERT PARSONS B.S., D.Sc., F.R.C.S. Volume 2, Histology, part 2. 8vo 770 pages, illustrated, muslin. G. P. Putnam's Sons, New York.

THE ANIMAL PARASITES OF MAN. By Dr. MAX BRAUN. Translated by Pauline Falcke. Third Edition. 8vo, 453 pages, illustrated, muslin. William Wood & Company, New York. Price $5.00 net.

A TEXT BOOK OF PSYCHIATRY FOR PHYSICIANS AND SURGEONS. By LEONARDO BIANCHI, M.D., JAMES H. MACDONALD, M.B., Ch.B. Glasg. 8vo, 904 pages, illustrated. muslin William Wood & Company, New York. Price $6.00 net.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending February 3, 1906.

	Cases	Deaths
Measles	1489	52
Diphtheria and Croup	378	39
Scarlet Fever	208	7
Smallpox	.....	.....
Chickenpox	180	.....
Tuberculosis	343	178
Typhoid Fever	41	3
Cerebrospinal Meningitis	28	17
Typhus Fever	.....	.....
Yellow Fever	.....	.....
Cholera	.....	.....
Totals	2,667	296

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ended February 3, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Arkansas, Fort Smith	Jan. 13–20	1	..
California, San Francisco	Jan. 13–20	14	..
Delaware, Wilmington	Jan. 20–27	3	..
Florida, Alachua County	Jan. 20–27	3	..
Gadsden County	Jan. 20–27	1	..
Jacksonville	Jan. 20–27	8	..
Polk County	Jan. 20–27	1	..
Kentucky, Covington	Jan. 20–27	8	..
Louisiana, New Orleans	Jan. 20–27	4	..
Maryland, Baltimore	Jan. 20–27	1	..
Nebraska, South Omaha	Jan. 13–27	8	..
Ohio, Cincinnati	Jan. 19–26	7	..
Dayton	Jan. 20–27	1	..
South Carolina, Camden	Jan. 13–20	1	..
Wisconsin, Appleton	Jan. 20–27	8	..

SMALLPOX—INSULAR.

Porto Rico, San Juan	Dec. 1–31	..	Present.

SMALLPOX—FOREIGN.

Argentina, Buenos Ayres	Oct. 1–31	..	47
Canada, New Brunswick Queens County	Jan. 9–18	..	Present.
Sunbury County	Jan. 9–22	106	..
China, Shanghai	Dec. 21	..	Present.
France, Paris	Jan. 6–13	17	1
Ecuador, Guayaquil	Dec. 17–24	..	2
India, Bombay	Dec. 26–Jan. 2	..	7
Calcutta	Dec. 9–16	..	20
Karachi	Dec. 25–31	3	1
Madras	Dec. 16–20	..	15
Italy, General	Jan. 4–11	22	..
Mexico, Tuxpam	Jan. 16–23	..	1
Russia, Odessa	Dec. 30–Jan. 6	16	2
St. Petersburg	Dec. 23–30	10	3
Spain, Barcelona	Jan. 1–10	..	4
Cadiz	Dec. 1–31	..	1
Turkey, Constantinople	Dec. 17–31	..	8

YELLOW FEVER—UNITED STATES.

Louisiana, Jefferson Parish (Kenner)	Jan. 28	1	..

YELLOW FEVER—FOREIGN.

Ecuador, Guayaquil	Dec. 17–24	..	8
Mexico, Merida	Jan. 14–20	2	1
Veracruz	Jan. 14–20	2	1

CHOLERA.

India, Calcutta	Dec. 9–16	..	61
Madras	Dec. 16–20	..	10
Rangoon	Dec. 16–23	..	13
Russia, Government of Lomza	Dec. 23–30	4	1
Government of Ostrow	Dec. 23–30	1	1
Government of Plock	Dec. 14–17	50	20
Government of Siedlec	Nov. 23–Dec. 26	22	10
Warsaw	To Dec. 18	9	5

PLAGUE.

Africa, Portuguese East Africa, Chinde	Nov. 12–18	1	1
India, Bombay	Dec. 26–Jan. 2	..	9
Calcutta	Dec. 9–16	..	21
Karachi	Dec. 24–31	20	15
Japan, Shimonseki	To Dec. 23	5	..
Maritius	Dec. 8–28	15	12
Peru, Callao	Dec. 11–20	1	1
Lima	Dec 11–20	1	1
Mollendo	Dec. 11–20	1	..
San Pedro	Dec 11–20	..	4

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 7.
Whole No. 1841.

NEW YORK, FEBRUARY 17, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

THE TEACHERS' PART IN THE TUBERCULOSIS PROBLEM.*

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NEW YORK.

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MR. CHAIRMAN, LADIES, AND GENTLEMEN:—

As a director of the National Association for the Study and Prevention of Tuberculosis and as a member of the Tuberculosis Committee of the Charity Organization Society, I desire, in the name of our association and of the committee, to express my deep appreciation of the valuable cooperation which the Board of Education of the City of New York has given us by inviting its 14,000 school teachers to visit our tuberculosis exhibition. Personally I desire to express my most heartfelt thanks to my colleagues on the board of directors and the committee for the honor they have conferred upon me by selecting me as the speaker this evening.

It is indeed a privilege to address the teachers of a great city like this—the educators of the men and women of the coming generation. That you have come out in such large numbers is evidence of what a high conception you have of your own calling, for in addition to the many duties you have to perform, you have come here to hear me discuss a subject which is not pleasant, and perhaps not even interesting. But, in your labors as teachers as well as in ours as physicians, we must often deal with subjects which are neither pleasant nor interesting. A sense of duty alone helps us to accomplish such tasks.

The subject assigned to me to-night is "The Teachers' Part in the Tuberculosis Problem." In order that you may perform your part in the campaign against this common foe, which, on account of its prevalence and great mortality it causes, has very justly been called by the immortal Oliver Wendell Holmes "the great white plague." It is above all necessary that you should know something of the nature of the disease which we seek your cooperation to combat.

As teachers you should know even something of the history of the disease. Pulmonary tuberculosis, phthisis pulmonalis, or consumption, was well known to many of the ancient physicians, and it may be a surprise to some of you to learn that Hippocrates, the most celebrated physician of antiquity, who lived from 460 to 377 B. C., and who may be truly called the father of scientific medicine, described consumption as a disease which is "the most difficult to treat, and which proves fatal to the greatest number of people." Isocrates, also a Greek physician, who lived about the fifth century before Christ, was the first to write of tuberculosis as a disease transmissible through contagion. In the middle ages (1550) the celebrated physician, Montano, declared consumption to be one of the most dangerously contagious and most easily contracted of diseases. An equally strong advocate of the theory of contagion was the celebrated anatomist, Morgagni (1682-1771), who never performed an autopsy on an individual who had died from tuberculosis. In Naples a royal decree, dated September 20, 1782, ordered the isolation of consumptives and the disinfection of their apartments, personal effects, furniture, books, etc., by means of vinegar, brandy, or lemon juice, seawater or fumigation. Any violation of this law was punished, if the individual was an ordinary mortal, by three years in the galleys, and if he happened to be a nobleman he was sent for the same length of time to the fortress and had to pay a fine of 300 ducats. The physician who failed to notify the authorities of the existence of a tuberculous patient was fined 300 ducats for the first offense, and a repetition of the neglect would banish him from the country for ten years.

In the first half of the nineteenth century little attention was paid to the theory of infectiousness of tuberculosis even by medical men. The contagiousness or communicability of the disease could not be scientifically demonstrated, and although there were physicians here and there who believed in the infectiousness of the disease, nothing positive was taught in regard to it at the centers of medical learning. A last, in 1865, the French physician, Villamin, demonstrated beyond a doubt that tuberculosis could be transmitted from one individual to another. He inoculated animals with tuberculous substances and reproduced tuberculosis not only in the lungs, but also in other portions of the body.

After this discovery there seemed to be no longer a doubt that tuberculosis was an infectious disease and that for its production a specific germ was essential. The discovery of this specific organism (Bacillus tuberculosis) was reserved to the great German scientist, Robert Koch (1882).

How very prevalent this disease is is known to most of you, and I will not detain you with detailed statistics, but simply state that each year the world yields up 1,095,000, each day 3,000, each minute two of its people, as a sacrifice to this plague. Of the 80,000,000 individuals now peopling the United States more than 10,000,000 must inevitably die of this disease if the present ratio is kept up. According to some statisticians, every seventh, and according to others, every sixth death is due to tuberculosis.

On account of the fearful prevalence of this disease the Germans very appropriately have called consumption "eine Volkskrankheit"—a disease of the masses. And yet, in the light of modern science, we as physicians must acknowledge consumption,

*Address delivered before the teachers of the public schools of the City of New York at the American Tuberculosis Exhibition, held in the American Museum of Natural History, under the auspices of the National Association for the Study and Prevention of Tuberculosis and the Committee on Tuberculosis of the Charity Organization Society, December 8, 1905; revised for publication in the MEDICAL RECORD, February 3, 1906.

although the most prevalent of all infectious and communicable diseases, to be nevertheless the most curable and most preventable of them all.

The disease is chronic, which means that it lasts long; it is communicable, which means that it can be transmitted from man to man, from man to beast and from beast to man. It is preventable, which means that it is in the power of man to stop its propagation. It is curable, because by judicious treatment the majority of patients can be cured, particularly in the early stages.

What are the characteristics of this complex disease? It is caused by the presence of the tubercle bacillus, or germ of consumption in the lungs. It is locally characterized by countless tubercles, that is to say, small rounded bodies, visible to the naked eye. The bacillus of tuberculosis is a minute organism, in the shape of a cylindrical rod, visible with a high-power microscope only after certain staining reagents have been applied to it. This microorganism, belonging to the order of schizomycetes or fission-fungi in the lowest scale of vegetable life, is the specific microbe of consumption; without its presence there is no tuberculosis. This parasite not only gradually destroys the lung substance through ulcerative processes, but at the same time gives off certain poisonous substances called toxins which give rise to various, and often serious, symptoms.

The important symptoms of pulmonary tuberculosis are cough, expectoration, fever—especially in the evening hours—difficulty in breathing, pains in the chest, night-sweats, loss of appetite, hemorrhages, and emaciation. The tubercle bacillus is found in the matter expectorated.

How may this germ of consumption enter the human system?

There are really three methods whereby this germ may enter, namely, by inhalation, that is, being breathed into the lungs; by ingestion, that is, being eaten with tuberculous food; and by inoculation, that is, the penetration of tuberculous substance through a wound in the skin. Let us speak first of the most frequent method of the propagation of tuberculosis, namely, that arising from the indiscriminate deposit of tuberculous sputum. A consumptive individual, even at a period when he is not confined to his bed, may expectorate enormous quantities of bacilli. By careful observers it has been estimated to amount in some individuals to about 7,000,000,000 per day. Now, if the expectoration, or spittle, is carelessly deposited here and there, so that it has an opportunity to dry and become pulverized, the least draft or motion in the air may cause it to mingle with the dust, and the individual inhaling this dust-laden atmosphere is certainly exposed to the danger of becoming tuberculous if his system offers a favorable soil for the growth of the bacilli. By "favorable soil for the growth of the bacilli" must be understood any condition in which the body is temporarily or perpermanently enfeebled. Such a condition may be inherited from parents, or acquired through alcoholism or drunkenness, or other intemperate habits, through privation or disease.

Besides the danger arising from carelessly deposited sputum, or spittle, the inhalation or ingestion of the small particles of saliva which may be expelled by the consumptive during his so-called dry cough, when speaking quickly or loudly, or when sneezing, must also be considered as dangerous for those who come in close contact with the invalid. These almost invisible drops of saliva may contain tubercle bacilli. Recent experiments in this direction have shown the possibility of infection by this means.

The next most frequent method of the propagation of tuberculosis is through the ingestion of the bacilli, that is to say, when the germ of consumption is taken with the food.

The third and much less frequent cause of tuberculosis is inoculation, or penetration of the tuberculous substance through the skin.

What should we do to stop the first and most frequent source of the dissemination of the bacillus?

A patient suffering from pulmonary consumption should know that, no matter in what stage of the disease he may be, his expectoration, or spittle, may spread the germ if the matter expectorated is not rendered innocuous before it has a chance to dry and become pulverized. The patient should, therefore, always spit in some receptacle intended for that purpose. It is best to have this vessel made of metal so it will not break. It should be half filled with water or some disinfecting fluid, the main thing being to make it impossible for the expectoration to dry.

In schools, factories, stores, railroad cars, waiting rooms, court rooms, restaurants, saloons, meeting places, theaters, menageries—in short, wherever many people congregate—there should be a sufficient number of cuspidors well kept and regularly cleaned. They should be made of unbreakable material and have wide openings. If such measures are carried out, there will be no excuse for anyone to expectorate on the floor and thus endanger the health of his fellowmen.

When out of doors the patient should use a pocket-flask of metal, strong glass, or pasteboard. There are numerous kinds of flasks for this purpose in the market.

A handkerchief should never be used as a receptacle for sputum. Patients who are too sick to make use of light porcelain or aluminum cups should have a number of moist rags within easy reach. Care should be taken that the rags always remain moist, and that the used ones are burned before they have a chance to dry. The paper spit-cups with their contents should, of course, also be destroyed by fire.

There will always be some consumptives who cannot be persuaded to use the pocket-flask, for the reason that they do not wish to draw attention to their malady. The only thing for such people to do is to use squares of soft muslin, cheese cloth, cheap handkerchiefs, or Japanese paper handkerchiefs specially manufactured for that purpose, which can be burned after use. They should place in their pockets a removable lining of rubber or other impermeable substance which can be thoroughly cleaned. This additional pocket could be fastened to the inside of the ordinary pocket by clamps, and would thus be of no inconvenience to the patient. A pouch of vulcanized rubber or an oriental tobacco pouch may be used in place of the extra pocket of impermeable material.

The danger of dissemination of the bacilli through the so-called dry cough is relatively small; we should, nevertheless, insist that the patient holds a handkerchief before his mouth and nose when he coughs or sneezes. The consumptive should be advised to carry two handkerchiefs with him, one to hold before his mouth and to wipe it with after having expectorated, the other to use only to wipe his nose. By being careful with the use of his handkerchiefs, the danger of infecting his nose and bronchial tubes will be materially lessened.

All soiled linen (sheets, pillow cases, underwear, napkins, handkerchiefs, etc.) used by the consumptive should not be handled more than necessary, but should be placed in water as soon as possible after

removal from bed or body. It is better to wash these articles separately, and only after having been thoroughly boiled should they be put with the common laundry. Wherever it is not possible to carry out these precautionary measures in their entirety one should strive to follow them as far as it is in one's power.

Concerning the danger from infection through tuberculous food, we will say that whenever one is not reasonably certain that the meat he eats has been carefully inspected and is free from disease germs, it should be thoroughly cooked. By this means one is certain to kill all the dangerous microorganisms. Against the sale of tuberculous milk there are very excellent laws in some States of the Union which are rigorously enforced. In some the laws are less good, and in some there are no laws at the present time.

In justice to farmers and dairymen, it must, however, be said that there are many who do their very best to protect themselves and their fellowmen from the danger of tuberculosis. They have their cows tested regularly, destroy the animals which are found to be tuberculous, and keep their stables and utensils for milk as clean as possible.

Unless one can be reasonably sure that the cows from which the milk is derived are healthy, the milk should be boiled or sterilized before use, especially when it is intended as food for children. Milk obtained from stores and from milk peddlers should invariably be submitted to boiling or sterilization. When milk is kept slowly boiling for five minutes all the bacilli are killed, and the same result is obtained by the sterilizing process which is to keep the milk heated for at least half an hour at a temperature of about 70° C. or 160° F. There are now in the market a number of cheap and practical apparatuses for sterilizing milk, which can be obtained in almost any drug store.

Raw fruit bought from the pushcart man, or, for that matter, derived from any other source, should be washed, peeled, or cooked before being eaten. You teachers should impress these precautions upon the little ones and the big ones in your charge. If simple warning does not suffice, tell the children how some of the enterprising pushcart men treat an apple, for example, to make it shine and seem appetizing.

There is another way whereby the germs of consumption may possibly enter our stomach or intestines, namely, through kissing a consumptive or using utensils which have been soiled by the saliva of the patient. Therefore, the consumptive should never kiss, no matter whom, on the mouth, and children should be taught to allow no one to kiss them, except on the cheek, or not to be kissed at all.

Tuberculous patients should have their own drinking glasses, spoons, forks, etc., or, at least, all table utensils which have served for them should be placed in boiling water after use.

It is, of course, also possible for the consumptive to contract intestinal tuberculosis when, out of false modesty, he swallows his expectoration. May I be permitted to insert here a little medical advice? Unless the patient feels that he must expectorate, he should not cough. Dry coughing is scratching the throat because it tickles. This is not only impolite and unpleasant, but it also injures the patient's throat. With the exercise of a little will power and discipline one can suppress this dry and unnecessary cough. The consumptive patient should remember never to touch food before having washed his hands very thoroughly. Even with the greatest care it is possible that he may have soiled his hands with tuberculous expectoration.

Inoculation, or the penetration of tuberculous substance through the skin happens, perhaps, most frequently through injuries received while cleaning nicked or chipped glass or porcelain cuspidors which have been used by consumptives. It is also possible for the bacilli to enter the circulation if the person cleaning the spittoon happens to have a wound or open sore on his hands. Persons entrusted with the care of the spittoons in a private sick-room or an institution for consumptives should wear rubber gloves while cleaning these vessels.

At times the patient may inoculate himself by placing an accidentally injured finger in his mouth, or by carelessly soiling an open wound with his expectoration. If one has been unfortunate enough to receive an injury and tuberculous inoculation is feared, the best thing to do is to let the wound bleed freely, wash it thoroughly with water that has been boiled, with a five per cent. solution of carbolic acid, or with pure alcohol; dress the wound with a clean rag that has been dipped in any of these liquids, and seek as soon as possible the advice of the physician. This is a good thing to remember when the little ones under your charge come to you with injured fingers from no matter what source. By such precautionary measures you are almost certain to avoid serious wound infection.

I have thus far spoken only of that type of tuberculosis which manifests itself in the pulmonary form, that is to say, consumption of the lungs, of intestinal tuberculosis, or consumption of the bowels, and tuberculosis of the skin, or lupus. But you must know that every organ in the body, such as the throat, the bones, and the coverings of the brain and spinal column, is not infrequently invaded by the tubercle bacillus. In the last mentioned form the disease is technically called tuberculous meningitis.

After all you that have heard so far of the contagiousness, or, rather, the communicability of tuberculosis, and consumption in particular, I do not wish you to think that a breath accidentally taken in an atmosphere laden with bacilli would certainly render a healthy individual consumptive, or that by a swallow of tuberculous milk, or a little injury from a broken cuspidor one must necessarily become tuberculous. The secretions of our nasal cavities, doubtlessly also the blood, and the secretions of the stomach of the healthy individual, have bactericidal properties; that is to say, they kill the dangerous germs before they have a chance to do harm. Therefore, healthy men and women should not have an exaggerated fear of tuberculosis, but should, nevertheless, not recklessly expose themselves to the danger of infection.

Who are the individuals who must be particularly careful so as not to be attacked by the almost ever present tubercle bacillus?

There are four classes of these persons. First, those who have a hereditary predisposition to consumption; secondly, those who have weakened their system and thus predisposed themselves to the disease by the intemperate use of alcoholic beverages, by a dissipated life, by excesses of all kinds, etc.; thirdly, those whose constitution has been weakened by disease—pneumonia, typhoid fever, smallpox, measles, whooping-cough, syphilis, influenza, etc.; fourthly, those whose occupations, trades, or professions, such as printing, hat-making, tailoring, weaving, and all occupations wherein the worker is much exposed to inhalation of various kinds of dust, render them particularly liable to consumption.

Before I proceed to give you a few essential points showing how to overcome such a predisposition to

consumption, let me answer the question which is probably in the minds of many of you, namely, "What about those who have a so-called hereditary consumption?" Permit me to say that the popular notion concerning hereditary consumption is, in my humble opinion, absolutely erroneous. Consumption has, perhaps, never been inherited either from the father or the mother, but the child has usually been infected by its well-meaning but ignorant consumptive parents after birth. The mother has kissed the child, taken it into her bed, allowed it to use the same spoon or other utensils which she has used herself, and thus unconsciously has conveyed the disease to her infant.

The need of insisting on the possibility of infection through utensils was once impressed upon me so pathetically and vividly that I shall never forget the incident. I was honored by being called in consultation by a venerable physician, many years my senior, to see a young woman in presumably the earlier stages of consumption. On our way to the house of the patient my venerable colleague told me how careful he had been to instruct the woman of the nature of the disease, and that he had particularly forbidden her to kiss her child. Arrived at our destination I found the patient just giving her baby its lunch. In presenting her beautiful child to me she said, with tears streaming down her cheeks, that ever since her good old doctor had told her that she had consumption she had not once kissed her darling baby. But while telling me this pathetic story she was tasting the mush to judge of its sweetness and temperature, putting the spoon alternately into her own and into her baby's mouth. She would not intrust the feeding of her little one to anybody else.

Through kissing and caressing a consumptive father the child may also be infected, or, again, the one or the other parent may have been careless with their expectoration, and may have soiled the floor where the child plays. It must be obvious to any thinking individual that if such uncleanly habits of the father or mother prevail, the child born healthy is not likely to remain healthy long.

I have said that consumption is not hereditary, and children born of consumptive but intelligent and conscientious parents need not necessarily contract the disease. I, myself, numbers of times have seen children of a consumptive parent grow up to be strong men and women; but their parents were not only careful, clean and conscientious; they were also aware that while they did not transmit consumption to their children, they had transmitted to them a tendency, or predisposition, to this disease. This hereditary predisposition is, however, a condition which can be overcome by judicious training, proper food, plenty of out-door exercise, and the avoidance of all excesses. Every predisposed individual should dress sensibly and according to the season. Never should they wear garments which restrict circulation or hinder the free physiological function of the chest or abdomen. Tight clothing, tight neckwear, tight shoes are all pernicious and particularly dangerous to the individual predisposed to tuberculosis.

I have already hinted at what should be the duty of the parents if they are themselves consumptive and fear to have transmitted to their offspring a predisposition to the disease. Concerning alcoholism, which is so often the forerunner of consumption, I desire to speak plainly. I do not wish to appear to you as a temperance lecturer, condemning all and everything which does not subscribe to the doctrines of the temperance party. I consider alcohol a medicine, at times indispensable in the treatment of certain diseases; but liquor as a beverage is never useful, and nearly always harmful. Alcoholism must be considered the greatest enemy of the welfare of a nation, the most frequent destroyer of family happiness, too often the cause of the ruin of mind and body, and certainly the most active cooperator of the deadly tubercle bacillus.

How to combat alcoholism is in itself a problem. I confess that to my mind the only rational way is to follow the example of Norway and some of the Cantons of Switzerland, by making the manufacture and the sale of alcohol a government affair. Experience in these countries has shown that through such means alone they have been able to reduce alcoholism and its consequent evils—disease, crime, poverty, misery, and want.

Educational propaganda regarding alcoholism will also be helpful. Concerning tuberculosis it should be impressed upon the masses that alcohol, in whatever form it may have been administered, has never been either a prevention or a cure for consumption. Since we have not yet any laws prohibiting the sale of patent preparations, containing a large percentage of alcohol under the guise of medicine, we must educate the people to the true state of affairs. It may surprise you to learn that most of the alcohol sold in this country is not sold over the bar as whiskey, but in the form of patent medicines, and of patent medicines the American people consume, according to the estimate of my venerable friend, Professor A. Jacobi of Columbia University, no less than $200,000,000 worth a year.

Complete analyses of 67 patent medicines have been made by the late Dr. Samuel W. Abbott of the State Board of Health of Massachusetts and published in his Report on Food and Drug Inspection for the year 1902. This list has appeared in an admirable article by Mr. Bok of the *Ladies' Home Journal*, and I must refer my readers who are interested in the subject to these publications.* They show that these 67 analyzed patent medicines, some of them advertised as entirely harmless, or as a cure for inebriety, contain from 6 to 44 per cent. of alcohol. Another article which I would advise teachers and family practitioners to peruse carefully, is the one by Samuel Hopkins Adams, in *Collier's Weekly* of October 28, 1905, entitled, "Peruna and the Bracers." To show the thoroughness of Mr. Adams' investigation, I will simply quote the titles of the subchapters of this contribution to the subject: "What Peruna Is Made Of"; "The Government Forbids the Sale of Peruna to Indians"; "Two Testimonials": "Medicine or Liquor?" "Some Alcoholic Percentages."

Other works, such as those of Professor Osborne of Yale, Dr. Ashbell P. Grinnell, Miss Allen, etc., should be studied by all who are interested in combating alcoholism and tuberculosis. They should be reprinted and receive the largest possible circulation, not only among the ignorant masses but also among the intellectual classes, our statesmen and our ecclesiastics. ' These latter will, perhaps, then refrain from endorsing patent medicines of the composition and effect of which they have not the slightest idea.

In families in which there is a fear of hereditary transmission of the desire for strong drink, even the mildest alcoholic drinks should be absolutely avoided. It would also be best if all people so predisposed, or who may have acquired only the occasional desire for drink, should never smoke, for experience has taught that attacks of dipsomania (periodical sprees)

* In an article entitled "The Family Physician as a Factor in the Solution of the Tuberculosis Problem," which appeared in the *Journal of the American Medical Association* of October 22, 1904, I reproduced the list just as it was sent to me by Dr. Abbott, on account of some inaccuracies which had occurred in other publications.

are often caused by an excessive use of tobacco. The young man starting out in life should take with him the moral training which will enable him to be a gentleman, and be considered a polite gentleman, though he absolutely refuses ever to enter a liquor saloon in order to treat or be treated to drink. It is this treating habit—alas! so prevalent in our American society, which has ruined many a young man and made him a moral and physical wreck. Think of it, ladies and gentlemen, you, the teachers of our boys and girls, what a glorious mission you have in thus combating two diseases of the masses—alcoholism and tuberculosis—at the same time. You are not only teachers, but citizens as well, and as such should encourage the creation of tea and coffee houses, where warm, non-alcoholic drinks, including bouillon, are sold in winter and cold ones in summer. It would be an additional advantage if some of these houses could also offer healthful amusements for old and young. Temperance societies, which through tactful and intelligent propaganda help to combat the fearful evil of alcoholism, should receive encouragement from everybody.

What I have said so far of the causes and prevention of tuberculosis is knowledge which, it seems to me, should be possessed by every person, but you teachers should be particularly posted on the minute details, so that you may not only practise them for your own self-protection, but also preach them, not only as teachers, but also as friends of all the unfortunate.

Thus, if you are perchance in the presence of a consumptive who is not yet under medical care, teach him what you know of the prevention of the disease and advise him to seek the counsel of a competent physician. If he is too poor to pay for a consultation, and too proud to ask it for nothing, tell him to apply to a tuberculosis dispensary or to the Health Department, which will send him one of its physicians without cost. No tuberculous invalid, no matter in what stage of the disease, whether living in a palace or in the poorest tenement house, should be without a medical adviser. If you meet a consumptive who is ignorant of the precautions he should take, do not shun him like a leper, but treat him with kindness and convince him that whatever he does to prevent the spread of the disease among others will also improve his own condition and increase the chances of his recovery. Let me tell you that a clean, conscientious consumptive is as safe a person to associate with as anybody.

Now, let me come to some of the particular duties devolving upon you as teachers in the combat of tuberculosis as a disease of the masses. You should teach and practise love for fresh air. Your pupils should learn to love fresh air as much as you do and take this love for fresh air home with them. Let me incidentally mention a place where tubercle bacilli abound and where you find at certain hours more children than even at school. I refer to our menageries. To visit the ape-house in the zoological gardens and to remain there as long as possible is the delight of children, and yet, perhaps next to cattle, there are no animals so subject to tuberculosis as apes, nearly 90 per cent. being afflicted with the disease. Add to this the commotion, dust, and impure air in the average ape-house at the usual time of the children's visits, and one cannot help thinking of an absolute danger. There seems no reason why an ape-house, containing numerous consumptive animals, should not be as much a source of infection as a tenement house, where ignorant and careless tuberculous individuals have expectorated indiscriminately.

There should always be ample ventilation in your classrooms. The vitiated atmosphere in the classroom is as pernicious to you as it is to the children under your charge. Keep your schoolroom windows open all the time when the weather is mild; when the weather is cold, open them for a few minutes every three-quarters of an hour, or hour, so as to assure an absolute change of air. No artificial ventilation, however perfect, can equal the direct access of pure, fresh air entering through the windows.

I understand that a recent order from the office of the Supervisor of Janitors of the Public Schools of the City of New York prohibits the opening of windows in classrooms except for the fifteen-minute period of exercises when the blowers are not in use. It is claimed that the opening of one classroom window destroys the effectiveness of the ventilating plant and interferes with the proper circulation of air in all parts of the building. If this should really be so then I would appeal to the Chairman of the Committee on Buildings to insist that the ventilating system be shut off at least once every hour for ten to fifteen minutes, so that the windows can be opened. In view of the great amount of dust which is brought into the classroom on the shoes of hundreds of children, I have serious doubts whether the most perfect ventilating system, without the frequent opening of windows, would be free from danger. I am convinced that your board is most anxious to do the best it can for your and your pupils' welfare, and that this order will soon be modified. With you personally I wish to plead not to be afraid of draughts. The air coming in with draughts is pure and has never injured or killed anybody. With the exception of exposure when greatly overheated to very cold currents of air, nothing is to be feared from the pure air carried in by draughts. Neither you nor the children are likely to be overheated by sitting still in the classroom. Nowadays we do not only expose our tuberculous patients constantly to cold air, or even to the wind, but include pneumonia patients in our cold open air treatment, and even the smallest children suffering with pneumonia are benefited thereby. Professor Wm. P. Northrup of Bellevue Hospital Medical College recently reported to the County Medical Society some of the most gratifying results obtained from cold air in the treatment of children suffering from pneumonia.* If it does not hurt but benefit the pneumonic child to breathe direct fresh air, it surely must be beneficial to the healthy pupil attending the public school and to the teacher as well.

Some of you, nay, let me hope, all of you, except those who give up their career for vital reasons, will be superintendents of schools, or become so influential that the selection of sites for school houses and the construction and equipment of the same will be one of your tasks and privileges. The essentials of constructing a modern school are well known to all sanitarians and up-to-date architects.

In relation to the prevention of tuberculosis, I would suggest only a few points. Where the site or locality does not permit of having a large playground a roof garden which can be covered in winter is absolutely necessary. Instead of our American windows, which can only be opened to one-half of their extent, I would wish to see French windows in every schoolhouse, or windows that slide into the wall, or those that turn on a pivot, all of which permit twice the amount of foul air to go out and of good air to come in that our ordinary windows do. Heating and general ventilation of schoolrooms

* Northrup, Wm. P.: "The Cold Fresh Air Treatment of Pneumonia." Paper read before the County Medical Society of New York, January 22, 1906.

should, of course, be of the most improved kind. The walls and woodwork of schoolrooms should be plain, to make the accumulation of dust virtually impossible and the cleaning easy. All corners should be rounded off, and the walls painted. The interior equipment, that is to say, the school furniture, benches, and desks, should be so arranged that they can be easily moved or folded together, so that a thorough cleaning of the floors is made possible after each daily session. It goes without saying that the drinking-cup should be replaced by the hygienic drinking fountain, which makes the use of a cup unnecessary, and thus eliminates one method of transmission of microbic disease.

Every public school should have a well-equipped gymnasium and a swimming tank with constantly running fresh or salt water, warmed to a suitable temperature in winter. Each pupil should be given the opportunity to bathe several times during the week. To learn to swim should be made obligatory and every class should be supervised by a competent swimming master. Leaving aside the great hygienic gain to be derived from such an installation, especially when the pupils are recruited from homes where bathrooms are rare and where regular bathing is considered superfluous, the swimming lessons will be of value to every boy and girl, and in case of such disasters as the recent *Slocum* tragedy, there will be a much smaller loss of life. There is hardly a college in existence in America where the gymnasium and the swimming tank do not form an important part of the equipments, and a college without them would surely suffer in prestige. The public school where the children of the masses receive their education should not be behind the private college in its equipments.

I am convinced not only that the public school which has a well-equipped swimming establishment and which makes regular bathing and instruction in swimming obligatory for every pupil will have fewer cases of infectious and contagious diseases, particularly scrofula and tuberculosis, but that the intellectual and moral status of its pupils will also be higher.

I beg you, when once in command, not to forget that physical exercise, outdoor life, and when indoors, as much fresh air as possible, are most essential to the normal development of the child. There is too great a tendency in the present age to develop the intellect of our children to the detriment of their physical welfare. They work too much, they do not play enough, and they sleep too little. This overwork, because of too many school hours and too many lessons at home and loss of sleep, are responsible for our national disease, neurasthenia, particularly perceptible in the young. I was deeply impressed when reading the recommendations formulated by the committee appointed by the French government and the city of Paris* with a view to diminishing tuberculosis among its school children, by the fact that they insisted upon a minimum of nine to ten hours sleep, according to the age of the child.

While all the organs of the child should be given opportunity for full development, the respiratory system should receive particular care and attention. I would suggest that breathing exercises should not only be taken now and then, but that they should form an important item in the curriculum of all the schools. I do not believe that there is any better, greater and more efficacious barrier to becoming consumptive than a good pair of lungs, and it would seem to me that it should not only be a great duty, but also a great privilege and pleasure, to make a strong and vigorous man or woman out of a weak-lunged child, who may be predisposed to tuberculosis.

I do not know what system of breathing exercises you have been taught, but, if you will permit me, I will demonstrate to you those which I have found to be most valuable in my work among families where I had some apprehension as to the children becoming consumptive. In fact, I teach these exercises wherever and whenever I can, for I think they do good even to a well person, and, with some modification, I teach them also to my consumptive patients.

In front of the open window, or out of doors, assume the position of the military "attention," heels together, body erect, and hands on the sides. With the mouth closed, take a deep inspiration (that is, breathe in all the air possible), and while doing so raise the arms to a horizontal position; remain thus, holding the air inhaled for about three to five seconds, and while exhaling bring the arms down to the original position. This act of exhalation, or expiration, should be a little more rapid than the act of inspiration. When this first exercise is thoroughly mastered and has been practised for several days, one may begin with the second exercise, which is like the first, except that the upward movement of the arms is continued until the hands meet over the head.

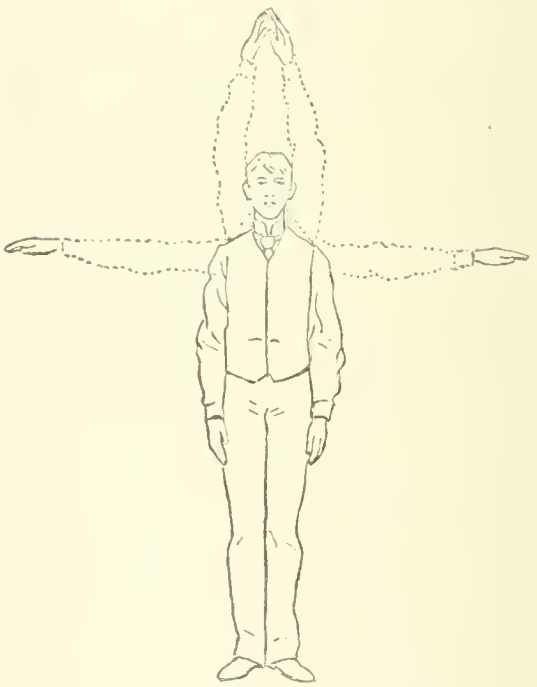

Fig. 1.—First and second respiratory exercise.

The accompanying illustration (Fig. 1) shows the positions which are to be taken during those two exercises. The third breathing or respiratory exercise, which requires more strength and endurance, should not be undertaken until the first two have been practised regularly several times a day for a few weeks, and until an evident improvement in breathing and general well-being has been observed. We will endeavor to make this third exercise, which might be called a dry swim, more comprehensible by the illustration (Fig. 2). Take the same military position of "attention," and then stretch the arms out as in the act of swimming, the backs of the hands touching each other. During the inspiration move the arms outward until they finally meet behind the back. Remain in this position a few seconds, retain the air, and during exhalation bring the arms for-

Zeitschr. f. Tub. u. Heilstattenwesen, Vol. VII, Bd. 2, p. 197.

ward again. This somewhat difficult exercise can be facilitated and be made more effective by rising on the toes during the act of inhalation, and descending during the act of exhalation.

Of course, when out of doors one cannot always take these exercises with the movement of the arms without attracting attention; under such conditions

Fig. 2.—Third respiratory exercise.

raise the shoulders, making a rotary backward movement during the act of inhaling; remain in this position, holding the breath for a few seconds, and then exhale while moving the shoulders forward and

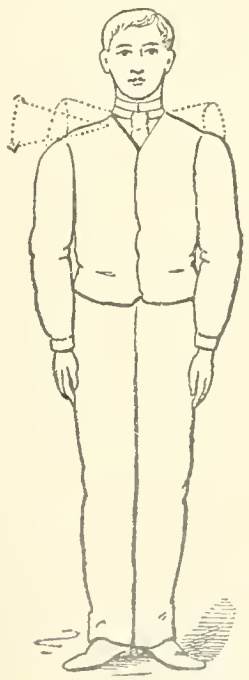

Fig. 3.—Respiratory exercise with rolling of shoulders.

downward, assuming again the normal position (Fig. 3). This exercise can easily be taken while walking, sitting, or riding in the open air.

Young girls and boys, and especially those who are predisposed to consumption, often acquire a habit of stooping. To overcome this, the following exercise can be recommended: The child makes his best effort to stand straight, places his hands on his hips with the thumbs in front, and then bends slowly backward as far as he can during the act of inhaling. He remains in this position for a few seconds, while holding the breath, and then rises again somewhat more rapidly, during the act of exhalation (Fig. 4).

Few people have a just estimation of the value of these exercises. From your studies in physiology you will remember that the amount of tidal air—that is to say, the volume which is inspired and expired in quiet respiration—is only 500 c.c., the complemental air—the volume which can be inspired after an ordinary respiration—1,500 c.c., and the supplemental air, or reserve air—the amount which can be forcibly expelled after an ordinary respiration—amounts to 1,240 to 1,800 c.c. Thus one can readily appreciate the effect of these exercises on the physiological action of the lungs by increasing the supply of oxygen (O), and more effectually removing the carbonic acid (CO_2). You will remember that these interchanges of gases in the lungs result in the conversion of venous into arterial blood. The scientific name for this process is hematosis.

Fig. 4.—Exercise for people in the habit of stooping.

The following general rule concerning breathing exercises should always be remembered: Commence with the easier exercises and do not go on with the more difficult ones until the former are completely mastered. For healthy school children I would suggest to take from six to nine deep respiratory exercises, either of one kind or the other, every hour.

A second general rule is never to take these exercises when tired, and never to continue them so long as to become tired. It is, of course, self-understood that these exercises should always be taken in an atmosphere as pure, fresh, and free from dust as possible, and that no restricting garments around the waist or neck should be worn. You as teachers should know that constricting the chest or abdomen will often leave lasting injuries to the vital organs incased in the thoracic and abdominal cavities.

Mouthbreathing in children, and sometimes in adults, is often caused by certain growths in the throat (adenoid vegetation), by enlarged tonsils, or by growths in the nose (polypi, etc.). The removal of these obstructions by surgical aid is perhaps the

only rational method to assure natural breathing. Incidentally, we may be permitted to say that these operations are not at all dangerous; but by the presence of vegetations in the throat (retropharynx) the hearing and the intellectual and bodily development of the child may become seriously impaired. The early removal of such growths should be earnestly recommended. If you observe among your pupils a chronic mouth breather, call the attention of the school physician or the parents to the child and explain to the parents the danger of a neglect in this matter. The respiratory exercises just described are particularly useful for such children after operation, otherwise they often retain the habit of imperfect breathing which they had acquired.

In teaching the children under your charge how to breathe, sit, stand, and walk properly, you teachers do perhaps more toward the prevention of tuberculosis than all we physicians together. I would love to see singing and outdoor recitation at proper seasons incorporated in the curriculum of every school in city and country, and city schools should have commodious roof gardens for that purpose. Wherever there is a playground it should be kept clean, as free from dust as possible, and be daily strewn with clean sand or gravel. Children should be warned not to expectorate on the playground, and adults should be severely punished by law for so doing.

The breathing exercises at school should, of course, be supervised by teachers. Modern school hygiene, particularly in the United States, is far superior to what it has been in the past, yet there is still room for improvement. As far as the prevention of tuberculosis is concerned, permit me to suggest to you the advisability of giving the children leaflets of instruction. I know this practice to be in vogue in some schools in this and other States, but the leaflets I have seen seemed rather incomplete. Let me give you here a tentative leaflet which I have written with the particular view of preventing consumption.

Every child and adult can help to fight consumption. School children can be helpful by complying with the following rules:

Do not spit, except in a spittoon or a piece of cloth or a handkerchief used for that purpose alone. On your return home have the cloth burned by your mother, or the handkerchief put in water until ready for the wash.

Never spit on a slate, floor, sidewalk, or playground.

Do not put your fingers into your mouth.

Do not pick your nose or wipe it on your hand or sleeve.

Do not wet your finger in your mouth when turning the leaves of books.

Do not put pencils into your mouth or wet them with your lips.

Do not hold money in your mouth.

Do not put pins in your mouth.

Do not put anything into your mouth except food and drink.

Do not swap apple cores, candy, chewing gum, half-eaten food, whistles, bean blowers, or anything that is put in the mouth.

Peel or wash your fruit before eating it.

Never cough or sneeze in a person's face. Turn your face to one side and hold a handkerchief before your mouth.

Keep your face and hands and finger-nails clean; wash your hands with soap and water before each meal.

When you don't feel well, have cut yourself, or have been hurt by others, do not be afraid to report to the teacher.

These leaflets should be read and re-read by the pupils and explained and commented upon by the teacher. Children should be not only allowed, but rather urged, to take these leaflets home and show them to their parents. Thus, these little ones may become missionaries in homes where cleanly habits and domestic hygiene have been heretofore unknown.

In schools where slate- and lead-pencils are given to the children and collected after school hours, these articles should be disinfected before they are again distributed to the pupils. Not only the spread of tuberculosis, but far more contagious diseases, such as measles, diphtheria, and scarlet fever, may be prevented among school children by this simple precaution. The custom in vogue in some schools of having every child use a suitable envelope, so as always to have the same pencil, while preferable to no precaution at all, is, in my opinion, not nearly so safe as a thorough disinfection.

Another method of teaching school children the prevention of tuberculosis has been inaugurated in France in a most ingenious way. My distinguished teacher, Professor Letulle, suggested to the Minister of Education of France that the covering of the books used by school children should serve as a means of instructing the pupils concerning the prevention of tuberculosis. He himself wrote the two pages of instruction for that purpose. The outside cover represents the exterior of a sanatorium, and the text is illustrated by a number of pictures. Permit me to give you here the translation of the subjects which are treated in a most concise and comprehensible way on these two pages: "The air we breathe and the respiratory organs"; "Tuberculosis decimates humanity"; "Tuberculosis is contagious"; "Tuberculosis and its microbe"; "Robert Koch, the discoverer of the microbe of tuberculosis (consumption)"; "Tuberculous infection from man to animal and from animal to man"; "Tuberculosis can be prevented"; "Sure way to prevent consumption"; "Never use strong drinks"; "Tuberculosis can be cured"; "Tuberculosis is a social disease."

An important point in the prevention of the disease under consideration among school children is, to my mind, that the school teacher should be familiar with the objective signs and symptoms of tuberculosis and the characteristics of a person disposed to consumption. These signs are a persistent cough, feverish face, becoming easily tired, or at times an increased excitability, and on the discovery of these symptoms take such steps as are indicated. As is well known, tuberculosis of the bones and joints is relatively and absolutely more frequent in children than pulmonary complications. Lameness or easy tiring of arms or legs is often the beginning symptom of bone tuberculosis. A slight pressure in the region of the joints causes a sudden severe pain. If the spinal column is affected, the symptoms will depend upon the location of the vertebra which is attacked by the disease. For example, if this should be in the region of the neck, there will be difficulty in swallowing, in breathing, or a frequent dry cough. If any of the vertebræ in the region of the chest is affected, a feeling of constriction like a tight band around the chest will be observed, accompanied often by digestive troubles. If the seat of the disease is in the lower portion of the spinal column, there will be irritation of the bladder and lower bowels, an inclination to much urinating, and radiating pains toward the hips. If any such symptoms are discovered by the school teacher, the school physician and the parents should be notified.

Scrofulous children are found particularly frequently in the districts of the poor, and the teacher should know that scrofulosis is only a lighter type of tuberculosis, but it is tuberculosis, and that it can be successfully treated and cured by fresh air, sunshine, good food, and improving the general hygienic environments. The scrofulous child is usually pale, with flabby skin and muscles. The glands around the neck are swollen, and skin disease, sore eyes, and running ears are frequent symptoms. The little patient usually manifests a phlegmatic condition, but we might also find some that are nervous and irritable. The latter often have a particularly white, delicate skin, which makes the veins visible. Fever may be observed in some scrofulous children. In view of the happily very curable nature of scrofulous affections, the importance of the early recognition and of the timely and judicious treatment is, of course, self-evident.

In speaking of scrofulous and tuberculous children of the poor, I must revert once more to the duties of the school board; for what can the teacher or the superintendent do with the underfed children of the poor attending our public schools? Breathing exercises will not supplement their lack of food, but, if anything, they will increase the appetite of the pupil, and a cracker and an apple are not enough for a growing boy or girl, and altogether too little to make their cheeks red.

In an address which I had the honor to deliver some years ago before the Teachers' College of the Columbia University, and in another address before the American Academy of Medicine, a year later, on the subject, "How May the Public School be Helpful in the Prevention of Tuberculosis?" I suggested to the board of education a philanthropic enterprise in which the generous and good-hearted people of every city would most gladly join. This was to provide the half-starved little ones with a luncheon of a few good meat sandwiches and a glass of milk, and I stated that this practice, which had been inaugurated in Berlin a year before, had resulted in a marked improvement in the physical, intellectual, and moral condition of the children. They did better work at home and at school. To avoid a pauperizing tendency, a few pennies should be charged for this luncheon. This practice is in vogue in the city of Boston and works most satisfactorily.

How delighted was I when I read in our daily papers a few weeks ago that your indefatigable superintendent, Dr. Wm. H. Maxwell, had taken up this matter, and that ere long our beloved city will be ahead in such a truly philanthropic enterprise as it is ahead in so many other humanitarian institutions. Permit me here to quote from the *Globe* of November 16, from an article on this subject. With characteristic New York newspaper directness, its headlines read:

"WANTS PUPILS FED.

"They Can't Study on Pickles and Candy, Says Dr. Maxwell, So Board Should Feed Them.

"Must Pay for What They Eat.

"Prices Will Be Low, So That Children in Poorer Districts Can Get Wholesome Midday Meal.

"PUPILS' LUNCHEONS AT SCHOOL PRICES.

Coffee, a cup	2 cents.
Roll	1 cent.
Soup and roll	3 cents.
Milk, a glass	2 cents.
Cake	1 cent.
Pie, per cut	2 cents.

"Coffee at 2 cents a cup, milk at 2 cents a glass, bread and soup at 3 cents a plate may be a part of the bill of fare to be offered in lunch rooms in the public schools, if the Board of Education adopts the suggestion made by City Superintendent William H. Maxwell. Wholesome food at minimum cost should, he believes, be furnished to the pupils in the public schools.

"Thousands of children are not properly fed, and their school work suffers in consequence. Poverty is not the sole cause for such a condition. Ignorance of parents as to proper preparation of food is largely responsible for it. Another contributory cause is that mothers, forced to leave their homes early in the morning for work, prepare breakfasts for their children, but the children, left to themselves, sleep too late, and have to hurriedly eat their breakfast or leave without it. Then, too, it has been found that pupils whose parents have given them a few cents to purchase their luncheons spend it for candy or big pickles.

"These and other children should be given an opportunity to purchase good food, and to that end the Board of Education, according to Dr. Maxwell, should provide lunch rooms in every public school, particularly in the poorer sections of the city. There the pupils should be able to get a good, wholesome midday meal at cost, or at as low a cost as possible.

"The Board of Education now makes provision for lunch rooms in the high schools, where caterers, under the supervision of the principals, sell hot dishes and other food to the pupils, many of whom bring the greater part of their luncheon from home. Chairman Samuel B. Donnelly, of the committee on care of buildings, states that the plan suggested by Dr. Maxwell, as an extension of that now in operation with high schools is feasible.

"Dr. Maxwell made the suggestion that school lunch rooms be provided, at Cooper Union last night, in the course of the discussion which followed his address on "The Teacher's Opportunity," given under the auspices of the lecture bureau of the Board of Education. It was suggested by a man in the audience that Dr. Maxwell appeal to the rich to provide funds for the proper feeding and clothing of the thousands of children now underfed and underclothed.

" 'While I believe,' replied Dr. Maxwell, 'that some provision should be made to feed the children, I also believe that under no condition should an appeal be made to the charity of the rich.' He called attention to his suggestion made at St. Louis last year, that the Board of Education should feed the pupils, 'but,' he added, 'I do not seem to have convinced many members of the Board of Education.' He thereupon suggested that the Board of Education would do a good service to the cause of education were it to make it possible for school children to purchase a wholesome midday meal."

You see, I do not stand alone with my views on a good luncheon for the school children, but Mr. Maxwell, and also Mr. Donnelly, of the committee on the care of buildings, are strongly in favor of this philanthropic scheme.

While I know I am addressing teachers, I know that I am also addressing the citizens of a great community and of the greatest republic, and as such I appeal to you to make your influence felt wherever you can to combat that great predisposing factor to tuberculosis in childhood—child labor, which, we must confess to our shame, is still permitted in many of our States. Proclaim everywhere, whenever you can, that nothing predisposes a child's delicate and growing organism to tuberculosis more than the

great physical strain produced by hours, and often long hours, of indoor labor, which time the child should spend in play outdoors. Child labor makes physical and nervous wrecks of normal children, and because of its influence on the nervous system of the growing boy and girl, I hold it responsible for a good deal of alcoholism among our young people.

President Roosevelt, in his recent message at the opening of the last session of Congress, recommended in strong terms a model child labor law, in order that Congress might set a worthy example to the States in which it has no power to legislate on this subject, by wise and discriminating legislation for the District of Columbia, over which it has the necessary power. Permit me to read to you a few suggestions from an appeal issued recently by the National Child Labor Committee,* which, I think, speak for themselves:

"We request the friends of the twenty-nine million children under 16 years of age in the United States, for whose industrial guardianship and for the protection of whose rights to healthy physical development, education, and leisure the National Committee is organized, to cooperate in recommending this bill to the favorable attention of their members in Congress. It will mean much for our cause in every State to have at the National Capital a reasonably strong and fair law on the subject of child labor. Members and friends of local child labor committees, of educational, charitable, and philanthropic societies, of women's clubs, and all other organizations interested in this movement, are earnestly requested to write at once to their respective senators and members of Congress, sending them, if possible, the enclosed copy of the bill to be presented, and urging the passage of this bill."

I have thus far spoken to you only of the prevention of the disease, but you will recall that at the beginning of my discourse I emphasized the fact that the disease was a curable one. I have not yet told you how consumption is cured at the present time. Consumption is not, nor never has been, cured by patent medicines, nostrums of any kind, or faith cure. Not even individuals who practise under the portentous name of Christian Science, and who, if they do not lack in Christian virtue, I am certain lack in science, are capable of curing tuberculosis. I know that the Christian Science healers, in their dealings with consumptives disregard all hygienic precautions against the spread of the disease: they regard all symptoms as non-existent, and they even try to make the patient believe that when he has a hemorrhage, when he sees his life blood flowing away, that it is only so in his imagination and that in reality such a thing as a hemorrhage does not exist at all. To my mind, the person who, without any medical or hygienic education, dares to attempt to treat so serious a disease as tuberculosis and intentionally even disregards the fundamental principles of preventing this or other communicable diseases, is a criminal and an enemy to his fellowmen.

The conscientious physician of to-day treats pulmonary consumption by the scientific and judicious use of God's fresh air, day and night, of sunshine, pure water, inside and outside, abundant and good food (milk, eggs, meat, vegetables, fruit), and the help of certain medicinal substances when the just-mentioned hygienic and dietetic means do not suffice in themselves to combat the disease—and all this under constant medical supervision, either at home or in a sanatorium.†

The sanatorium is an institution specially built and equipped for the exclusive treatment of tuberculous patients. What is most interesting to know is that this cure can be accomplished not only in California or Colorado, but also in our own home climate. While I am far from depreciating the value of high altitudes, much sunshine and a clear atmosphere as adjuvants, I must confess that in my experience the cures obtained in our so-called ordinary home climates, while often requiring a little longer time, seem to be more lasting than those obtained in more congenial climes. When we consider that the majority of consumptives come from the laboring classes, and that for obvious reasons they must be treated and cured in a climate where they will have to live and labor after their restoration to health, we will see that the multiple establishment of sanatoria near large centers of population, independent of special climatic advantages, will help most materially toward the solution of the tuberculosis problem. In this conviction I do not stand alone. Such men as Letulle of France, Dettweiler and von Leyden of Germany, Biggs, Otis, Flick, Richer, and others of our own country, have expressed themselves as being of the same opinion.

Again, I am convinced that by placing the people's sanatorium near large centers of population, the depressing factor produced by an often severe form of nostalgia is done away with. The thought that he is near his family and friends always has a beneficial influence on the patient.

In connection with the cure of tuberculosis I have already warned you against the remedies containing alcohol which are advertised as sure cures for consumption. Unfortunately, the sure consumption cures are not limited to the people who only use alcohol as the main constituent of this treatment. Had I the time, I could tell you of some of the dangerous constituents on the one hand, and the utterly useless substances on the other, which are put into remedies widely advertised as cures for consumption.

Unfortunately, the public press serves for the advertising of many "absolutely sure consumptive cures," which are from time to time put on the market by unscrupulous quacks. I am nevertheless sanguine enough to hope that in time the better class of newspapers will, in the interest of the community at large, no longer extend the hospitality of their columns to such dangerous advertising matter, especially when it is protested against by the intelligent reader. How many poor consumptives have lost their last little reserve fund by giving everything they had for a dozen bottles of the "sure and quick cure," only those who come much in contact with them know. How unscrupulous some of these charlatans are in their method of procuring certificates of cure, which they then publish as bait to the unfortunate, help-seeking sufferer, is something which can hardly be believed. Let me tell you of one instance: A poor woman in the last stages of consumption came to me seeking advice. When asked for the name of her former medical attendant, she confessed that she had been treated for a number of weeks by a quack concern, and now, her means being exhausted, she was made to understand that they would not continue to treat her unless she would give them a

* This appeal was accompanied by a copy of a most excellent bill proposed to regulate the employment of child labor in the District of Columbia.

† I use the word sanatorium in preference to the word "sanitarium" for the following reasons: Brehmer, the founder of the first institution of that kind, called it "Heilanstalt," which means a healing institution; and the word "sanatorium," from the Latin *sanare*, to heal, gives certainly a better equivalent to the German word than the word "sanitarium." This latter word is derived from the Latin *sanitas*, health, and is usually employed in this country to designate a place considered as especially healthy, a favorite resort for convalescent patients, or an institution for the treatment of mental or nervous diseases.

certified testimonial that she had been thoroughly cured of her disease, which had been pronounced an advanced case of consumption by prominent physicians. This poor sufferer had not derived any benefit whatsoever from the treatment, and as a result her conscience would not permit her to become a partner to such a fraudulent procedure.

And now a last but very earnest word on what to do with the tuberculous school child and the tuberculous teacher. A number of States have taken very radical measures in this respect. My interest in the subject was first aroused by a letter received last February from my friend, Dr. Herbert Maxon King, the physician-in-chief of the Loomis Sanatorium at Liberty. He sent me a clipping announcing the decision of the Board of Education of Jersey City, that no teacher having consumption would hereafter be allowed to teach in a public school. In commenting on this decision, Dr. King said: "It occurs to me that if such action shall be taken on the part of the various boards of education throughout the country, much injustice is going to be done." Since then, according to the MEDICAL RECORD of November 25, 1905, the State of Iowa, and, according to the *Medical News* of December 30, the State of Illinois, have joined the list of those that exclude tuberculosis from the public schools, and these boards have issued an order notifying the superintendents of schools throughout the State to exclude all teachers, pupils, and employees suffering from the malady. They exclude the teacher and they exclude the child, and I approve of this decision, but I must ask: Have those States which exclude the tuberculous teacher, who nine times out of ten has contracted this disease in the performance of his or her duty, provided a pension for her, so that she can devote a year, or perhaps more, to doing nothing but getting well? Or has she been able to accumulate enough means to live the rest of her life without care in case she will not be cured entirely and not readmitted in the school? I doubt if this will be the case in many instances. The French commission above referred to was requested to look into this matter and recommended that the tuberculous school teachers should receive, for at least three years, a sum sufficiently large to provide for proper sanatorium treatment, or judicious treatment at home, and this without losing the right to be pensioned later on. And what is done in our American schools for the children who are tuberculous? How many seaside or inland sanatoria for tuberculous children have we where the child can become cured of its infirmity and concomitant with its physical improvement receive its intellectual education? We in this great city of New York have just one seaside sanatorium for tuberculous children which fulfills this mission, but its capacity is limited to 54 beds, and we have in New York about six thousand tuberculous children needing sanatorium treatment.

I have said before that I approve of weeding out the tuberculous child and the tuberculous teacher from our public schools, and I go even further and recommend an examination for tuberculosis of every child and teacher entering the public school and a periodical examination of both, but I also believe that it is our most sacred duty to provide for these tuberculous teachers and tuberculous children. Let us multiply our sanatoria for children and employ in them as many teachers as we can from the unfortunate ones who have contracted tuberculosis.

Now, what are we to do with the rest, who cannot find employment in these institutions? One of our most beloved, large-hearted and generous philanthropists and distinguished fellow townsman, Mr. Andrew Carnegie, recently created a fund to pension teachers in academic schools who are beyond a certain age and no longer able to earn their livelihood. Mr. Carnegie very justly surmised that our college professors are, as a rule, too poorly paid to accumulate a sufficient fortune to live in comfort during their reclining years. This is a grand and beautiful philanthropy, and I sincerely hope that the example of Mr. Carnegie may be emulated by other philanthropists; but I hope and pray that in future gifts for pensioning educators our ordinary school teachers will not be forgotten. They must have served at least twenty years before they are entitled to any pension, and then it is but small. Then they, too, have often very little chance to accumulate enough to enable them to live in comfort during old age; and I am certain that when misfortune strikes one in the prime of life, when the school teacher contracts tuberculosis and must leave the school, nine times out of ten she will have very little or no money saved. Yet it costs money to provide for at least a year in which to cure a tuberculous patient, and it requires even more to make him comfortable when he is not curable but is forced to live in idleness for two years or more. Let the municipality which excludes the tuberculous teacher and the tuberculous child provide school sanatoria for the children, and, whenever possible, employ therein the tuberculous teachers in the earlier stages of the disease. Let our good and generous fellow citizens who love to devote part of their wealth to the relief of the suffering and misery of their fellowmen, remember in their benefaction the school teacher who has had the misfortune to contract consumption. Whether such a benefaction be in the shape of a special sanatorium for tuberculous school teachers or a special fund whereby these school teachers can be sent to existing sanatoria, or be treated at home, is immaterial. The men and women who will direct their philanthropic efforts toward such a noble purpose will surely serve their fellowmen in the highest degree possible, for next to his Creator and his parents, to whom is man more indebted for what he is and what he knows than to you, his teachers?

16 WEST NINETY-FIFTH STREET.

SOME NECESSARY PRINCIPLES IN THE DIAGNOSIS OF SURGICAL CONDITIONS OF THE UPPER URINARY TRACT.*

BY J. BAYARD CLARK, M.D.,

NEW YORK.

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IT seems appropriate just now to group in a useful sequence such methods, both old and new, as have proved themselves valuable in making diagnoses in affections of the upper urinary tract. For with the advent of newer appliances, such as the ureter catheterizing cystoscope, the various appliances for intravesical separation of the urine, and the improved *x*-ray apparatus, there is a tendency to accept too confidently the evidence that any one of these instruments alone may give, without giving due weight to those preliminary steps in the process of diagnosis which lead up to the point where these later date instruments are of real value.

Unfortunately the idea is becoming prevalent that urinary diagnosis has become by the aid of mechanical appliances a matter both simple of execution and rapid of completion. It is true

*Read before the Newark, N. J., Medical and Surgical Society, November 16, 1905.

that, by the added usefulness of the improved appliances which we now have, diagnoses are made possible which before were impossible; but it is out of the question to hope to arrive at satisfactory conclusions in difficult cases without expense of time and study, both clinically and in the laboratory. Therefore those who would look for good results in their endeavors to define the site and determine the character of pathological conditions of the urinary system should be prepared to spend both time and thought in the elucidation of those problems.

Before detailing an order of procedure in diagnosis, it would be in place to speak of the use of the cystoscope, or rather what has been a misuse of that instrument. Knowing a number of instances where the ureter catheterizing cystoscope of different makes and varieties was used as a universal instrument for the exploration of the bladder as well as an aid to diagnosis in ureter and kidney affections, I was led to further inquiry, and experienced the greatest surprise when I learned from the instrument makers how many more ureter catheterizing cystoscopes were sold here in America than those of the simple examining type.

A well-known firm in Berlin, who manufacture the Nitze instrument only, have sold in the United States 800 ureter catheterizing cystoscopes and 350 simple examining cystoscopes. A large importing and manufacturing concern of this city give as their comparative sales: "Three catheterizing cystoscopes to one of the plain examining." A New York house has, for some six or seven years, been manufacturing the Tilden Brown composite cystoscope, which consists of a common sheath with telescopic tubes for direct view catheterizing, and a prismatic telescope for observation. This cystoscope has not the unpleasant feature which the prismatic catheterizing instruments have of a shoulder directly behind the beak on the shaft. It is only within the past year that this company has perfected the Otis cystoscope, which is a simple examining instrument of the prismatic type.

This is certainly very suggestive evidence that a good many physicians are buying and using the more complicated instrument who have never learned to handle the simple one. The reason for this is perhaps not difficult to explain. The recommendation and description by the instrument dealers of how the ureter catheterizing cystoscope can serve the double purpose of exploring and catheterizing have led many whose knowledge of cystoscopy is mainly theoretical to buy a cystoscope of the catheterizing variety without giving the matter much serious thought.

The following reasons will make evident, I think, why the use of the ureter catheterizing instrument is never justified until indication for its employment has been elicited by the simple prismatic cystoscope.

First. From the standpoint of the patient's comfort, a very important consideration, I believe, there is no catheterizing instrument made that can be introduced with as little discomfort as any one of several simple examining cystoscopes of prismatic type, averaging 21 by the French scale, and with an even, rounded shaft, and a gently angulated beak. All the useful catheterizing cystoscopes are considerably larger of caliber, and in some varieties the shoulder near the beak for the egress of the catheter or catheters is an added source of discomfort.

Second, from the operator's standpoint. The simple cystoscope is more readily sterilized. It is more easily handled and introduced. In strictured or naturally small urethræ it is often the only cystoscope that can be introduced. In diseased urethræ, or where there is prostatic enlargement, the minimum of traumatism is important. The simple cystoscope gives a *clearer* and a *larger* field of vision. It is therefore possible to arrive at a much more accurate interpretation of the condition of the bladder, the state of the ureteral orifices, and the character of the fluid emitted.

The knowledge gained by the simple instrument may be sufficient for the diagnosis, and catheterism of the ureters or the use of the catheter cystoscope would then be distinctly contraindicated. It is only in those cases where a ureteral catheter *has* to be employed that we are justified in the use of the instrument for that purpose. Dr. Max Nitze, of Berlin, makes it an unfailing rule (where the cystoscope is to be used) first to explore the bladder with the simple prismatic instrument. In the writings of Mr. Hurry Fenwick, of London, the simple prismatic cystoscope stands out with such importance in the diagnosis of kidney as well as bladder affections, that one cannot fail to appreciate the great value in his hands of this instrument as a diagnostic means, even to the practical exclusion of the ureter catheterizing cystoscope. If one intends to do cystoscopy and hopes for good results in this line of work, he will first possess himself of, and learn to use, the simple prismatic cystoscope.

A word concerning the use of intravesical urine segregators. There are undoubtedly cases where these instruments can be employed to advantage, but never with that accuracy which comes when the urine is collected directly from each ureter with a catheter. When these instruments are used, it is essential to precede their employment by cystoscopy in order to determine whether their use is worth while, as intravesical enlargement of the prostate and abnormally placed ureters render the instruments useless.

Concerning the detection of calculi in the ureter or kidney, the *x*-rays are probably our most reliable guide, but we must be guarded in our decisions about shadows lying in the path of the ureter. Such shadows have quite frequently of late been seen, and an operation been performed, no stone being found in the ureter. These shadows may be phleboliths, artifacts, or sesamoid bones. By introducing a styletted catheter into the ureter and then taking a radiograph, we can better determine the situation of shadows that are apparently those of stones in the ureter.

In setting down the following course of procedures necessary to a diagnosis, the description of instruments and laboratory appliances and of the technique used in their employment is purposely omitted, in order that this paper may not be too long.

Although it is unnecessary to enumerate here all the surgical diseases to which the kidney and ureter are liable, it is well to mention the affections which should always be kept clearly in mind. Renal tuberculosis, primary and unilateral, perhaps heads the list of those conditions which seem to evade a timely diagnosis. The lack of patient and repeated search for the tubercle bacilli and the lack of proper diagnostic measures must be held responsible for failures in diagnosis in the majority of cases. Pyelitis and pyelonephritis, the variety of which complicates and so often succeeds the infected bladder, the infection of which is due to urinary obstruction by

prostatic enlargement or strictured urethra, must be looked upon as not uncommon. Pyonephrosis is but the terminal stage of the preceding conditions, plus a certain number of cases of hydronephrosis in which infection follows. Other forms of pyelitis and pyelonephritis are those by infection upwards, not consequent upon an obstructed urinary flow, and those in which infection occurs by means of the lymph or blood current. The pyelitis of pregnancy should also be remembered.

The *Bacillus coli communis* is perhaps the commonest bacterial agent. Pyelitis due to the gonococcus may be looked upon as rare. It should be remembered that the renal pelves are made more liable to infection by the presence of calculi.

The diagnosis of kidney stone is perhaps less difficult than that of many of the other affections of these organs, but nevertheless many mistakes are made in a too hurried verdict on the supposed condition. Stones in the ureter are looked upon as much more common than they formerly were, and their diagnosis is certainly under better control. The foregoing may represent the conditions usually to be thought of first. Less common surgical diseases of the kidneys are new growths, cysts, actinomycosis, and injuries due to external violence.

Of the ureters, strictures, kinks, and closure of the lumen by the presence of tumors are conditions met with from time to time.

When a patient comes to us with one or more of the following complaints or signs, we naturally turn our attention to the urinary system: Pain along the course of the urinary tract; disturbances of the act of micturition; pathological conditions of the urine evinced by the presence of blood, pus, albumin, bacteria, etc.

The first step should be an explanation to the patient of the fact that in troubles of this nature an accurate knowledge of the condition is essential. In many instances it requires patience and time in order to collect the evidence necessary for a diagnosis. Preparing the patient's mind in this way at the outset is much better than promising an early diagnosis and losing the patient's confidence by a failure.

It is folly to give an opinion without having had sufficient opportunity for observation. For example, there are cases where the finding of the tubercle bacilli must determine the lesion, cases in which we must repeat our instrumental examination, cases where fever or pain masks the evidence we seek, and cases where the secretion of the kidneys change from day to day.

The history, both general and urinary, cannot be too carefully taken and written down. The physical examination should be a general one, not focusing our attention too keenly upon the urinary tract until we have satisfied ourselves as to the patient's condition as a whole. Proceeding then to the genitourinary organs, if the patient is a male, the external urinary meatus is inspected, so that a smear or culture can be taken if it is deemed necessary. He is then requested to pass his urine into two or three glasses. Immediately after this, if the history is suggestive of the presence of residual urine, he is catheterized to determine its amount.

This time for getting the specimens of urine is carefully chosen before we proceed to palpation of the kidneys, ureters, bladder, seminal vesicles, and prostate, otherwise the evidence we seek from the urine, as it is usually passed, might be very considerably changed by elements artificially expressed during the palpation of these organs.

Having obtained these preliminary specimens of urine we continue the examination by inspection and palpation. We start with the kidneys, ureters, and bladder. Then the external genitalia are examined, and finally the rectal and bimanual examination of the prostate, seminal vesicles, and bladder is performed. If the patient is a female, the preliminary specimens of urine can be collected by the catheter, after which we can make the physical examination of the urinary organs.

The next step is determined by what we have already learned from the history and physical examination, plus what the physical, chemical, and microscopical examination of the urine shows. If it seems likely that one or the other kidney or ureter is involved, the patient's bladder is explored with the simple prismatic cystoscope of the plain or irrigating type, as is indicated by the presence or absence of cloudiness in the urine.

When the patient is catheterized before we fill the bladder for the cystoscopy, this opportunity is taken to obtain by sterile means urine which can be subjected to bacteriological examination, if this is necessary.

By the cystoscopic examination we can pretty definitely determine whether the trouble lies in the bladder or above, and if the bladder is not the source of the trouble, we can still more definitely localize the disease by a careful study of the ureteral mouths and of the jets of urine emitted.

If, on the other hand, the bladder is the seat of the trouble, it will be unnecessary to collect the separate urines; and in such cases urinary separation and the use of the ureter catheterizing cystoscopes are contraindicated.

When we have gotten evidence that the lesion lies in the urinary tract, higher up than the bladder, and if we require for analysis the secretion of the individual kidneys, or wish to probe the ureters to determine their patency or advance a styletted catheter to get an *x*-ray picture, we then have the real indication for the cystoscope which has been especially designed for catheterizing the ureters. The use of this in the proper cases is crowned by the happiest results.

After the separate urines have been collected, the relative action of the kidneys noted, and the urines subjected to thorough analysis, chemical, microscopical, and bacteriological, we come to the point where good judgment and a knowledge of pathological anatomy are telling factors in the summing up of the evidence thus far obtained. Cryoscopy of the blood and urine and the phloridzin test, along with analysis of the separate urines, are means of estimating the functional ability of the kidneys. In cases likely to come to operation, steps to determine the status of the kidneys should be taken before we further consider nephrectomy.

It is only by such deliberate and methodical steps in history taking, in examination of the patient, physically and instrumentally, and in the complete analysis of the urine that we may hope to come to a satisfactory diagnosis.

616 Madison Avenue.

Professor Carl von Noorden, at present chief of the medical clinic at Frankfort-on-the-Main, has been called to Vienna to fill the chair made vacant by the death of Professor Nothnagel. Dr. von Noorden was in this country a few months ago and delivered several lectures on metabolism and on diabetes.

THE ADMINISTRATION OF DIPHTHERIA ANTITOXIN AND PERFORMANCE OF INTUBATION BY THE DEPARTMENT OF HEALTH OF NEW YORK CITY.

By J. S. BILLINGS, Jr., M.D.,

NEW YORK.

The administration of antitoxin in diphtheria was begun by the Department of Health in 1895, the antitoxin used being prepared in the laboratories of the Department.

A staff of physicians is on duty day and night in all boroughs of the city to answer calls for the injection of antitoxin, for curative and immunizing purposes, and also to perform intubation when necessary. When proper quarantine cannot be enforced, the Department removes the case to one of the Department hospitals. When a physician desires to inject the antitoxin himself, and yet the circumstances of the family are so poor that the purchase of antitoxin would be a hardship, he can obtain the antitoxin, free of charge, at the Department or at any of its culture stations throughout the city, by signing a certificate to that effect. He must, however, submit a history of the case on its termination. The Department has records of over 18,866 cases which have been injected with antitoxin furnished by it since 1895. Excluding the moribund cases, 1,325 died, a mortality of only 7.3 per cent. Cases treated early in the disease give almost no mortality. (The actual sanitary supervision of diphtheria, enforcement of quarantine, disinfection of premises, etc., is under the care of the Division of Contagious Diseases.)

Routine Procedure.—The city is divided into districts as follows: Manhattan, 12 districts; Brooklyn, 6; Bronx, 1; Richmond, 1; Queens, 2.

In Manhattan on Sundays and holidays the entire borough is covered by three inspectors, from 12 noon, Saturday, until 9 A.M. Monday, and on holidays from midnight previous to 9 A.M. the day following. These inspectors give primary injections for curative and immunizing purposes, reinjections when requested, take primary cultures, and perform intubation and extubation when the latter is requested by the physician. In Brooklyn, Queens, Richmond and the Bronx, the inspectors are on duty continuously.

Requests from physicians for the injection of antitoxin, for immunization or intubation, are received: (1) by telephone at the various borough offices (Manhattan, 4900 Columbus; the Bronx, 975 Melrose; Brooklyn, 4720 Main; Queens, 51 Jamaica; Richmond, 441 Tompkinsville). (2) By letter, visit in person, or postal card (there is a space for requesting injection on the card used for reporting a case of diphtheria). (3) By culture, the request being made on the culture slip. (4) By inspectors of the Division of Contagious Diseases, for cases under their sanitary supervision which are not receiving treatment. (5) Complaints.

Every such request is entered on a record card, the name, age, and address of the patient, the name and address of the physician, the hour received, and the nature of the request (injection, intubation, etc.). These cards form the record of the case. Every morning, information is obtained from each inspector, by telephone, concerning all new cases of the preceding twenty-four hours—hour visited, duration of the disease, location of lesion, amount of antitoxin given, and number of other children immunized. Each Monday the inspectors on duty for the preceding Saturday and Sunday fill out on cards all data of new cases seen by them, and also give the same information to the inspectors in whose district the patients reside. The cards are then filed under the name of the proper inspector; each Monday the inspector fills in all remaining data (death, recovery, dates of later visits, re-injections, etc.) on cards of all cases terminating during the preceding week. Completed cards are filed by date. Every three months the statistics are compiled for each borough. In addition a weekly record is kept of the total number of cases of and deaths from diphtheria in each borough, and the mortality. On receipt of a request for injection the call is telephoned at once to the proper inspector, the hour at which he was reached being noted on the card. Should the inspector be away from his office longer than three hours he calls up the borough office to learn if any calls await him. On receiving the call the inspector enters all data given in the notebook furnished him. Requests for injection are attended to within two hours. Requests for intubation or extubation are attended to at once. Immunization calls, if received after 6 P.M., may wait until the following morning. When immunization of large numbers of children (institutions) is requested, several inspectors are assigned to the work.

Each inspector is furnished with the following outfit: One black leather valise, containing vials of antitoxin; antitoxin syringe in case, with needles, and cannula; bottles of tincture of green soap, alcohol, and whiskey; silk for intubation tubes; absorbent cotton; sterilized gauze, cut in small squares; culture tubes, swabs and slips; safety pins; medicine droppers; hypodermic syringe in case with needles, and 1/100-grain strychnine tablets; diphtheria placards and intubation set. These bags are inspected once a month.

Antitoxin is furnished for the special use of inspectors in 10 c.c. bottles, containing 6,000 units. It is obtained from the Chief Clerk in each borough office between 9 A.M. and 4 P.M. At other times it is obtained at culture stations by signing a "free slip." In Manhattan it can also be obtained between 9 A.M. and 4 P.M. from the office of the Division of Contagious Diseases. All other supplies are obtained from the Inspectors in charge of the borough.

On reaching the case the syringe and needles are boiled in the case provided for that purpose, and allowed to cool before antitoxin is drawn into them, otherwise it will coagulate. The preferable site of injection is into the loose cellular tissue of the lateral abdominal wall or the loin. The site is washed with tincture of green soap, followed by alcohol. The skin and cellular tissue are caught up between the thumb and fingers and the needle is inserted laterally. The injection must be made slowly to avoid subsequent abscess. Upon withdrawal of the needle a wad of cotton, wet with alcohol, is fastened over the puncture with adhesive plaster. The amounts of antitoxin given are as follows: Under 2 years, from 3,000 units; over 2 years,, from 5,000 units and upwards. In severe cases, especially those complicated with bronchopneumonia, possibly caused by the diphtheria bacillus, massive doses of 20,000 to 40,000 units are given.

In giving antitoxin for immunizing purposes the same precautions are adopted as above, except that the needle need not be resterilized between children in the same family. For immunizing purposes the dose is: Under 2 years, 300 units; over 2 years, 500 units and upwards. This should protect from two to three weeks. As many immunizations as possible are done, not only in the immediate family of the patient, but in the other families on the same floor and in the same house. This is to prevent the

spread of the contagion, which is as important as the cure of the original case. (Since January 1, 1895, immunizing injections of antitoxin have been administered to over 21,000 individuals by the Inspectors of the Department of Health, and by physicians (free cases only). Of these individuals 65 (0.3 per cent.) contracted diphtheria of a mild type; one case only terminated fatally). The character of the work of the inspectors is judged as much by the number of individuals immunized than by the number of cases treated or by the result of such treatment.

A culture is taken at the first visit in each case unless it is certain that it has already been done by the attending physician or the Inspector of the Division of Contagious Diseases. If before 4 P. M., this culture, with properly filled out slip, is left at the nearest culture station, a list of which stations is carried by each inspector. After 4 P. M., the inspector brings or sends the culture to the Borough Office, where it is put in the incubator.

In all cases of diphtheria (except those in private houses or hotels), when it has not already been done, the inspector affixes a placard to the door.

Every patient is revisited the day after injection (to reinject if necessary) and again on the day after reinjection; on the fourth day (in severe cases), and on the fourteenth day, to ascertain the occurrence of rashes, sequlæ or complications, cause of death, etc.

Injection is never refused in doubtful cases, but with the consent of the attending physician it may be postponed twenty-four hours to await the result of examination of culture. At the request of the attending physician doubtful cases are considered and treated as true cases of diphtheria. In cases in which the necessary quarantine is wilfully disregarded or cannot be observed, the inspector recommends that the patient be removed to a hospital. If the family's consent is obtained, the Division of Contagious Diseases is requested, by telephone, to send a diagnostician. In Manhattan such patients go to the Willard Parker Hospital, in Brooklyn to the Kingston Avenue Hospital, in Richmond to the Smith Infirmary, and in the Bronx to the Riverside Hospital.

Every diphtheria patient requiring intubation, where the attending physician is not familiar with the operation, should be removed to a hospital where it may be watched and the tube immediately removed or replaced as occasion arises. The inspector urges such removal in every case; when consent is not obtained from the physician or the family, warning of the possible dangers is given. The Department of Health does not hold itself responsible for such cases. Attending physicians, when requesting intubation, are notified that they must be present at the operation, as otherwise the patient may be removed to the hospital if deemed advisable. When the proper inspector cannot be immediately obtained to answer requests for intubation, the call is telephoned to a Department Hospital, whence an ambulance and physician are sent. In all cases intubated by the hospital physician, whether removed to hospital or not, the inspector does the necessary immunizing, placarding, culture taking, etc.

Each inspector receives thorough instruction and practice in intubating, under the guidance of a skilled instructor. The intubation set furnished includes the following: Gag, introducer, extractors (2 sizes), set of tubes (1-year, 2-year, 3-year, 4-year, 5-year, 10-year), with obturators. The hand bag contains the other necessary articles. Extra tubes with obturators are kept on hand, as follows: 3 one-year size, 3 two-year size, 1 three-year size, 1 four-year size, 1 five-year size. Each obturator is specially fitted to its tube, and is to be kept in the same. A tube must not be used with a misfit obturator. All tubes must be kept constantly threaded with 18 inches of silk thread.

The fine corrugations on the jaws of the extractor should be distinct and rough to the touch. The jaws of the gag should be smooth and the notches in the holder clean cut. The introducer must always be moistened with a drop of oil at the slide.

The indications for intubation are: Labored or insufficient respiration, cyanosis, dilatation of the alæ nasi, insuction of the supraclavicular spaces and violent action of the diaphragm.

From the patient's family are obtained a plain wooden kitchen table, a clean sheet folded so that it will reach to the child's shoulders and overlap when tightened around the child, and a basin of hot water. An assistant to hold the head is necessary. The child's clothing is removed down to the waist, and the patient is placed flat upon the back upon the sheet, which has been laid on the table. The sheet is then wrapped snugly about the patient, reaching from the shoulders down, confining the arms to the sides. It is fastened by safety-pins inserted along the far side of the patient. The assistant holds the patient's head, with chin well up, firmly with both hands. In children over 1 year the gag is then inserted and opened widely. The introducer, fitted with a tube of proper size, is taken in the right hand, letting the string dangle. The left forefinger is inserted into the pharynx until it reaches the epiglottis, which it pushes out of the way. The tube is then introduced, following the left finger as a guide. The cap of tube is held with the left finger tip and the introducer is withdrawn. The finger is then withdrawn, the gag loosened, and the throat swabbed out with a gauze square. If the tube is properly inserted the child will breathe better immediately and start to cough with a characteristic metallic sound. If the cough is insufficint a drop of whiskey and water, introduced by a medicine dropper, will accelerate it. In a few minutes, if everything is satisfactory, the ligature is removed. (This is done by reinserting the finger, cutting off the knot, and holding the cap while the string is pulled out.) The gag and sheet are then removed. Skillful intubation should not take more than three seconds. Avoidance of any of the above routine will not hasten the performance of intubation.

Rules for inspectors—

1. Exchange of Sunday or holiday assignments can only be made after obtaining consent of Chief of Division or Inspector-in-Charge.

2. Special reports must be made on the proper blank.

3. In filling out culture slip, write correct name and address of attending physician legibly.

4. Antitoxin must be kept in a cool place; never in the pocket or bag over night. A bottle once opened must never be used subsequently. Empty bottles must be returned at intervals to the borough office.

5. The intubation set must be kept in perfect order and ready for use. After performance of intubation all instruments must be washed and boiled before being returned to the case.

6. Intubation tubes must be accounted for. When the patient goes to a hospital with tube in throat a report of all essential facts must be made at once so that the tube may be recovered. Tubes in "at-home" cases must be recovered by the inspector. In case the patient dies with the tube in the throat, it is not to be removed.

7. If the inspector fails to find the patient at the address given, he must obtain the correct address at

once from the attending physician, using the nearest telephone.

Note.—Diphtheria antitoxin is furnished by the department through its culture stations (list on application), free of charge to physicians, under the following conditions:

1. The physician must sign a certificate to the effect that the family of the patient is unable to pay for the same.

2. On termination of the case by death or recovery he must forward a history of the case on the blank furnished for that purpose. Should he fail to do so the history is requested by letter.

These histories are tabulated at the end of each year.

A circular is issued which gives full information as to the causation, mode of spread, prevention, and treatment of diphtheria. This is distributed to physicians throughout the city

32 East Fifty-third Street.

THE NON-OPERATIVE TREATMENT OF PROSTATIC HYPERTROPHY.*

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Within the last few years newer methods of operative treatment for prostatic hypertrophy have come into vogue, and much has been added to our knowledge of the condition by the interest and study thus excited.

The condition is one so frequently an accompaniment of advancing years, giving rise to such distressing symptoms in many cases that it appeals to us all for relief, and any measure which offers a cure must therefore be warmly welcomed. Our enthusiasm, however, should not cause us to forget that the more conservative methods of treatment may often bring relief to these patients without subjecting them to an operation which still has a mortality of three per cent. or over, and in which the results are not always ideal.

In almost every medical journal nowadays will be found an article recounting one or more operations for the relief of the symptoms accompanying this condition, showing how eagerly the operation has been taken up. A careful reading of many of these cases will show that the improvement hoped for has not always been realized, and in some cases the patients have been left in a worse condition than before operation. These results are from published cases; bad results are apt to be withheld. In the *American Journal of Urology* recently Dr. Whiteside of Portland, Ore., has collected a number of these cases, and gives a very complete analysis of their condition after operation. It is unfortunate that an operation which theoretically should give such good results fails in its performance in such a considerable proportion of cases. The bad results can in some instances probably be accounted for by the inexperience of the operator. More often it is due undoubtedly to improperly selected cases, and in many instances largely to lack of sufficiently prolonged preparatory treatment.

Patients should not be urged to operation before systematic treatment has been tried, unless some particularly positive indication requiring it exists. The symptoms are not alone due to the enlargement of the prostate, and so much can be accomplished for these patients by careful and well-directed treatment, for the relief of their symptoms, that it is right that these measures be given fair trial before operation is too urgently insisted upon. Even though nothing more is accomplished by treatment the patient is placed in a position to make his recovery from operation easier and smoother.

Pathologists now seem pretty well agreed that prostatic hypertrophy is due to inflammatory changes, having their starting point in the glandular structures, and thence spreading to the interstitial parts. Clinical evidence seems to bear this out, as in the early stages the prostate is often found to be soft and boggy, with evidences of a catarrhal prostatitis.

While it is undoubtedly true that gonorrhea is a very important factor in the production of these changes, there are, no doubt other causes, as prostatic hypertrophy is found in patients who have never had gonorrhea. Any one who will read Dr. Bangs' very able article on this subject cannot fail to be convinced of the correctness of his conclusions. It is only necessary to question carefully some of these people to learn how frequently other factors may be of etiological significance. Prolonged congestion or hyperemia of the structures in and about the deep urethra results from abnormal sexual habits, which, if kept up sufficiently long, may be productive of pathological changes. Masturbation, sexual excesses, pernicious sexual habits invented to gratify a perverted or exhausted sexual appetite, to prolong its pleasures, or to prevent the fulfillment of nature's laws have one or all a place in the history of these cases.

Routine methods of treatment will often prove disappointing. If our treatment is to be successful it must be applied with a full understanding of the conditions present in each case, a knowledge of what can be accomplished, and how it is to be brought about. To this end a history, going fully into the details of the patient's habits and life will be of the utmost assistance. A careful study and examination of the urine is indispensable, not only on the first visit, but at each subsequent one, as the character of the urine is one of the chief guides to treatment.

Rectal examination of the prostate affords us information of the greatest importance. Its size, consistency, and character can be determined by this means. This is to be supplemented by measurement of the internal enlargement of the prostate. The increase in urethral length is our guide in this and is ascertained by the passage of a small, soft rubber catheter. As soon as urine begins to flow the point at the meatus is noted and the measurement of the remainder ascertained. The length of the catheter being known, the urethral length is thus determined. The amount and quantity of the residual urine can now be determined, the patient having previously voided his urine.

The cystoscope may in some cases be of considerable assistance; ordinarily, however, the information obtained from it is not sufficient to compensate for the traumatism to which its use gives rise; the less unnecessary instrumentation in these cases the better. The slightest injury resulting from the passage of instruments may in some cases be the starting point of a very acute cystitis, if it is not already present. The violent inflammatory symptoms to which it gives rise render the patient all the more uncomfortable, and every effort should be made to prevent this complication. The too sudden or complete withdrawal of the urine may also give rise to cystitis, as conditions favoring this

*Read before the City (Charity) Hospital Alumni Association.

complication are generally present and it needs a very slight exciting cause to start an inflammation which is, on account of the conditions present, extremely difficult to cure.

It is, of course, manifestly impossible to alter the character of the prostatic enlargement after interstitial changes have taken place in that organ. Much can be done, however, to prevent it if the patient is seen early, when the glandular strictures are principally involved. At this time the prostate may be only slightly enlarged; it will be soft and boggy on rectal examination and somewhat tender. In other words a catarrhal prostatitis is present and the indications are to free the glands of the accumulation and relieve the congestion in and about the gland. Massage at sufficiently frequent intervals to keep the glands well emptied is to be employed. Hot rectal irrigations are very beneficial in relieving congestion and should be given once or twice a day. While a careful watch should be kept on the urine to see that it does not become irritating.

The patient must be advised as to his habits, and mode of life. Moderate exercise is advisable, but horseback and bicycle riding are to be avoided. Such articles of diet as are irritating to the urethral mucous membranes must not be allowed. All alcoholics must of course be stopped, as it is a well-known fact that they exert a very harmful effect on the urethral mucous membranes, and as the latter are already in a state of congestion or hyperemia every effort must be made to relieve this. The remedy which, in my experience, is most useful in accomplishing this is nitrate of silver. The applications should be made by means of a small soft rubber catheter attached to a small syringe. The solutions should be mild at first and increased or decreased according to the effect produced.

Internal medication depends upon how much irritation is present and the condition of the urine. A highly acid urine with signs of considerable irritation calls for alkalies, in combination with such remedies as uva ursi and triticum repens. When urinary antiseptics are indicated, urotropin (hexamethylenamine) or some similar preparation should be employed.

Residual urine in these cases is not ordinarily present, and although acute retention may occur at any time, it is much more apt to be in the later stages.

Where interstitial changes have taken place in the prostatic tissues and the prostate is hard and firm, massage is contraindicated. The hot rectal irrigations may, however, be employed with great benefit, or the hot sitz bath may be substituted if the rectal irrigations are not well borne.

More or less residual urine will now be present. It is not altogether dependent on the amount of hypertrophy present, for it will be found to diminish in amount as the congestion is relieved by the treatment already indicated. The amount of residual urine should be watched, and catheterization employed when necessary. So long as the urine is clear a moderate amount of residual will do no particular harm, provided the patient is watched and all means employed to prevent infection and cystitis taking place.

Acute retention may sometimes demand our attention. It is usually brought on by exposure to cold or damp weather or by excesses, alcoholic or otherwise. When it does occur, if it cannot be relieved by the catheter, hot sitz baths, or similar means, suprapubic aspiration must be employed.

The use of the catheter by the patient himself requires consideration as to the patient's condition, surroundings, and intelligence. If it is to be employed they should have very definite instructions as to the manner in which it is to be used, and the method of keeping it clean. In cases of this kind the patients may continue to lead a very comfortable life, using the catheter when necessary and seeming to be fairly well satisfied with their condition; so well satisfied indeed that operation will not be considered.

Cystitis, when present, necessitates frequent and copious irrigation of the bladder beginning with mild solutions of boric acid. Some of the solutions containing formaldehyde are also beneficial. Later solutions of silver nitrate may be employed as indicated.

It must be remembered that stone is a frequent accompaniment of prostatic hypertrophy with cystitis. The *x*-ray is a valuable means of diagnosis, though it may occasionally be misleading. I have known it to show no stone when one was known to be present.

Internal antiseptics such as salol boric acid, or urotropin should be administered as indications require, while the general hygiene of the patient should be looked after.

Under the treatment outlined many of these patients can be rendered comfortable and their condition greatly improved. The obstruction to urination will be greatly relieved, with consequent lessening in the amount of residual urine, while the pain and frequency of urination, such annoying symptoms in these cases, can be greatly benefited.

In conclusion, I do not wish to convey the impression that operative measures are never indicated. On the contrary the benefit to be derived from operation in properly selected cases is fully appreciated. The symptoms are due, however, in many of these cases, to other causes besides the enlarged prostate, which are amenable to treatment, and should therefore be corrected before operation is decided upon.

66 West Seventy-first Street.

A FACTOR IN PERINEAL LACERATIONS.*

By WILLIAM H. SHIPPS, M.D.,

BORDENTOWN, N. J.

Laceration of the perineum as an accident of labor is of enough importance, and occurs with sufficient frequency, to render its consideration at all times a subject of interest to those engaged in obstetrical work. That it occurs in a large percentage of labors no one will deny who acquaints himself with current literature, or takes the trouble to make visual examination of his patients the invariable rule after the termination of labor.

In a majority of instances, these perineal tears are so slight as to require for their treatment nothing more than strict attention to asepsis. Occasionally however, the injury to the soft parts is of sufficient importance to demand skilled surgical interference for its relief.

Among the causes tending to produce perineal laceration may be mentioned, abnormal development of the fetal head or trunk, disproportion between the size of the fetus and the pelvic outlet, rude or unnecessary manipulation on the part of the medical attendant, rigidity of the perineum, the unskilled use of the forceps, and lastly violent and uncontrolled expulsive efforts of the mother just prior to the birth of the child. As the object of this paper is simply to deal with the last named factor in the

*Read before the Bordentown Medical Club, January 8 1906.

causation of perineal lacerations, consideration of the other causes will purposely be avoided at this time.

Save in a single instance the writer has never had the misfortune to encounter in his immediate practice what is known as a complete laceration of the perineum involving the rectal sphincter, nor what is termed central laceration in which the presenting part forces its way through a breach in the perineum between the rectal and vaginal outlets, also an ugly sequela of labor; but such perineal tears as have been met with, have for the most part been due to uncontrolled expulsive efforts on the part of the mother. Just why the latter should play an important part in the causation of perineal rupture will the more readily be appreciated when we reflect upon the conditions as usually found in the lying-in chamber. Probably hours have already elapsed since labor began, the woman, worn out with her exertions which she believes have been futile, and anxious to bring to a speedy end her sufferings, listens to the promptings of her friends, and often of her physician, to bear down harder, still harder; again and again she responds to the command, and still the end is not. In a spirit of desperation she braces herself for a final effort, and bringing to bear all her reserve forces, strains with all the energy of which she is possessed, the perineum distends more and more until, with little ceremony, the new life bursts its barriers and enters the outside world, bringing momentary relief to the tired mother and attendants, but in its rapid transit not infrequently forcing its way through the torn and lacerated perineum. Too short a time is given for the physiological softening and stretching of the tissues which furnish the frail barrier to the escape of the fetus, hence, as Parvin states, the integrity of the perineum is imperiled, resulting too often in an accident always a source of dread to the patient and annoyance to the physician. Even with the utmost care, it cannot always be avoided, especially in such cases described by Pajot, in which from some peculiarity of structure the perineum is predestined to suffer.

The first and most important step towards prevention, is to secure the woman's cooperation. Let the case be plainly stated to her, so that she clearly understands that the accoucheur depends upon her aid to deliver safely. It is a rule of the writer, when called to the bedside of a woman in labor, after determining the fact that no obstacle to natural delivery exists, to inform her that all is working well, that the pains she is suffering, while seemingly accomplishing little, are gradually and surely preparing the way for the birth of the child, but that there will come a period just prior to delivery, of which timely warning will be given, when she must cease all bearing-down efforts.

At this juncture she is commanded not to bear down, in fact to hold back as it were the effort at expulsion in order to avoid injury to the perineum; or in plainer language to save her from being torn. As all women dread the idea of injuries of this nature, and particularly the thought of operative interference, little difficulty as a rule is experienced in securing the necessary cooperation. When for any reason the patient will not thus aid, anesthesia is a valuable ally. Thus prepared, one has but to wait until the head presses well down upon the perineum and is about to emerge; then with the right hand acting as a guide and a support to the advancing head, the fingers of the left hand, previously well lubricated, are inserted between the presenting part and the perineum. As the head is about to enter the world, the woman is urged to cease all bearing-down efforts. As the head emerges, the chin is allowed to glide over the fingers of the left hand, the perineum meanwhile being gently pressed backward. The head enters the world with little difficulty, the integrity of the perineum remaining intact in proportion as control over the last expulsive efforts of the woman is secured.

Immediately after the placenta is expelled careful examination of the perineum is made. If in spite of the care exercised I detect a rupture, the necessary stitches are at once introduced, and I hold it good practice to operate in every case of laceration except the most superficial. This I do for the sake of possible good to the patient and for my own protection. Women are ever ready to attribute any future indisposition or physical shortcomings to something done or left undone at a previous labor; and especially is this the case if the thought is suggested by some jealous rival, who, taking advantage of the opportunity and knowing the credulity of his patient, seizes upon the occasion to damn his colleague. Therefore, I say, operate whenever there is the slightest excuse for so doing. I am satisfied, however, that in proportion as we come to recognize the importance of bringing under control the violence of the expulsive efforts in the final act of parturition, will we reduce to a minimum our cases of perineal rupture.

Ocular Injuries.—Melville Black declares that a comparatively slight injury to the eye may, if neglected, result in the loss of the function of this organ. On the other hand, a very serious injury may be so treated at the beginning as to cause but slight impairment of vision. In many cases the physician can greatly assist the oculist by giving a full account of the injury and an accurate description of the appearance of the eye shortly after the injury. Aseptic precautions are a necessity in every wound of the eye. All of the adjacent parts should be carefully cleansed. Unless they are infected, simple incised wounds and scratches of the cornea should not be interfered with except to smooth out misplaced flaps. In order to avoid infection not only must the outside of the lids and lashes be made clean, but they must be kept clean until the wound has healed. The eye should be closed with a dry or moist bichloride dressing. If the eye is very painful, the dressing may be removed and iced cloths applied until pain ceases. Then the local cloths may be continued or the dressing may be replaced. The writer emphasizes the importance of using iced cloths for the prevention of ocular infection. Oil is the one thing to use in a burned eye. The writer prefers castor oil. In serious penetrating wounds of the eyeball every endeavor should be made to combat infection. The writer believes that this is best accomplished by the constant application of iced cloths. If there is any question about the eye containing a foreign body, an *x*-ray picture should be taken by an expert. The foreign body should be removed as soon as possible. Atropine is strongly indicated both in penetrating wounds of the globe and in infected simple wounds. The writer concludes by saying that cocaine is not a remedy. It is a local anesthetic. It serves no good purpose and may do a great deal of harm. —*Colorado Medicine.*

The Pathology of Catarrhal Jaundice.—Sacquépée and Fras have for two years been studying this subject. They have carefully observed the feces in these cases, and they conclude that there does exist a catarrhal jaundice of typhoid type. Catarrhal jaundice can be caused by paratyphoid bacilli of two types, more often by the type called A than by that called B. In more than one-fourth of the cases, the colon bacillus is the cause. In all probability it is true that the typhoid bacillus is equally capable of exciting jaundice. For the present, however, we are not able to determine exactly the extent of its pathogenic function. In certain cases the intimate nature of the disease escapes us completely.—*Le Bulletin Médical,* January 6, 1906.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

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PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, February 17, 1906.

SEASICKNESS.

WHILE seasickness is, under ordinary conditions, hardly to be classed with the graver maladies, the fact that its relief is still beyond the power of the therapeutist is certainly a reproach to medical science. In spite of all endeavors in this direction, a certain prophylactic, or remedy, seems as hard to get hold of as the philosopher's stone, though no doubt many a sufferer, while prostrate from Neptune's wrath, would be willing to barter that fabled reagent if he had it for a sufficiency of some yet undiscovered Gileadean balm which should restore tranquillity to his perturbed interior. The number of alleged specifics is legion, but though the underlying principle may seem plausible enough on shore, when put to the actual test they are usually a reed to lean upon. To leave aside entirely the host of medicamentous agents, mostly narcotics, that have been recommended, the number of physical remedies suggested is appalling and involves treatment directed toward nearly all the bodily functions. Some authors recommend the application of broad, closely fitting abdominal binders of flannel; others say that tight waistbands must especially be eschewed; some counsel exercise, others quiet; some would have the sufferer refrain from all nourishment, liquid or solid, others bid him, undismayed by each fresh cataclysm, to reship a new and copious cargo of victuals as soon as the last has been discharged. Recognizing the importance of ocular reflexes, some counselors urge susceptible seafarers not to let their gaze rest on the restless waves, others seek safety in spectacles of red glass, and still others paralyze the accommodation of one eye with atropine, or cover it with a bandage, in order to lessen the apparent motion of objects on shipboard. Recently one enthusiastic inventor prophesied great things for a special cot suspended at the four corners from wires running over pulleys and controlled by electric motors in such a way that the mattress was always maintained in the horizontal plane. To add the last touch of sybaritic luxury, the sufferer had only to extend a finger and touch a button when soft zephyrs from an electric fan forming part of the machinery would blow gently across his delighted features.

The latest of these mechanical devices for transmuting queasy landlubbers into storm-proof seadogs consists in a vibrating chair, of which the seat is set in commotion by an electric motor. The idea, apparently, is to distract the victim's attention by the violent agitation of his body to such a degree that the pitching of the vessel will pass unnoticed. This appliance has been made the subject of investigation by Dr. Peters, surgeon of one of the large transatlantic passenger steamers which was provided with six of the chairs, and in a contribution to the *Deutsche medizinische Wochenschrift* of December 14, 1905, he expresses himself as encouraged to continue his observations with the method. It appears that the effect of the vibration is distinctly sedative and produces a marked decrease in the usually abnormally high pulse rate. The beneficial effect in most cases ceased, however, as soon as the patient had left the chair, and it would hardly seem wise to subject anyone to this more or less violent jouncing for an indefinite period of time.

Even should this treatment prove to be efficacious and free from contraindications, it would always be open to the drawback of being accessible only to a small fraction of the large number of passengers to be found on the modern liners, and a method not open to this objection would be preferable. Such a one is that proposed and apparently well tested by Eugene Wolf, which is described in the *Deutsche medizinische Wochenschrift* for January 18, 1906. Wolf bases his procedure on the theory that seasickness is accompanied by great cerebral anemia, and he endeavors to counteract this by the application of very hot compresses to the head. He insists that when carried out according to his directions, the treatment invariably produces good results; and to substantiate his claim, he challenges the advocates of the vibration chair to a contest in which the disciples of whichever method proves least effective in entirely preventing seasickness among a specified number of transatlantic passengers shall pay to a seamen's benevolent association the sum of one thousand marks. Wolf has already published his method in the lay press of Germany, and we here give the essential features of the procedure. The remedy is said to be infallible only if the patient, during its application, refrains from all other attempts at treatment, and does not take food or drink or indulge in smoking. When the first symptoms are felt the patient should lie down perfectly flat as soon as possible. All tight garments should be loosened, and especially constriction by the corset must be avoided. The appliances required consist of a bowl of hot water and two towels. The water must have a temperature of at least 80° C. (176° F.). A towel folded to the width of the forehead is dipped in the hot water, wrung out, and tied tightly about the forehead just as hot as it can possibly be borne. Any available object, such as a buttonhook, toothbrush, shoehorn, etc., is used as a lever to twist it very tightly about the head. The application is at first rather trying, but the process is continued, a second similar towel being promptly substituted for the first, until the patient experiences a sensation of wellbeing over the entire body. The application of the compresses is continued for some time longer, but the sensation of wellbeing usually manifests itself in from one-half to one hour. The onset of thirst gives evidence that the seasickness has been conquered, but the patient must remain recumbent, and take no food until he is really hungry. When this occurs, some toast and a little hot, unsweetened, weak tea, without milk, may be taken, and two hours later the patient may resume his place at the table. The treatment is thorough, and, if followed at the beginning, is said to insure freedom from sickness during the rest of the voyage. The

fact that no special apparatus is required certainly renders this method superior to the vibrating chair, and also to an innovation suggested by Kappmeier. This author applies the same principle by using a sort of cap containing a wet compress which is heated by electricity and is provided with means for securing the requisite tension. In this way, through the action of the heat and pressure, the cranial circulation is improved and an even distribution of the blood throughout the body is secured.

THE LOCAL EFFECTS OF PERITONEAL DRAINAGE.

There is probably no one detail of abdominal surgery which has met with so much interest and attention as the subject of drainage. Hailed at first as a means of deliverance from the high mortality which attended the operation of laparotomy, its employment has constituted a matter for discussion, often prolonged and bitter, until at the present day we find it greatly restricted. And the discussion is yet by no means closed, for, although our knowledge of the subject has been greatly increased by clinical experience, much confusion still exists as to the nature of the reaction of the peritoneum to drainage. It must also be acknowledged that the dangers attending the use of a drain in the abdomen, both immediate and remote, are considerable, and yet the feeling is prevalent among surgeons that the procedure cannot be entirely abandoned. Perhaps the most incontrovertible argument against general peritoneal drainage is an array of facts, based on clinical experience, which show that the general peritoneal cavity cannot be drained by the methods usually advocated. It has been proved to be a physiological and physical impossibility, because drains are almost immediately functionally incapacitated by the formation of an encapsulating sheath of fibrinous exudate and adhesions. J. L. Yates (*Surgery, Gynecology, and Obstetrics*, December, 1905) has gone a step further and has shown by animal experiments that no matter what form of drainage is used, there even results a backward flow from the newly-formed into the general cavity. A number of other points in connection with his studies are also of interest. He asserts that the discharge from the drain and the excess of intraperitoneal fluid is a serous exudate, the result of a mechanical irritation of the peritoneum contiguous to the drain and comes only to an insignificant extent from the general peritoneal cavity. This exudation continues only until the fibrinous material has accomplished encapsulation of the drain by the formation of adhesions. There is no appreciable difference between smooth drains and rough drains as regards the process of encapsulation, the advantage of the former consisting merely in their easy and less painful withdrawal. These assertions practically mean that extraperitoneal drainage alone is possible. But, as the writer truly states, there is little comparison between the peritoneum of a healthy dog and that of a sick man, and principles derived from such sources must be regarded with conservatism. There is, however, a well-established relationship between the experimental results and those of a clinical character, and for this reason it does not seem inopportune to adopt them in part if not as a whole.

Admitting, then, the futility of attempting drainage of the general peritoneal cavity, as well as its possible injurious effects, it remains to be seen how we can best employ localized drainage. It is quite evident that the best results will attend the rapid isolation of the affected area, and this should be accomplished with the least injury to the peritoneum and the least restriction to the normal functions of the viscera and to the early and complete restitution of the abdominal conditions. The drainage material should therefore come in contact only with the surface to be drained, and in passing out of the abdominal cavity should come into relation with the least possible extent of serous surface, and then only with that least likely to be functionally affected. In order to carry out the latter requirement, Yates suggests that, whenever practical, the drain be placed between the omentum and the parietes. In addition, everything must be done to promote abdominal quiet for at least twelve hours, in order to favor the formation of encapsulating adhesions. At the end of twenty-four hours, the core of the drain, which should be constructed on the Mikulicz tampon principle, may be withdrawn, and then the remainder as soon after as the conditions indicate.

These experiments emphasize a belief which is gaining many adherents, that any foreign body placed in the abdominal cavity in the presence of an infection is prejudicial to peritoneal resistance, and we must learn to depend on the latter more than on any mechanical means to overcome inflammatory processes, known ordinarily as peritonitis. When there is nothing to be gained by making an infectious area extraperitoneal, or when the path of a drain cannot be made to afford a passage of least resistance leading outside the body, there does not seem to be, judging from Yates' experiments, any justification for its use, aside from hemostasis.

THE PHYSICIAN'S INCOME.

The medical orator, speaking before congresses of his confrères or in general assemblies, is wont to wax eloquent over the altruistic nature of the practice of medicine, and in warming to his theme he often, especially if he has himself reached that happy state where the ring of the doorbell awakens no thrill, warns his hearers against the evil of "commercialism" in medicine. In daily life he takes his fee of $50 for a consultation, or $500 or more for an operation, with no thought other than that it is his just due, but he deprecates the innocent arts of his poorer brother in winning patients whose $2 fees are needed to pay the butcher or buy shoes for the children. For such as he poor times and prosperous times have no terrors. His clientèle is of the well-to-do, who may, perhaps, have to cut off a few of their luxuries in times of stringency, but who always have enough to pay for health and life. For the ordinary practitioner the problem is very different. He suffers in good times and in bad. In poor seasons his patients are out of work and the doctor's fee looms big, the dispensaries are open, and with a little gulp of pride they go to them for free advice. In times of prosperity they go to the physician's office and pay his fee. But the fee they pay is the

same fee they always paid. The doctor, however, must pay for his necessities the higher prices which general prosperity entails. The butcher charges two or three cents more per pound for meat, milk is a cent or two more a quart, a dollar or two is added to the cost of the children's clothes, the plumber adds 10 per cent. to his little bill, and so on all along the line. But the doctor's fees are still the same. The country's prosperity is his ruin.

This is a serious problem for the physician, as well as for all those in salaried positions, or who live on fixed incomes, and its solution is most difficult. The monetary system in this country adds to the difficulty. In Europe, where the unit is the shilling, or the mark, or the franc, an increase in the professional fee of the poorer doctor may be accomplished by adding a unit, making it five shillings, or marks, insteads of four, or six francs instead of five, but here the unit is a dollar, and an increase of the usual fee by such an amount would be stoutly resisted, and would entail a material loss of patients for one who ventured to insist upon it. There are only two solutions of this problem. One is to restrict the number of physicians—an apparently impossible thing. The standard of requirements for the medical candidate has been very materially raised in the last decade, but the number of medical students has not been appreciably reduced. The only other solution is in concerted action on the part of the profession in any one locality to raise the fees for medical consultation and for operations. But this, if it were practicable, would open the door to the vicious principle of coercion, the dragging down of all to the level of the least efficient, which is the fatal objection to trades unionism. There would always be some who would refuse to adhere to the official fee, and who would then get the patients who could not or would not pay the price demanded by the majority of physicians. The boycott would be the only weapon in such a case, and that would have no terrors for the cut-rate doctor any more than it has now for the quack.

The only salvation for the medical practitioner is so to perfect himself in the art and practice of his profession as to compel patients who value their health and their life to come to him and pay the larger fees which his services are worth. The beginner must struggle along as best he may with a clientèle accustomed to small fees. Gradually, if he is worthy of his profession, he will prove himself, and as he does so he can raise his fees to a living figure. He may lose some patients, but will gain others higher in the social and financial scale, and through application and the exercise of tact may eventually lift himself to the level of the orator who can afford to decry commercialism in medicine.

The Practice of Medicine.

We quoted the other week a definition of medical practice—or, rather, a statement of what was not medical practice—formulated by Justice Deuel of this city. In another court, a few days later, Judge Joseph I. Green suggested another definition, which is much more comprehensive—we fear a little too comprehensive to be generally accepted. "The practice of medicine," he said, "is the exercise or performance of any act, by or through the use of any thing or matter, or by things done, given, or applied, whether with or without the use of drugs or medicine, and whether with or without fee therefor, by a person holding himself or herself out as able to cure disease, with a view to relieve, heal, or cure, and having for its object the prevention, healing, remedying, cure, or alleviation of disease." This definition certainly covers the ground, but it errs on the side of inclusiveness almost as much as the other did on the side of exclusiveness. If this were the legal definition of medical practice, incorporated in the statutes, a well-meaning friend who suggested a hot toddy as good for a cold in the head would be in danger of the judgment. The only saving clause is that which refers to a "person holding himself or herself out as able to cure disease"; but even that would hardly avail, for it is the amateur who claims ability to cure, while the real physician only promises to do what he can to relieve. The practice of medicine is as difficult to define as the practice of law. Everybody knows intuitively what it is, but no one has yet succeeded in formulating a perfectly satisfactory definition of it. Merely as a contribution to the discussion, and recognizing fully its incompleteness, we would offer the following definition as more nearly meeting the requirements than either of those suggested by the two learned jurists: "The practice of medicine is the prescribing of any remedy, material or immaterial, for external or internal use, mental suggestion, the manipulation of any part of the human body, the application of apparatus or mechanical appliances, the prescription of special exercises, or the formulation of rules of diet or hygiene, to be applied in an individual case to the cure or alleviation of disease by one claiming or credited with an ability—either a natural gift or acquired by special training or experience, or in any other way—to cure or relieve any defect or disease of body or mind, and who essays thus to treat a person, not a member of his or her family, whether for a fee paid or expected or without reward of any kind. This does not include the masseur or masseuse, instructor in gymnastics, instrument maker, pharmacist, nurse, or other person applying any therapeutic measure under the direction of a legally qualified physician." Such a definition would not affect sanitary engineers, hygienists, or others who formulate or put in practice measures of diet, hygiene, or sanitation designed to preserve or promote the health of mankind in general, nor would it put a penalty on domestic medicine—occasionally harmful, but impossible to abolish; but it would place restrictions upon quackery and check the activities of those who venture to treat the sick for gain without possessing the necessary qualifications.

Heart Disease and Pregnancy.

A great diversity of opinion exists as to the significance of heart disease in pregnancy. Some hold that this complication is one of extreme gravity, others that it is of comparatively slight importance and may be readily controlled by timely and appropriate treatment. A certain knowledge of the possible ill-effects of this condition has also spread among the laity, and anxious inquiries regarding the outcome are usually addressed to the attending physician by the family and friends. It is often a difficult matter to render a prognosis in any given case, and the uncertainty which exists with respect to this question may, perhaps, be traced to the fact that most observers have failed to recognize any distinction between the various forms of cardiac lesions in their relation to the pregnant state. The importance of this is shown in a lecture by Tuszkai of Budapest, recently published in "Volkmann's Sammlung Klinischer Vorträge,"

No. 407. From a study of the literature and personal observations he is led to propose a grouping of these cases with reference to the prognosis as follows: In the first group may be included those cases in which the cardiac lesion was present before the woman became pregnant. Here the prognosis is in general very bad. In the second group may be gathered those cases in which the disease of the heart, previously in a latent state, has been awakened to activity by the pregnancy. Women suffering from an angiosclerosis or those who have been afflicted with any of the infectious diseases shortly before the pregnancy began, are particularly liable to the complication noted. The diagnosis in these cases will be simplified by a knowledge of such a previous disease and the fact that the cardiac symptoms developed only during the latter months of pregnancy. The prognosis in this class of cases depends entirely on the severity and character of the original disease, being either very good or very bad. In the third group may be included those cases which present cardiac lesions peculiar to pregnancy. If the other two classes can be excluded, the diagnosis is not difficult. In this class belong the slighter forms of heart trouble, which are essentially of a functional character, and therefore furnish a favorable prognosis, the disease usually subsiding promptly after delivery.

News of the Week.

Fifteenth International Medical Congress.—The following addresses will be delivered at the general sessions, April 20 to 25, at Lisbon: (1) Sir Patrick Manson of London, subject not announced; (2) Professor Brissaud of Paris, Infantilism; (3) Dr. José Maria Esquerdo of Madrid subject not announced; (4) Dr. P. Aaser of Christiania, The Relation Between the Acute Infectious Diseases and Tuberculosis; (5) Professor A. A. de Azevedo Sodré of Rio de Janeiro, Pathology in Tropical Countries; (6) Professor Neumann of Vienna. The Anatomical Causes of Relapses in Syphilis and the Methods of Combating Them; (7) Professor Prince Jean Tarchanoff of St. Petersburg, Radium in Biology and Medicine or the Organotherapy of To-Day; (8) Professor Reclus of Paris, Local Anesthetics; (9) Professor von Bergmann of Berlin, The Problems of Modern Surgery.

To Remove Tax from Grain Alcohol.—Hearings are being held by the House Committee on Ways and Means at Washington on several bills to remove the internal revenue tax on grain alcohol for industrial purposes. A strong effort is being made by the painters to secure legislation to this effect in order that it may become unnecessary to use wood alcohol, and an artisan who had lost his eyesight from this cause in refinishing chairs appeared before the committee in support of the measure.

Death from Wood Alcohol.—One man was fatally poisoned, another almost died, and a number of others were made seriously ill as a result of a wood alcohol spree recently held by the prisoners confined in one of the large cells of Castle William, the military prison on Governor's Island. It is supposed that the liquor was smuggled in to the men by the visitors.

Immunization of Cattle Against Tuberculosis.—Von Behring, in a lecture delivered on February 8 before the German Agricultural Council, reasserted his determination not to reveal the details of his tuberculosis treatment for human beings until autumn. He reiterated his well-known views in regard to human and bovine tuberculosis, and said among others things that he was compelled to rely on the results of bovo-vaccination for elaboration of his treatment of human beings. He also described the present status of his method of immunizing cattle by means of a substance which he calls tuberculase, which is now obtainable in stable form. It must be injected subcutaneously, at periods varying from a fortnight to a month. The injection does not require technical skill or veterinary experience. The cost is moderate enough to enable it to be used in ordinary agricultural practice. While deprecating as yet the assumption that tuberculase can be used in treating human consumption, Professor Behring said that the results of his experiments opened a hopeful perspective respecting its employment for this purpose, but he emphasized the statement that as yet there was no scientific basis for assuming it could be so used. He added that he took great pleasure in announcing that he was approaching the aim toward which he had long been working—that is, the production of milk for infants, the use of which would be perfectly free from all danger.

Insanitary Street Cars.—The Manhattan Borough President has threatened to begin proceedings for the annulment of the charters of several of the street car lines operating in the lower east side if the cars are not kept in better order. He says in his letter of warning to the officials that the condition of the cars is positively indecent, that they reek with filth, have probably not received a coat of paint in years, and are in such a dilapidated condition generally as to be a menace to life and limb, as their unclean condition undoubtedly renders them a positive menace to the health of all who are compelled to use them.

Joseph Leidy Memorial.—The sum of $8,000 has been collected for the erection of a statue of the late Dr. Joseph Leidy, at one time president of the Academy of Natural Sciences, Professor of Human and Comparative Anatomy and Zoology in the University of Pennsylvania, and President of the Wagner Free Institute of Science, to be presented to the city of Philadelphia in recognition of his memorable contributions to the natural sciences. Dr. Leidy was born in Philadelphia in 1823 and he died in 1891. It is proposed that $10,000 be raised for the purpose in view.

Cost of the Yellow Fever Outbreak in Mississippi.—A supplemental report of the State Board of Health giving an account of the yellow fever outbreak in Mississippi, last summer, has been submitted to the legislature and shows that the total expenditures made by the board on account of the fever were $43,220.08, the greater portion of which was paid to quarantine guards. The report shows that the fever appeared at fifteen places in the State, and the recapitulation gives 837 cases and 61 deaths.

The Regulation of Marriage.—A bill has been introduced before the legislature at Albany prohibiting the marriage of imbecile, epileptic, insane, or feeble-minded persons; making it a felony for sound-minded persons to marry or live in the marital state with feeble-minded, insane, or epileptic persons or to assist such a marriage; and establishing by appointment by the Governor a commission to investigate the condition of the blind and compile a register thereof.

The Brain of a Thief.—In accordance with his desire, expressed two days before his death, the brain of a noted burglar who died recently in Jefferson Hospital will be turned over to the Wistar Institute for scientific study, and his body will go

to Jefferson Hospital for anatomical purposes. The dead man, who had spent more than one-half of his sixty-five years in jail, is stated to have been of a respectable family and well educated. He always asserted that he was a burglar not of his own free will, but impelled by an irresistible tendency, and he believed that a study of his brain might throw some light on the nature of his mental defect.

Sheltering Guardian Home.—Plans for the erection of a new home for the Hebrew Sheltering Guardian Society to cost $650,000 were announced at the annual meeting of the Board of Directors held February 4 at the institution, One Hundred and Fiftieth Street and Broadway. It is planned to purchase a tract of land of 400 or 500 acres within easy reach of the city and build on it forty or more cottages, each capable of housing twenty-five children. A school house, superintendent's cottage, reception house, and hospital would also be provided. It is expected that many of these cottages, which will cost about $10,000 each, will be donated by families in memory of deceased relatives, for whom the cottages would then be named as a memorial. The building fund now available amounts to about $325,000. A committee has been appointed to select a site, and as soon as this has been secured work will be begun.

Medical College at Pekin.—On February 13 the opening ceremonies of the Union Medical College at Pekin were held, under the auspices of prominent native and foreign dignitaries. The college was established by five Protestant missions acting jointly. Sir Ernest Satow, British Minister to China, presided. President Na Tung of the Board of Foreign Affairs represented the Chinese Imperial Government.

New Health Department Buildings.—The new laboratory building and the remodeled Willard Parker Hospital, at the foot of East Sixteenth Street, were formally opened February 9 by Health Commissioner Darlington, and the buildings were inspected by many physicians, surgeons, bacteriologists, and others interested in medical work.

Vaccination Revolts.—The people living in the neighborhood of York, Pa., are in a thoroughly aroused state owing to the enforcing of the compulsory vaccination act in that county. Threats are made to burn school houses, whip teachers, and punish school directors for insisting that the provisions of the law be carried out. The most disrupted school system is in Springettsbury township, where there are not enough pupils in attendance to fill one schoolhouse. Out of 370 pupils the number has been reduced to ninety-four.

Clean Money.—A bill has been introduced at Washington enabling any person or corporation to send worn out or mutilated United States currency to the Treasurer of the United States by registered mail and to receive in exchange therefor new United States currency without postage or registration charge either way.

Absinthe.—A national petition is being started in France by the trades unions, aided by the leading deputies, of the Left to prohibit the manufacture and sale of absinthe. The petitioners point out that absinthe kills tens of thousands of people annually. More of it is consumed in France than in the rest of the world put together, and it is alleged that it causes epilepsy, tuberculosis, insanity, and crime.

New Hanover County (N. C.) Medical Society.—At the meeting of this society, held on January 29, the following officers were elected for the ensuing year. *President*, Dr. Pride J. Thomas; *Vice-President*, Dr. S. E. Koonce; *Secretary and Treasurer*, Dr. R. H. Bellamy.

The Centennial Celebration of the New York County Medical Society.—The Medical Society of the County of New York will celebrate the one hundredth anniversary of its foundation by a dinner at the Hotel Astor, April 4, 1906. The price of tickets will be $6.00. Further information may be had from any of the committee on arrangements, Drs. W. L. Carr, *Chairman*, 68 West Fifty-first Street; H. S. Stearns, 45 West Fifty-eighth Street; and J. S. Thatcher, 820 Madison Avenue.

Smallpox in a Prison.—A convict in the Western Penitentiary of Pennsylvania who had been imprisoned for over a year has in some manner become infected with smallpox. Every precaution is being taken by the authorities to prevent a spread of the disease among the 950 inmates of the prison, who have all been vaccinated.

The United States Civil Service Commission announces an examination on March 21–22, 1906, to secure eligibles from which to make certification to fill vacancies as they may occur in the position of copyist (male), at $900 per annum, in the Bureau of Pensions. Age limit, twenty to thirty-five years, on the date of the examination. Only male graduates of recognized medical schools may be examined. Applicants should at once apply to the United States Civil Service Commission, Washington, D. C., for application Form 1312. No application will be accepted unless properly executed and filed with the Commission at Washington.

The Thirty-fifth Congress of the German Surgical Society will be held in Berlin April 4 to 7, in order not to conflict with the International Medical Congress to be held in Lisbon. The subjects for special discussion before the congress for this year are as follows: Military Surgery as Exemplified in the Russo-Japanese War; The Surgical Treatment of Ulcer of the Stomach; The Modern Operations for Cancer of the Rectum; Bier's Congestion Treatment in Acute Inflammation.

The Twenty-Third German Congress for Internal Medicine will be held in Munich April 23 to 26, 1906, with Professor v. Strümpell of Breslau in the chair. The pathology of the thyroid gland will be discussed on the first day of the congress by Professor Friedrich Krauss of Berlin and Professor Kocher of Bern.

Monongahela Valley (Pa.) Medical Society.—On January 26 an association with this name was formed by the physicians living in the neighborhood of Monessen. The officers elected for the new organization are: *President*, Dr. Gordon, Bellevernon; *Vice-President*, Dr. H. J. Repman, Charleroi; *Secretary*, Dr. J. W. Hunter, Monessen; *Corresponding Secretary*, Dr. J. C. Enos, Charleroi; *Treasurer*, H. W. Day, Monessen.

Dr. Clara Marshall, for thirty years Professor of Materia Medica and Therapeutics in the Woman's Medical College of Pennsylvania, has resigned from the faculty of that institution.

Obituary Notes.—Dr. Richard A. Terhune of Passaic, N. J., died on February 5, at the age of seventy-seven years. He was graduated in 1850 from the College of Physicians and Surgeons in New York City, and from that time practiced in Passaic until about ten years ago, when he retired from active professional work. He was the third physician of his family, which had practised in Passaic for eighty-five years continuously. Dr.

Terhune was the first mayor of the city. His death was caused by carcinoma of the stomach.

Dr. William E. Swan of New York died on February 4, after a long illness. He received his medical diploma from the College of Physicians and Surgeons in New York City, and after spending some time in Baltimore and Saratoga came to New York two years ago. Dr. Swan was born in Saratoga thirty-nine years ago.

Dr. D. Haven Starr, house physician of the Washington Asylum Hospital, died in that city on February 3, of septicemia, contracted from a patient. He was twenty-seven years of age and had recently finished a period of service at the Lying-in Hospital, New York.

Dr. Frank A. Payan of Providence, R. I., died on January 30, after an illness of three weeks. He was born in 1853 in St. Ours, Canada, but was graduated from Dartmouth Medical College in 1884, and since that time had practiced in Providence.

Dr. John Winsor of Quidnick, R. I., died on February 1 of tuberculosis, at the age of sixty-three years. He was born at Sterling, Conn., and had begun the study of Medicine at the Berkshire Medical College, at Pittsfield, Mass., when the War of the Rebellion broke out. He enlisted in the Twenty-sixth Connecticut Volunteers and later served with the Second Rhode Island Volunteers, resuming his studies at the close of the war and beginning practice in his native town. In 1870 he removed to Anthony, R. I., and later to Quidnick. He was for many years Health Officer of the town of Coventry, and was serving his fourth term as Medical Examiner for the First District of Kent County.

Dr. Julian C. Feild of Denison, Tex., died on January 31, of Bright's disease. Dr. Feild was born in Pulaski, Tenn., in 1841. After being graduated from the medical department of Tulane University, New Orleans, he served as surgeon in the Confederate Army. When Denison was first laid out as a town Dr. Feild located there and had since then served in many official positions. For thirty years he was local surgeon of the Houston and Texas Central Railroad.

Dr. Samuel R. Wooster of Grand Rapids, Mich., died on February 6, after a surgical operation. Dr. Wooster was born at Ansonia, Conn., in 1830, and was graduated from Yale College in 1857. He served through the Civil War as surgeon in several Michigan regiments, and after the close of the war went to Muskegon, where he practiced for several years, going to Grand Rapids at the end of that time. He held numerous government and local positions and was a charter member of the Grand Rapids Academy of Medicine, of which he was twice president.

Dr. Wm. Heverin Hobson died of typhoid fever at Philadelphia on January 30 at the age of thirty-six years. He was graduated from the Philadelphia College of Pharmacy and in 1895 from Jefferson Medical College. After graduation he became resident physician in St. Timothy's Hospital. He was married but five months ago.

Dr. Wm. G. Porter died of pneumonia at Philadelphia on January 30, at the age of sixty years. He was graduated in arts from the University of Pennsylvania in the year 1866, and from the medical department of the University in 1868. At once he became resident physician in the Philadelphia Hospital, and later was elected physician to the Philadelphia Dispensary. He was for many years surgeon to the Philadelphia Hospital and to the Episcopal Hospital.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

THE ELECTION OF MEDICAL CANDIDATES—MILITARY HYGIENE ON ACTIVE SERVICE—INFANT MORTALITY—INCREASE OF LUNACY IN LONDON—NOTES.

London, January 26, 1906.

The turmoil of the general election is not yet over, but the result, as the cable has informed you, is an utter rout of the party which has so long been in office. The organs of both parties and some of the speakers pretended to be confident as to the result of an appeal to the people, but I am sure both looked forward to it with doubt, and both are amazed at the extent to which the political pendulum has swung. The medical candidates, as usual, were few, and their claims have been brushed aside with more than the usual indifference. Sir Michael Foster has lost the London University seat. This is no surprise, as his career offended the party which chose him. Sir W. Job Collins has found a seat, though he is unsound on vaccination. Sir George Robertson of Chitral fame has succeeded as has also Dr. T. B. Napier. Dr. C. F. Hutchinson, Surgeon-General Evatt, and Dr. J. Court have also failed. On the other hand, Mr. R. J. Price, Dr. R. Rainey, Dr. Pollard, and Dr. V. H. Rutherford have succeeded.

The Scottish Universities will not poll until next month. For Edinburgh and St. Andrews, Mr. Strachey has come forward to oppose Sir J. Batty Tuke, M.D., who did good work. Mr. Strachey rests his claim on free trade and the editorship of the *Spectator*, a paper by no means friendly to the medical profession, but he promises to be guided by the British Medical Association. In this contest men are found arguing against the idea of the profession voting for one of its members, even men who argue on behalf of the winning side. With a coming majority over all other parties put together, they grudge one seat for their own calling. The labor class has set them an example and shown that only union can secure representation.

"Military Hygiene on Active Service" was the title of a paper at the Royal United Service Institution by Major T. H. J. C. Goodwin, R.A., M.C. Having remarked that in the South African war we had 400,000 admissions to hospital from disease and only 18,000 for wounds, and spoken of water, food, flies, dust, and polluted soil as causes of disease, he discussed the remedies. He said there were two which would overcome the evil. (1) A specially trained sanitary corps, to which, subject to military exigencies, would be committed the selection of camping sites, installation of water supplies, and kindred matters. Sterilizers, filters, destructors, and, in fact, all sanitary appliances, should be under the care of this corps. (2) The spread of sanitary education among combatant officers, who were mostly quite ignorant of these matters. He did not blame them, as at home all sanitary requirements were carried out for them, and they were never required to consider the subject. The subject was of vital importance for the service.

Col. Davies, sanitary expert to the advisory board, agreed that the co-operation of combatant and medical officers was most desirable. It would be well if soldiers practised during peace maneuvers the sanitary operations and precautions necessary in war.

Surgeon-General Keogh, director-general of the medical service, who presided, said he did not believe in the necessity of a separate sanitary corps. He would rather see the officers and men of each battalion educated on the subject. He admitted, however, that during war it would be desirable to establish special sanitation detachments along the lines of communication and at the base. Sanitary science, properly applied, would enable a reduction to be made in the dead weight of hospitals and their personnel.

The last report of the County Councils' medical office for education contains some rather curious results of an investigation into the physique of about 400 boys attending a particular school, classified according to cleanliness, clothing, and degree of crowding in their homes. The lowest class graded in this way always proved inferior in height and weight to the general standard of the school, and the highest class was correspondingly taller and heavier. These results are in keeping with previous investigations, but of course are very limited in extent. But a comparison of the statistics, as far as they go, with the rates of infant mortality in the district of the school in question, brings out an unexpected result. The boys were grouped according to the year of their birth, and the lowest group were those born in a year of high infant mortality, while the converse obtained in the highest group. These figures might have been expected, as they agree with similar ones found elsewhere. The report suggests that the "adverse environment which slaughters one in five (of the infants born) has a maiming effect on those left."

While the general death rate in England has been falling, the infantile mortality has been rising in manufacturing and urban districts, though not in rural localities. This fact confirms the conclusion of the Deterioration Committee, that the cause is in environment, not in heredity. Children are generally born healthy, but housing conditions, improper food, etc., soon exercise their influence on them. So also it is generally thought the employment of married women has an evil effect on their offspring. The talk about national degeneracy receives no support from the report above mentioned, nor from other similar sources. Overcrowding, malnutrition, neglect, and such like influences are the causes of the high infantile death rate. Nor can it be longer maintained that degeneracy of race accounts for the statistics, for conditions which are fatal in the first year of life must exercise an evil influence on those they do not kill outright.

Closely connected with this subject is Dr. Alexander's valedictory address at the Gynecological Society. He spoke out in vigorous language what not a few are thinking, and proposed drastic remedies for the waste of infant life and the continual breeding of those who, born healthy, are sure to become degenerates. He would not have poor-law hospitals used, as they now are, by depraved women for their own convenience to bring forth children and kill them by neglect and drunkenness. He gave statistics of one Liverpool workhouse hospital, showing that in 1904, out of 388 births, 158 were illegitimate; of these, 106 were the mother's first child, 31 the second, 16 the third, 13 the fourth, 8 the fifth! This in one workhouse alone, and there are two others in Liverpool. In this one, no less than 158 illegitimates were thus added to the nation, "both mothers and children being fostered and cared for in a way that the mothers of even middle-class independent and hardworking people cannot afford." Some may think the majority of these die. Dr. Alexander said it is not so, and might be well if it were. But he followed up 304 such infants born in 1903, for a year, and found only 88 had died, leaving "216 out of one parish to pollute the population, and there are hundreds of such parishes." He went on to say that "not a word could the authorities say to these women, but must prepare aseptic conditions and the first-rate accommodation in the wards," and this, as he said, at the expense of the ratepayers, "the hard-working men and women who have to support them and their children, not only in the infancy of the latter, but as tramps and criminals into which they degenerate for the rest of their lives."

To remedy all this, Dr. Alexander would forbid people to marry who "cannot build a nest for their young." He has no sympathy with the sentimentalism which encourages the propagation of "human rubbish," or with agencies which make it easy to evade the scriptural rule that "he that will not work neither shall he eat." Further, he says the nation should insist on mothers nursing their children. That is the "birthright of the child," and as soon as it is born it is entitled to the "protection of the community, who ought to insist on its having its birthright whenever it is possible."

The apparent increase in lunacy in London has been before the Royal Commission on the Feeble-Minded in the evidence of Sir John McDougall, formerly chairman of the County Council and of its Asylums Committee. He went into the figures as to the increase of patients, and compared it with that of the population. With an approximate increase of 11.87 per cent. of the population in the last fifteen years, the pauper lunatics to be provided for by the Council had increased at the rate of 50.7 per cent. He attributed part of this to the frequent interchange of patients between the two bodies charged with their maintenance, and thought the dual control unsatisfactory. Further, there was an increased tendency to certify persons of weak minds, especially cases of mere senile decay, which only required nursing. It is a serious matter for the families of these aged persons to be considered lunatics in view of the question of heredity. The public having become convinced of the extreme humanity of the modern treatment of lunatics, has quite abandoned the old prejudice, and seems to be too ready to send to asylums those who are merely feeble-minded from advanced age. This is hardly a tendency to encourage. Considering the several points, it would seem that the increase of lunacy is more apparent than real.

Dr. L. A. Weatherly, who is superintendent of a private asylum, gave evidence to the commission as to feeble-minded criminals. He said such persons were often sent to prison three or four times before their mental condition was discovered. In prison it might not betray itself, and even after it had been found out and the patient sent to an asylum, he was often discharged after a short detention and again got into the hands of the police. This was because facts observed by the certifier are required to be stated; but if the history of the case could be considered, it would often clear up the matter. Police surgeons seldom see a case until three or four convictions have occurred, and then they are expected to report after a brief interview with the accused. A prison is not the place for such persons; it has no deterrent effect on them. Nor is an asylum, as such are at present constituted. Dr. Weatherby advocated special penal colonies, and said these feeble-minded criminals properly supervised would do a considerable amount of useful work and would greatly benefit by doing it.

A course of lectures and demonstrations on the duties of army medical officers was begun on Saturday, at the West London Hospital by the director-general, in response to a request by a number of civil surgeons who wished to fit themselves for acting as a reserve for the Royal Artillery Medical Corps, in case of such services being needful during a great war.

Faddists often give us occasion to smile at their notions. It seems amazing, for instance, to notice that at the annual meeting of the Vegetarian Society, the president remarked that the good seed sown by them during eighteen years was producing fruit abundantly, so that now they "were advancing in battalions of food reformers, hygienists, antivaccinationists, anti-smokers, and abstainers from alcohol." Truly a motley army.

The attitude of the new government on vaccination is speedily producing effect. The Wandsworth Board has already addressed the Local Government Board, asking leave to enter into contracts with doctors who will take less than the authorized fees.

The Hospital Saturday Fund has accepted the recommendation of the distribution committee to award $23,636 between the 202 participating institutions.

THE PRINCIPLES OF ETHICS.

To the Editor of the Medical Record:

Sir:—In the Medical Record of January 27, I notice an editorial on "Medical Ethics." I am sure we are all happy that the New York profession is at last reunited, and I was sorry to see that this old question was brought up again, as it might stir up some bad blood. I perfectly agree with you that there are a lot of small things in it that might just as well be left out. The fact is that *you* know all about it and *I* know all about it; *we* do not need it. We have had the experience. If you will think away back when you were a student or had just graduated, how little you knew about it. You knew what was right and proper, but the hundreds of little details you did not know. If you had been taught them properly and studied the code of ethics, you would have saved yourself many a trouble. The code of ethics is for the *young man* who just starts out in practice. By studying it and remembering it, it will prevent him from doing many tactless things he otherwise would do thoughtlessly. I get around the State a good deal, to the small towns and villages, and then hear from the physicians how a young man comes into the town, and does not know enough to call on them and introduce himself. How he took a patient away, and did other unethical and untactful things. When I talk with the young doctors about it they are perfectly amazed. They did not think they did anything wrong. They never looked at it in that light. So the Detroit College of Medicine has made it a rule to give every year a series of lectures on the "Principles of Ethics," which does the students a world of good in their future career and saves them many heartaches and troubles. Hence I beg of you, let the "Principles of Ethics" stand as a guide to the young men in the profession. You might boil them down, you might change the phraseology, but the principles laid down in the "Letter of a Physician to His Son," written one hundred years ago, are as good to-day as they were then.

Detroit, Mich. J. H. Carstens, M.D

QUININE IN CHOLERA.

To The Editor of The Medical Record:

Sir:—Among the older readers of the Medical Record there are doubtless some who will be glad to learn that my prediction made at various times, chiefly in this journal, that under varying circumstances the mortality from Asiatic cholera should fall somewhere between 2 and 25 per cent., has been fully verified, by the report of Dr. Ussher, a medical missionary at Van, in Asiatic Turkey. About one year ago he there treated a most malignant outbreak of the disease with 100 per cent. mortality, for the first week of the epidemic. At midnight Saturday he began with my quinine treatment, losing less than 10 per cent. of his cases thereafter. (See *Journal of the American Medical Association* for February 3, 1906, page 361.)

It seems to me that after fighting the battle alone for thirty-three years, I should have some assistance from others having as much interest in humanity and the honor of the American medical profession.

Erskine B Fullerton, M D.

Columbus, Ohio.

Progress of Medical Science.

Boston Medical and Surgical Journal, February 8, 1906.

Vaginapexy.—This operation, as described by W. P. Graves, is the stitching of the vagina to the abdominal wall and is applicable to cases of extreme vaginal relaxation, such as prolapse, incomplete and complete procidentia and advanced cystocele. From a year's experience with the operation the author says that in not one single case, even where there has been extreme anteversion or much tension on the vagina and abdominal wall, have there been any bladder symptoms whatsoever, but, on the contrary, cases in which there were distressing bladder symptoms due to the accompanying cystocele, have been completely relieved in a comparatively short time. It may also be said that the anteversion itself disappears in a very few weeks, and examination shows the uterus to have settled into its normal position with regard to its longitudinal axis. With regard to the possible dangers which might ensue in case of a subsequent conception, the author is guarded in his statements. None of his patients have become pregnant since the operation. The indications for the latter are present in all cases where the vaginal attachment to the rami of the pubes has completely or incompletely given way and would, therefore, imply conditions of marked prolapse, complete or incomplete procidentia with accompanying cystocele. The number of operations done at the hospital with which the author is connected is 19. While it is too early to claim a complete cure for those recently done, the results as observed are extremely satisfactory and far exceed in value for a proportionate length of time the results of operations formerly employed for the relief of prolapse, procidentia, and cystocele. The technical steps of the operation are described in full in the paper. An illustration shows the sutures in position.

Contractile Processes in the Lung as a Result of Phthisis, with Reference Especially to their Production of Permanent Dextrocardia.—H. B. Dunham has collected the reports of about twenty cases of acquired dextrocardia as the result of chronic contractile pulmonary tuberculosis. In all, the right lung was the seat of the disease, which always seemed to be of a chronic fibroid type, with sclerosis of the lung tissue and bronchiectasis. The left lung has always seemed sound or but very slightly affected. Examination has shown, however, an augmented volume of the left lung, a fact which, in the author's judgment, is a potent causative factor of the complication. Detailed histories are given of two cases. In one the change of the heart to the right side was gradual and unnoticed other than the fact of a realization on the patient's part that the heart was beating upon the right side instead of left, where he had ordinarily been accustomed to feel it. In the other case transposition was sudden, at least in part, because the patient was conscious of the change in position, which occurred during a coughing attack, which he had while working, and he felt something move in his chest toward the right side. If coughing was responsible in any way for the movement within his chest, then certainly augmentation of volume of the left lung must have been a more important factor at that instant than the adhesions or slerosis of the right lung, which occurred but gradually. From observation of these two cases the author is inclined to believe that the emphysematous enlargement of the left lung was not merely a passive filling up of unoccupied thoracic space due to contractile processes on the opposite side, but to an attempt at genuine compensatory hypertrophy, which would cause slight pressure on the heart and the opposite incapacitated lung.

American Medicine, February 10, 1906.

Arteriosclerosis as a General Disease.—Alfred Stengel says the conception of arteriosclerosis as merely a passive process of hardening of the vessels is now completely out of date. A proper picture of the condition portrays a more general disturbance of the whole organism. Three stages of the disease may be recognized. 1. A preliminary one difficult of recognition in its beginnings and confusing to the clinician in his first efforts to distinguish what part the etiologic factors have contributed to the symptom-complex and what part has resulted from the arterial disease itself. 2. A middle period, during which the arterial disease is easy to recognize, but in which secondary organic changes have a role of variable importance. 3. A final stage of failure of circulation, organic failure and terminal infection. Arteriosclerosis as ordinarily seen begins in middle or later life, progresses regularly and slowly, involving all the vessels uniformly and causing a coincident involution of the body as a whole. Contrasted with this is the form seen in younger subjects, more rapid in its course, showing a tendency to the greater involvement of certain vessels causing notable functional disturbances. In this form especially are the general changes quite out of proportion to the arterial involvement. Some investigators have insisted that there is a preliminary presclerotic stage of continued high blood pressure attributed either to a spasm of the arterioles due to toxic or nervous influences or to a change in the viscosity of the blood causing obstruction to the circulation. Dr. Stengel's clinical studies have shown that in the earliest stages there is rather a condition of decreased tension with a tendency to temporary or paroxysmal elevations, that the condition is one of loss of elasticity in the vessels due in part to toxic alterations (degenerations) in the vessel walls. Among the varieties of early arteriosclerosis he has observed several more or less distinct types. The nutritional type presenting obscure disturbance of general health with a tendency to digestive disorders and anemia or pseudoanemia. The neurasthenic type with or without definite nutritional disorders. The nervous type with the tendency to vertigo, tinnitus, syncopal attacks in early stages or temporary paralysis, spasmodic or convulsive disorders, or disturbances of consciousness in advanced disease. In the more advanced stages of arteriosclerosis the disease may be classified under the following headings: (1) Thoracic; (*a*) cardiac or disturbances incident upon special involvement of the coronary arteries; (*b*) aortic, referring not merely to aneurysm, but also to a sclerotic and calcareous roughening without dilatation, but causing embarrassment of cardiac action. (2) Abdominal; (*a*) renal, manifesting itself in the symptoms of chronic interstitial nephritis; (*b*) intestinal, as evidenced by atrophy of the mucous membrane, tendency to chronic colitis, etc.: (*c*) pancreatic, difficult of recognition, often, however, active in diabetes; (*d*) hepatic, occurring as cirrhosis; (*e*) cerebrospinal, most numerous and varied, and (*f*) arteriocapillary, manifested in moderate circulatory disturbances.

Treatment of Mediastinal Carcinoma with the Röntgen Rays.—G. E. Pfahler reports six cases in which carcinoma of the mediastinum developed secondary to carcinoma of the breast. All of the patients had been previously operated upon. The diagnosis of mediastinal carcinoma was confirmed by consultation and by radiographs. One patient had palsy of the left arm, due to pressure of deep-seated cervical glands upon the cervical plexus. Treatment was directed to these glands as well as the mediastinum and was followed by what appears to be complete recovery. Three of the six patients have apparently recovered, though they are still under observation. In none were any bad results noted. Fifty per cent. of recoveries in an otherwise fatal disease, for which other forms of treatment offer no hope, justifies us in recommending this form of treatment to patients as early as possible.

Cerebrospinal Meningitis.—Geo. C. Merriman makes a strong plea for more thorough examination of the spine in cases in children which appear to be of pneumonia. He firmly believes that the enormous percentage of mortality in pneumonia among children has been due, in many instances, to unrecognized meningitis. In every case of acute lung involvement in children a careful examination should be made of the spine and neck and eyes. Pressure over the spine and at the base of the skull will bring out the tenderness in the cervical and dorsal regions. Examination of the eyes will sometimes, not always, show some inequality in the pupils, and the presence of photophobia. The finding of these symptoms in a case that appears to be pneumonia will put a totally different complexion on the case, and will change the entire outlining of the treatment. He reports at length a typical case which occurred in a child of six months.

The Edibility of Animal Spleens.—E. J. Williams, in the course of investigations on animal spleens, found them good to eat. He cooked them in various ways and tested them on his friends. They contain ¾ gr. of iron and ½ gr. of phosphorus per ounce. When raw they have a pulpy consistency which renders them unfit to eat. Heat coagulates their free albumin, and gives them a consistency to be cut and chewed. They must be eaten quite fresh. They decompose rapidly and cannot be kept over night, even on ice. To be safely eaten they must of course be healthy. All infectious diseases are liable to affect the spleen. All diseased spleens should be rigidly excluded. Dr. Williams concludes with general remarks on the dietetic value of spleens as a blood-making food.

Journal of the American Medical Association, February 10, 1906.

Ligature of the Common Duct.—Two interesting cases are reported by J. Ransohoff, in both of which there was apparently developing general peritonitis, supposedly of appendical origin. One, however, proved to be a case of gangrene of the gall-bladder, with no trace of gallstones and

with sterile contents. The gall-bladder sloughed away, almost *en masse*, five weeks after the operation, the wound closed and the patient made a good recovery. In the other case, there proved to be a tear of the common duct, allowing the escape of free bile in large quantities into the peritoneal cavity. It was probably due to a gallstone, though none was found. Both cases emphasize the fact that in the presence of peritonitis, a doubt as to its source makes for, rather than against, the advisability of operation. Ransohoff discusses the effect of bile on the peritoneum, and concludes that it is by no means an innocuous agent. He also calls attention to a symptom present in this case, the local jaundice of the umbilicus, which he thinks may be of value in diagnosis. It is probably the result of imbibition, and shows itself first at the navel because of the thinness of the abdominal wall at that point.

Amputations Below the Knee.—C. D. Clapp, having had several occasions to make leg amputations because of a painful Chopart stump, addressed letters to a number of surgeons and instrument makers requesting their opinions as to the various operations for partial or complete amputations of the foot. Considerable difference of opinion was elicited, and a wide variance between artificial limb makers and surgeons, which was especially noticeable in regard to the Symes operation. He thinks the opinions of the leg makers are worthy of considerable respect, as they often see more of the after-treatment than the surgeon. Clapp believes that the old theory of saving all that one can is absurd as applied to amputations below the knee, and that an ideal leg amputation is superior to many Chopart or Symes and most Pirogoff amputations. The Lisfranc operation, especially the Hey modification, gives a good stump, but Clapp advises preserving the attachment of the tibialis anticus when possible, and if not, to attach its tendons to the plantar flap. The same rule applies also to the peroneus tertius. He lays down the following points as essential in amputation of the leg: 1. Be certain of sufficient flap properly to cover the end of the bone, regardless of how close this may come to the knee joint. The flap must be considered first, length of stump second. 2. The most uniformly good results are obtained by making the long anterior with short posterior flap, bringing the scar well away from the end of the stump. 3. Redundancy is always undesirable. 4. When the length of stump is at the discretion of the operator, it should be from 6 to 9 inches below the lower border of the patella. 5. A periosteal flap, with coaptation of muscles over the end of the bone is always desirable. 6. The fibula should always be cut one inch shorter than the tiba, and when the amputation is near the knee joint, the fibula should be disarticulated and removed. 7. In all these amputations, nerves should be drawn out and cut as short as possible.

Pneumonia.—W. J. Galbraith says this is one of the foremost diseases to be considered by the medical profession, and he disagrees entirely with those who favor the expectant methods in its treatment. The first and the continued effort, he thinks, should be to fortify the heart and to destroy the germs and their products that produce sepsis. The chief thing in the treatment he advises, is that it prevents septicemia. His method, as summarized by him, is as follows: First a warm bath, followed by a calomel or phosphate of sodium purge. The first dose of quinine is given three hours later, provided the stomach is not disturbed. If the temperature is 105° or over he gives from 60 to 70 grains of quinine sulphate, followed in an hour by usually half the same dose. If the temperature ranges between 103° and 104°, from 40 to 50 grains are given as above. If a lower temperature is found, he gives 40 grains, his minimum initial dose. The use of the tincture of the chloride of iron is begun within three or four hours after the second dose of quinine, and in doses ranging from 10 to 15 minims at intervals of from two to six hours, depending on the condition of the pulse. In case the temperature rises to 101° or 102°, after it has reached the normal or subnormal mark, he administers from 40 to 50 grains of quinine at one dose and continues the iron in 15 minim doses every three or four hours. He protests against any compromise in the way of dividing the doses of either iron or quinine during the active pneumonic stage. If the stomach is rebellious it may usually be overcome by pepsin and guaiacol. He dresses his patients with as light-weight clothing as possible and provides thorough ventilation and advises plenty of liquid nourishment.

A Physicochemical Theory of Fertilization.— First defining fertilization physiologically as the impulse to development, M. F. Fischer and W. Ostwald argue that the essential morphological part of fertilization is the formation of the astrosphere and that it is to this that the impulse to development is due. They also believe that they can demonstrate that all the methods which can be used to bring about the formation of an astrosphere in an egg or its development are such as can be employed to bring about the conversion of a liquid colloid or sol of the approximate constitution of egg protoplasm into a solid colloid or gel, and that conversely, almost every method which physical chemistry has at its disposal to bring about the conversion of a sol into a gel is or may be used to bring about the normal or artificial development of the ovum. The formation of the astrosphere, or, according to their view, the process of fertilization, is identical with a localized and oriented gelation. In normal fertilization the impulse is furnished by the spermatozoon, or rather by its middle piece; in natural parthenogenesis the polar bodies which are not thrown off as in the former case seem to assume under certain conditions the gel-producing function of the middle piece of the spermatozoon, and in artificial parthenogenesis the impulse is supplied by certain physical or chemical stimuli, such as withdrawal of water, or mechanical stimuli. The authors believe, in opposition to some other biologists, that in all cases specific external conditions determine the development of the unfertilized egg, but that the colloidal solutions of the egg protoplasm lie exceedingly near their critical, that is to say their coagulation.

Suture of Heart Wounds.—J. H. Gibbon makes a third contribution to the subject of penetrating wounds of the heart, reporting his second case of suture of the heart and his first successful one. The patient, a healthy colored man, aged thirty-eight, had received a penknife wound in the right ventricle of the heart. Hemorrhage had been spontaneously controlled to some extent by pressure of the clot and liquid blood in the pericardium, and was readily controlled by digital compression during the operation, though the wound in the external surface of the heart was from half to three-fourths of an inch in length, and apparently half as extensive in the endocardium. The heart was held firmly against the pericardial opening with a traction suture of chromicized gut and four other sutures introduced with an intestinal needle closing the whole thickness of the wound in the heart wall. The patient was out of bed in two weeks, and was discharged in twenty days after the operation. At present he is well, and the heart action is normal. The pleura was uninjured, either by the wound or in the operation, no osteoplastic flap having been made, but merely excision of costal cartilage. In a future similar case, Gibbon would not attempt to drain the pericardium. The external wound, however, he thinks, should always be drained. Whenever there is suspicion of a wound of the heart an exploratory operation should be made. Gibbon advises against any too vigorous stimulation when wound of the heart is suspected.

The Lancet, January 27, 1906.

Interrupted Circulation as a Therapeutic Agent.—This plan of treatment is considered by W. Ewart, with special reference to rheumatoid arthritis. In the absence of an Esmarch's tourniquet the simplest substitute is India rubber tubing of suitable thickness, which is tightened around the limb in single or double loop outside a slight protecting pad. The duration of the constriction varies from half a minute to five minutes. Three applications at each sitting may suffice in most cases and two sittings daily may be desirable. No complications have arisen in the author's experience. The plan is contraindicated in patients with inflamed or tender nerve trunks or senile and calcified arteries. The following clinical results were noted: (1) Recent puffy swellings were rapidly amenable to a few applications, and in one case to a single application; (2) the inveterate puffy swelling associated with fibrous, cartilaginous, and bony thickenings was sometimes visibly influenced during the application. Its almost complete disappearance after a short series of sittings revealed the articular deformities in their sharper nodular outlines. (3) The periarticular thickenings were slower to yield but gradually diminished. (4) The thickening of cartilages and of the joint ends of bones may conceivably be found to yield to prolonged treatment. At any rate, some reduction has been observed in the diameter of the float-shaped knuckles and of the swollen wrists and knees in one case. But how much of this fining down may have been confined to the periosteum cannot be decided without more searching observation by means of systematic radiography. (5) The great improvement secured with the help of this method in the condition of the articular surfaces in conditions of absolute rigidity from adhesions, both as regards restoration of movement, diminution of crackling or grating, and actual reduction in the size of the joint as a whole, was evidenced in one case. (6) In connection with the latter case, attention may also be called to the fact that in limbs

so long disused all the tissues must benefit indirectly from the restoration of movement, in addition to any direct advantage conferred upon them by the tourniquet.

Acid Extract of the Duodenal Mucous Membrane as a Remedy in Diabetes Mellitus.—Three cases are reported by J. H. Abram. In all the results were favorable and seemed to justify a continuance of the remedy in the disease named. The author started with the demonstrations of Bayliss and Starling, who have shown that the contact of hydrochloric acid with the epithelial cells of the duodenum causes in them the production of a body which is absorbed by the blood stream and carried to the pancreas, then to act as a specific stimulus to secretion. He says that we do not know whether the internal secretion from the pancreas is derived from special cells or from the ordinary cells of the organ. We do know, however, that an active pancreas pours a larger amount of lymph into the efferent vessels, and this may include an increase in the internal secretion. We know also that the duodenal mucosa, pancreas, liver, and muscles are all concerned in carbohydrate assimilation. It is difficult in any given case of diabetes to determine which of them may be at fault; moreover they are all under the control of the nervous system, either directly or through the intervention of the blood-vessels. It is impossible, therefore, to say in any particular case, whether the acid extract will prove useful or whether combinations of extracts of these organs may be necessary.

A New and Easy Process of Triple Staining for Cytological and Histological Purposes.—The process is thus described by V. Bonney: (1) Fix small pieces of tissue in acetic alcohol (glacial acetic acid, 1 part; alcohol, 2 parts); (2) imbed, cut, and mount in the usual manner; (3) stain for one hour in a saturated watery solution of saffranin; (4) wash in water; (5) stain for a quarter of an hour in a saturated watery solution of methyl violet; (6) wash in water and wipe the slide dry except that part occupied by the section; (7) have ready in a drop-bottle the following solution: to 20 cubic centimeters of acetone add drop by drop a saturated watery solution of orange G. until the flocculent precipitate which slowly appears on shaking is just dissolved in excess of the watery solution; then filter; (8) flood the slide with this solution. A cloud of color immediately comes out, which obscures the view of the section; (9) pour this off on to blotting-paper and flood again with the same solution. The color cloud being much fainter the section can be watched. (10) When the section has attained a rather faint brownish-pink color, pour off the orange-acetone solution; (11) Wash in acetone for a few seconds. (This should be contained in a small glass jar. Acetone being very volatile, care should be taken that the section does not dry.) (12) Wash in xylol; (13) transfer to low-power microscope and see if the proper result has been attained; (14) wash in two fresh changes of xylol; (15) mount in xylol-balsam. Result: All chromatic elements, nucleoli, and certain nuclei, such as those of polymorphonuclear leucocytes, stain a rich violet, chromosomes standing out with peculiar distinctness. The spindle fibers of nuclear mitosis stain a faint pink. The cytoplasm stains a rose pink. The intercellular tissue stains a pale yellow. These effects are best seen if the slide be examined through a deep blue screen.

The Importance of a Strictly Limited Lactation.—Statistical tables are presented by A. D. Fordyce based on 405 children from 100 mothers. His general conclusions are as follows: (1) The concurrence of pregnancy, with lactation is comparatively common. (2) Conception is rare within the first six months of lactation and uncommon before the eighth month. (3) Where pregnancy and lactation overlap the fetus is likely to suffer. That every case must be judged on its own merits is a truism, but given fairly average conditions, a strong healthy suckling, and the prospect of intelligent hand-feeding, the above facts point very strongly to the advantages to be derived from weaning early in the eighth month.

British Medical Journal, January 27, 1906.

New Treatment for Housemaid's Knee.—F. J. Allen advocates the familiar subcutaneous rupture. He has tried it twice on his own person. Once by the blow of a boot and once by deliberately kneeling on the affected joint. The latter procedure he declares to be painless. If the bursa tends to fill again, gentle pressure will dissipate the fluid, and through the artificial opening a free communication is apparently established between the bursa and the adjacent lymphatics.

Epistaxis and Calcium Chloride.—A. T. White records the case of a man of 60 years, of a distinctly apoplectic type and with athermatous arteries who suffered from several severe nosebleeds. Apart from some rhinitis there was no nasal lesion. The author was loath to cauterize the nose, as apoplexy has followed in some cases so treated, so he prescribed calcium chloride in 10-grain doses thrice daily for ten days with permanent relief to the attacks of epistaxis.

Chloroform in Consumption.—Noting the good effects in consumptives following the administration of chloroform for anesthesia J. Holmes has been led to surmise that this volatile remedy may prove to be a distinct germicide in the condition obtaining in pulmonary tuberculosis. He suggests the use of the remedy as an inhalent mixed with a little eucalyptol and terebene to disguise the color and smell. Results have been uniformly good, but only in the palliative sense. The inhalations must be frequently repeated. The author believes that many bacilli may not be killed at each inhalation, but thinks it likely that they are so weakened as to fall an easy prey to the phagocytes. Chloroform, being very volatile and a parasiticide, ought to be an ideal drug for use in the lungs when bacilli are to be destroyed. Of course food and fresh air must not be overlooked.

Simultaneous Excision of Two-thirds of the Stomach, the Anterior Face of the Pancreas and the Transverse Colon for Carcinoma.—An account of this remarkable case is given by C. P. Childe, whose patient was a woman of thirty-five years. The colon was excised, not because it was itself involved in the disease, but because of the necessity of sacrificing its blood supply in order to get rid of the growth. Full details of the operation are given, but they cannot be reproduced here. The patient was somewhat collapsed at the end of the operation, but quickly rallied under an intravenous saline injection. Convalescence was uneventful. Stitches were removed on the eighth day, primary union having occurred. She was nourished entirely by the rectum during the first forty-eight hours. After this small quantities of liquids were given by the mouth, and at the end of fourteen days she was taking light solid foods. Five weeks after the operation she was doing well in every way.

Diagnosis and Treatment of Swellings of the Breast.—A. Clark enumerates as the various conditions which bring women to the doctor with the statement that they have a swelling in the breast, as neuralgia, mastitis, abscess, adenoma or fibroadenoma, cysts, and malignant disease. We are most perplexed in diagnoses between chronic mastitis and carcinoma. There are some cases in which a preliminary incision (when the patient is ready for a more extensive operation if necessary) is the only course to follow. Neuralgia is rarely met with, except in neurotic young women, and is nearly always associated with menstrual troubles, the pain being more at the periods. Acute mastitis presents the usual febrile condition, while chronic mastitis often causes much perplexity. It is often of an interstitial nature, with hypertrophy and thickening of the connective tissue, a sort of fibrous degeneration of the breast. Often the condition leads to duct compression and cyst formation. Abscess is generally made out without difficulty, unless it has assumed a chronic, localized form. Cysts may occur either from retention or as an expression of involution at the climacteric. The latter are movable with the breast, the skin moves over them, the hardness is variable, depending on the amount of fluid and the thickness of the cyst wall. The contents are often glairy and of a reddish-brown color. Cancer may be either acinous, or glandular, or duct cancer. Most of them are hard and scirrhus. Detailed characteristics of each are given along the usual lines. The author is an advocate of early operation, including the axillary contents in the parts to be removed. Some cases call for removal of the pectoral muscles, but the author deems it inexpedient to divide the clavicle.

Berliner klinische Wochenschrift, January 22, 1906.

The Treatment of Pulmonary Tuberculosis with Marmorek's Serum.—Stadelmann and Benfey say that although numerous authors have published observations favorable to the use of Marmorek's serum for the treatment of tuberculosis, their own experience with the remedy has not been satisfactory. Their observations were made in five cases presenting various stages of the disease, but the use of the serum was attended by such undesirable effects that they did not feel justified in pursuing the investigation further and subjecting a greater number of patients to the injections. The administration of the serum was followed by more or less protracted and severe elevations of temperature; local lesions of considerable gravity were noted about the site of injection; and itching urticarial eruptions, swelling of the lymphatics, and dizziness and nausea were other undesirable sequelæ. The cough, expectoration, and night sweats remained unchanged, but the general condition of the patients was altered for the worse, and though they recuperated promptly on stopping the injections, they in several instances refused to submit to further treatment in this way. The serum was obtained from Marmorek himself

and the injections were carried out strictly in accordance with his directions.

The Action of the Anticomplements.—Moreschi supplements his former observations on this subject by reporting the results of further experiments in the same direction. In these the amboceptor was furnished by the inactivated serum of rabbits adapted to washed goat corpuscles. The precipitin used was that of serum of rabbits treated with inactivated normal goat's serum or with egg albumen. The precipitinogen was normal inactivated goat serum and the complement normal guinea pig serum. The corpuscles employed were goat corpuscles washed three times in salt solution and used in 10 per cent. dilution. The conclusions reached were as follows: Precipitin and precipitinogen unite in variable proportion and form a series of precipitates exhibiting a more or less active anticomplementary action. All circumstances leading to a more pronounced precipitation involve an increase in the anticomplementary action. The immune body is not modified by the precipitate. In dealing with hemolytic sera the phenomenon of deviation of the complement noted by Neisser and Wechsberg for bacteriolytic sera may also be observed, but in this case the deviation of the complement is effected not through the excess of immune body, but through the specific precipitate. Anticomplementary sera in the sense indicated by Ehrlich and others, are precipitating sera.

Münchener medizinische Wochenschrift, January 23, 1906.

A Case of Subcutaneous Rupture of the Intestine Cured by Operation.—Hoepfl reports this remarkable case. The patient was a miner twenty-five years old who, five hours after his last meal, received a severe blow in the abdomen from an iron lever with which he was engaged in moving a coal car. He was knocked down and experienced violent abdominal pain, but got up again and continued performing his usual heavy work at moving the cars for some time longer. He was finally obliged to desist on account of pain and nausea, but walked to the hospital, a distance of over half a mile from the point where he was working in the mine. On admission, although an abdominal injury was suspected, his general condition was so good that operation was deferred. The next day, although the patient had been placed on strict starvation diet, he was by mistake given a small plate of cauliflower soup for which his great hunger had led him to beg. Shortly after this severe abdominal pain set in and the abdomen became much distended. A laparotomy was then performed, over twenty-four hours after reception of the injury, and it was discovered that the small intestine was the seat of a transverse rupture two and one-half cm. long from which intestinal contents were flowing out, while the entire abdominal cavity was filled with liquid feces. The intestinal wound was sutured, and after eventration of the intestine the abdominal cavity was flushed out with large quantities of salt salution, gauze drains were inserted, and the wound was left partly open. After a rather protracted convalescence the patient was discharged with the wound completely healed, and in condition to do light work. Three years after the original injury the patient was the victim of a fatal accident in which he was crushed by a flywheel. At the autopsy a broad band of adhesions was found uniting the small intestine about the region of the former injury to the abdominal scar. The author attributes the comparative euphoria which existed for the first hours after the accident to the fact that the patient's intestine was empty, so that but little escape of intestinal contents took place.

Appendicostomy.—Lanz bases his conclusions on 1,286 cases of appendicitis and 710 appendectomies. He has not lost a single case after operation and has had only a single instance of fecal fistula in the series. While he is an advocate of early operation, he believes that it is of the utmost importance to render operative intervention free from danger, and with this end in view he prefers to operate only at the very beginning of the attack or in the interval. It is only in exceptional cases that he allows himself to be persuaded to operate during the attack, and he then confines himself to incision of the abscess or drainage of the peritoneal cavity. After light attacks that have been under his own observation and unaccompanied by exudate, he operates as soon as the patient has recovered from the attack and regained his strength; if there is exudate, but this promptly subsides, he waits at least a month, and if the mass is slow to disappear, he waits for three months after the termination of the attack before performing the radical operation. He emphasizes the necessity for dosage of operations as of drugs, and considers it desirable never to overtax a patient's powers of recuperation by a too protracted operative procedure. One means of avoiding difficult dissections in cases ill suited for prolonged anesthesia is found in what he terms appendicostomy. If the appendix is buried in a mass of adhesions from which it would be difficult to liberate it, or it forms part of the wall of an abscess cavity, the author believes that in certain instances, as he has proved by experience, it is wiser to cut it through at the base and treat the cecal stump in the usual way, but to bring the distal portion of the appendix out of the wound, leaving its tip still buried in the adhesions. The wound may then be closed and at a much later date it will be found that through a process of shrinkage and fibrosis the appendical stump may be extracted without difficulty and without subjecting the patient to any risk. Any pus present will be found to have become sterile and to be no longer a source of danger.

Studies on the Leucocytes of Human Blood.—Schridde states that in order to arrive at satisfactory conclusions in regard to the origin of the leucocytes it is necessary to study the bone marrow not only in smears but also in sections. This has heretofore not been feasible on account of the difficulty of securing adequate differentiation by the staining methods in use, but the author has devised a method involving the use of azur II-eosin and acetone by means of which it is possible to demonstrate these granules successfully. His studies lead him to believe that the polynuclear leucocytes are derived from myelocytes or myloblasts by a process of differentiation of their protoplasm and granules. He holds firmly to Ehrlich's view of the individuality of the three types of leucocytic granulations and is convinced that these never change from one type to the other. The lymphocytes are to be considered as an entirely different race of cells and originate in entirely different prototypes. The lymphoblasts of the germinal centers in the lymph follicles form only lymphocytes and the myeloblasts produce only leucocytes. Normally leucocytes are formed only in the bone marrow and it is only under exceptional conditions that they are also elaborated in the perivascular tissues of other organs. The author attaches considerable importance to the observation that by means of his staining method it is possible to obtain satisfactory pictures of lymphocytes actually in the process of passing through the capillary walls, and he ascribes to these cells as well as to the leucocytes the power of active motion.

Deutsche medizinische Wochenschrift, January 25, 1906.

Observations on Frambœsia Tropica.—Castellani supplements his previous communications concerning the presence of spirochetes in the lesions of yaws by a further report fourteen cases of typical frambesia were examined, and in eleven instances spirochetes were found in the cutaneous lesions. Among these there was one very delicate variety which could be found in unbroken lesions without the presence of any other organisms, and Castellani believes that at present it is not possible morphologically to distinguish this organism from the *Spirochæta pallida*. As he is of the opinion, however, that frambesia is a different disease from syphilis, he states that should this spirochete be found of etiological significance in frambesia it must be different from the one of syphilis. He suggests for it the name *Spirochæta pertenuis seu pallidula*. Castellani in closed lesions also found in some instances peculiar oval or rounded bodies from four to eight μ in diameter, though larger and smaller ones are also observed, which stain light purple or blue with Leishman's stain and contain chromatin. It is possible that these may have some connection with the life history of the spirochetes. Ulcerating lesions were found to contain countless bacteria and several varieties of spirochetes. One of these is identical with the *Spirochæta refringens* and to another the author gives the name *Spirochæta tenuis obtusa* and to another the name *Spirochæta tenuis acuminata*.

A New External Hemostatic.—Schädel speaks well of the use of potassium permanganate as a hemostatic which was recommended recently by Vörner. The remedy was first applied in powder form mixed with charcoal in the proportion of three to one; but it was later found more convenient to use it in the shape of a paste. This may advantageously be prepared by the addition of about 4 per cent. of vaseline. The efficiency of the preparation appears to be somewhat impaired if it has been long exposed to the air. It has been used with good success in all forms of parenchymatous hemorrhage such as follows the excision of condylomata, warts, etc. It has also been found of value in nasal hemorrhage and in lupus. The hemostatic is applied by carefully drying the spot in question and then pressed some of the paste directly onto the bleeding surface. Slight burning is caused, but the sensation is not very painful.

Agglutination in the Hands of the Practitioner.—Loele describes the technique of making serum reactions by the aid of dead cultures. For the Widal reaction the process is as follows: The culture fluid is secured by spreading the necessary amounts of emulsion of typhoid bacilli over the surface of large agar dishes. At the end of twenty-four hours the mass of bacterial growth is flooded with a solution containing 2 per cent. of formalin and 6 per cent. of sodium chloride. This suffices to kill the bacilli, and the fluid is then filtered through coarse filter paper. Such a

preparation preserved at room temperature was found by the author to have lost none of its agglutinating power at the end of a year and a half. In order to carry out the reaction a capillary tube is used, one end of which is arbitrarily graduated into twenty equal parts. Nine such parts of formalin sodium chloride solution of the strength noted above are put into a suitable small tube and the patient's finger or ear is punctured. A suitable amount of blood is allowed to flow into the capillary tube, the number of divisions filled being noted. The blood is immediately blown into the formalin solution and enough of the solution is added by means of the capillary tube to make a 10 per cent. blood mixture. The preparation is set aside for a few hours in order to let the corpuscles settle, and then, using the same graduated capillary tube, suitable quantities of the fluid are added to a measured amount of the formalized culture in order to make the desired dilutions. It is to be remembered that the agglutinating power of whole blood is only about half as great as that of serum alone, and allowance must be made for this fact in preparing the dilutions.

French and Italian Journals.

An Unusual Case of Hereditary Syphilis.—F. de Queiros Mattono reports the history of a case of this nature. The patient was a child four months old. It was in an emaciated condition and had suffered since birth with dyspnea, which was exaggerated by muscular effort, by shrieking, crying, and so on. By exclusion, the diagnosis of hereditary laryngeal syphilis with respiratory stenosis and congenital wheezing, was made. At two different periods twenty-five injections of biniodide of mercury, five milligrams at a dose, were administered. This medication controlled the symptoms and brought about a decided amelioration of the condition, thus helping to confirm the diagnosis. After an investigation into all other causes of laryngeal stenosis, with negative results, the nature of this affection was determined.—*La Tribune Médicale*, January, 1906.

Tumor of the Left Breast in a Man.—Prat had this patient under his care. The man was sixty-five years old, strong, and inclined to be obese. Some months ago he was discovered to be suffering from diabetes, but after following a strict regime for some time the urine showed only slight traces of sugar. The lesion of the breast first appeared about ten years ago when a small swelling appeared which was sometimes annoying, but rarely painful. The swelling was considered benign, and for a long time it remained stationary. Four years ago examination showed it to be the size of a nut, and movable. The nipple was slightly retracted. At that time the diagnosis of malignant neoplasm was made and ablation was advised. In September, 1905, the tumor had increased greatly in size and was a mass as large as the fist. The skin over it was movable. The tumor itself was movable over the chest. The nipple was completely retracted. The neighboring ganglia were not appreciably enlarged. Operation was performed within a few weeks. Convalescence was uninterrupted. The tumor, after a histological examination, was pronounced to be an epithelioma. It was very rich in cells, but there was not much connective tissue. The cells were distributed in masses in the cavities. At the periphery of these masses the cells were clearly cylindrical, while in the center they were of various shapes according to the pressure which was exerted upon them.—*Bulletins et Mémoires de la Société Anatomique de Paris*, October, 1905.

Sections of Liver and of Spleen from a Case of Biliary Melanoderma with Splenomegaly.—Gandy recently exhibited to the Anatomical Society very interesting sections of the liver and the spleen taken from a patient whose death was due to biliary melanoderma of the Addisonian type with splenomegaly. The liver showed lesions characteristic of old biliary cirrhosis which was in the course of evolution. Here and there were numerous embryonic islands. The lesions of the spleen were especially abnormal. This organ weighed 880 grams instead of 200, the normal weight. On section, there were noted in the midst of the ordinary sclerosis of splenic pulp several nodules of a fibrocaseous aspect. Under the microscope these masses of tissue were found to be pigmented from a hemorrhagic infiltration beginning in the sheath of the follicular arterioles which were otherwise intact. There were no characteristics of tuberculous or syphilitic lesions, nor any due to infarcts. There was nothing abnormal about the suprarenal capsules.—*Le Bulletin Médical*, January 17, 1906.

A Case of Lichen Planus of Unusual Extent.—J. Nicolas and M. Favre have carefully observed this case. Its special interest had to do with the unusual extent of the lesion and its abnormal aspect, especially on the mucous membrane. The face and the scalp were the only parts intact. On the mucous membranes the lesions were confluent to a degree rarely noted in the literature of lichen. Otherwise, they were perfectly typical. Under appropriate treatment the affection was subsiding at the time of writing, and a good prognosis was given. Treatment consisted of the internal administration of arsenic, while the application of oil of cade was made to the lesions. Prolonged lukewarm douches under feeble pressure were also given.—*Lyon Médical*, January 14, 1906.

The Leucocytes in Malaria.—Giuseppe Valerio says that in malarial fever there is a marked increase of mononucleated lymphocytes, while the polynucleated remained unchanged. The author studied the effects of quinine in therapeutic doses on those phenomena, and formulates the following conclusions: The curve of the blood corpuscles shows a rhythmic rise in relation to the accessions of fever, which is probably of vasomotor nature. The use of quinine produces a sensible diminution in the percentage of white blood corpuscles. In an untreated case of tertian malaria there is a mononucleosis which is most marked at the height of the paroxysm of fever, while the number of polynucleated cells is below normal. This condition is inverted by quinine, under which there is an increase of polynucleated cells and a lessening of mononucleated ones.—*Giornale Medico del Regio Escrcito*, December, 1905.

Elimination of Uric Acid and Alloxuric Bodies by the Feees.—Carlo Bartoletti gives the results of his examinations of the feces of man in a normal condition, in gout, and in leukemia, thus: Uric acid is constantly found in the feces under normal conditions; alloxuric bodies are in relation to the quantity of the feces, not varying with the kind of food. In gouty patients there is a lessened elimination of uric acid, in leukemic conditions, an increase. The uric acid in the intestine is probably a product of the elimination by the digestive tube. The intestinal mucosa is of importance in the elimination of uric acid from the system. We may hope for new knowledge on the subject of the treatment of some pathological conditions by pursuing these researches.—*Ricista Critica di Clinica Medica*, December 16 and 23, 1905.

Is there a Special Red Blood Corpuscle in the Blood in Dementia Præcox?—Giuseppe Muggia has examined the blood of a variety of patients, including those affected by dementia præcox, epilepsy, paralysis, etc., in order to demonstrate whether, as was asserted by some authors, the blood corpuscles in the demented differed in staining characteristics from those of normal persons in such a way as to aid in the diagnosis of the condition. The author gives it as his conclusion that there is no difference of staining reaction between the normal blood corpuscles and those of the victim of dementia præcox, or other mental diseases. The differences in staining of the corpuscles is purely accidental.—*La Riforma Medica*, January 6, 1906.

The Causation and Treatment of Chronic Jaundice.—H. W. Syers defines chronic jaundice as a condition of persistent jaundice in which the symptom has been present for some time. This period is not arbitrarily fixed but it certainly lasts for six weeks or two months. The deep olive-green tint of skin so often noted in cases of persistent jaundice is not always observed. This affection may persist for long periods with no impairment of the characteristic bright yellow tint. In cases of chronic jaundice in which the gall-bladder is felt to be distended, especially at a comparatively early stage of the disease, there is considerable probability that the lesion is malignant. However, absence of obvious dilatation of the gall-bladder is perfectly compatible with the existence of malignant disease. The physical sign is very important as a positive indication, but its absence does not exclude carcinoma. Altogether apart from the presence of suppuration, rise of temperature, hectic in type, often occurs in malignant disease. Temperature must not be relied upon as an aid in diagnosis. The older the patient, the greater is the probability of an unfavorable diagnosis; nevertheless, malignant growths are observed in the young; and recently in a man seventy years old who was observed by the writer, chronic jaundice persisted for over a year and a half, together with wasting and loss of strength. This case was one of obstructon by gallstones with dilatation of the ducts. Increase in size of the whole liver, unless this change is rapid and uneven, is an unsatisfactory sign in relation to diagnosis. Treatment of chronic jaundice is absolutely unsatisfactory. The writer believes that the olive-oil treatment is powerless to relieve. In a large number of cases the only treatment left is the adoption of surgical methods, but the writer believes that there should be considerable hesitation before resorting to operation.—*Treatment*.

Book Reviews.

Physical Diagnosis, Including Diseases of the Thoracic and Abdominal Organs. A Manual for Students and Physicians. By Egbert Le Fevre, M.D., Professor of Clinical Medicine and Associate Professor of Therapeutics in the University and Bellevue Hospital Medical College; Attending Physician to the Bellevue and St. Luke's Hospitals, etc. Second Edition, Thoroughly Revised and Enlarged. Illustrated with 102 Engravings and 16 plates. Philadelphia and New York: Lea Brothers & Co., 1906.

While there has of late been no dearth of excellent new books dealing with this subject, some of them originating in this country and others appearing as English translations of foreign works, Dr. Le Fevre's manual seems to have secured a prominent place among them. This is hardly surprising, for the author has understood very well how the "insistent why" of the students he refers to in his dedication must be answered, and has given extremely clear and convincing explanations of the physical reasons underlying the auscultatory and other signs present in various phases of disease. This feature alone is sufficient to render the volume of especial value to the student, who, as the author says, is only too likely "to regard each variation from normal as pathognomonic of special disease rather than as dependent on changes in structure or function which may be present in conditions not necessarily pathological." The text of the present edition has been somewhat amplified in order to bring the book into accord with the modern tendency of teaching physical diagnosis at an early period in the curricula of the medical schools, and the number of illustrations has also been increased. The reproductions of skiagraphs of the chest are especially interesting and instructive. Only one inaccuracy of moment has caught the reviewer's eye, and that is the transposition of the two German words *Klingend* and *Klanglos* in the schema of graphic records of physical signs, with a resulting reversal of meaning. The popularity of the book shows that it appeals to the student's mind and it certainly possesses the virtues of clearness, comprehensiveness, and suitability for pedagogic purposes.

Life and Matter. A Criticism of Professor Haeckel's "Riddle of the Universe." By Sir Oliver Lodge. New York and London: G. P. Putnam's Sons. 1905.

Sir Oliver Lodge attacks the philosophy of Haeckel, particularly as expressed in the volume mentioned on the title page, with a degree of acerbity justified only by the eminence of the assailant. He especially deplores, he says, the fact that an English translation of the German scientist's work has obtained a wide circulation among the artisan class of England, being purchasable for sixpence at any bookstall, and the present volume is intended to counteract the erroneous conclusions as to facts and deductions into which its readers may be led. The chapter headings are as follows: Monism; The Law of Substance; The Development of Life; Memoranda for Would-Be Materialists; Religion and Philosophy; Mind and Matter; Professor Haeckel's Conjectural Philosophy; Hypothesis and Analogies Concerning Life; Will and Guidance; Further Speculation as to the Origin and Nature of Life. The author's opinion of Haeckel and his work may be derived from this extract taken from page 51: "He (Haeckel) is as it were, a surviving voice from the middle of the nineteenth century; he represents in clear and eloquent fashion, opinions which then were prevalent among many leaders of thought—opinions, which they themselves, in many cases, and their successors still more, lived to outgrow; so that by this time Professor Haeckel's voice is as the voice of one crying in the wilderness, not as the pioneer or vanguard of an advancing army, but as the despairing shout of a standard bearer, still bold and unflinching, but abandoned by the retreating ranks of his comrades as they march to new orders in a fresh and more idealistic direction." On page 168 he explains his attitude of antagonism by saying: "My chief objection to Professor Haeckel's literary work is that he is dogmatic . . . and would have people believe, what doubtless he believes himself, that he already knows the answer to a number of questions in the realms of physical nature and of philosophy. He writes in so forcible and positive and determined a fashion, from the vantage-ground of scientific knowledge, that he exerts an undue influence on the uncultured among his readers, and causes them to fancy that only benighted fools or credulous dupes can really disagree with the historical criticisms, the speculative opinions and philosophical, or perhaps unphilosophical, conjectures thus powerfully set forth." The author's eloquence of style, which is not, however, wholly free from the positivism for which he criticises Haeckel, and the evident sincerity of his convictions render the little volume an interesting exposition of the views of one of the most prominent scientific investigators of the day.

Spemanns Historischer Medicinal-Kallnder. 1906. Bearbeitet von Prof. Dr. J. Pagel und Prof. Dr. J Schwalbe, in Berlin. New York: Paul B. Hoeber, 1906.

This attractive calendar presents on each leaf either the portrait of some medical celebrity whose career is associated with that day, or a reproduction of some old print or etching having reference to medical subjects. Data regarding the birth and death of eminent medical men, and references to anniversaries in the history of medicine are also provided in great profusion. Sufficient space for memoranda is left on each sheet, so that the calendar should be both useful and interesting for German physicians.

Sea Shore Life. The Invertebrates of the New York Coast and the Adjacent Coast Region. By Alfred Goldsborough Mayer, Director of the Marine Biological Laboratory of the Carnegie Institution at Tortugas, Florida. New York: A. S. Barnes & Company, 1906.

The author of this charming little book has presented it as a gift to the New York Zoological Society, and the proceeds from its sale are devoted to the improvement of the Aquarium. It is the first of a series to be issued under the auspices of the Aquarium and intended to be written in simple fashion so as to be interesting to the layman, while, at the same time the standing of the authors will lend authoritativeness to the volumes. In the present instance this combination of qualities has been most successfully attained and we trust that a wide circle of readers will enjoy the excellent description and interesting photographs of the North Atlantic invertebrates which the author has prepared. The figures are nearly all reproductions of photographs by the author and bear witness to his technical skill in this direction as well as in the literary art. Even those who dwell far away from the shore may derive pleasure and profit from this attractive book.

Le Poignet et les Accidents du Travail. Étude radiographique et clinique. Par le Docteur Destot, Chef de Laboratoire de Radiographie des Hôpitaux de Lyon. Paris: Vigot Frères, 1905.

Destot presents a study of the mechanism of injuries to the bones of the wrist in its relation to accidents incidental to occupations. He aims to show the importance of the first row of the carpus in fractures and dislocations of the wrist, with the aid of radiographic studies directed especially to the physiology of the movements of the wrist bones and the statics and dynamics of wrist injuries. Destot furthermore attempts to give a summary of the diagnostic features of these injuries and of the numerous sources of error encountered by the accident expert. It is a pity that the illustrations—rough pen sketches—are beneath criticism. Not a single radiograph is reproduced of the hundreds taken by the author of this little monograph.

Lectures on Autointoxication in Disease, or Self-Poisoning of the Individual. By Ch. Bouchard, Professor of Pathology and Therapeutics; Member of the Academy of Medicine and Physician to the Hospitals, Paris. Translated, with a Preface and New Chapters added, by Thomas Oliver, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham; Physician to the Royal Infirmary, New Castle-upon-Tyne; Formerly Examiner of Medicine, Royal College of Physicians, London. Philadelphia: F. A. Davis Company, 1905.

It is twelve years since the first edition of this translation of Bouchard's Lectures on Autointoxication in Disease appeared. Unfortunately Professor Bouchard has not been able to rewrite or revise his original work, and consequently this second edition does not represent anything new from the pen of the distinguished author. But the translation has been revised and the subject has been brought up to date by several valuable additions on the part of the translator. Almost every chapter contains new paragraphs thus added by Dr. Oliver. Among the more important of these additions are sections on the toxemia of pregnancy; criticism of Bouchard's views on urinary toxicity; Kukula's experiments on intestinal obstruction; the views of Hoppe-Seyler and of Herter on intestinal toxins; Chambrelent and Bois' researches on the toxicity of the urine during pregnancy; the toxicity of indol; constipation; toxemia as a possible cause of asthma; gastric tetany and the experiments of Halliburton and McKendrick and of Bouveret and Devic; and cholera and its treatment. This new addition also contains an appendix of two chapters written by Dr. Oliver, one on the Natural Defenses of the Organism against Disease; and the other on Autointoxication of Intestinal Origin. The book as it now stands contains an able and up-to-date account of an important subject; and the reader will find in it not only a translation of Bouchard's work, but also considerable criticism of some of his theories; at the same time there is no lack of mention of the labors of many other workers in this interesting field of study. We are indebted to Dr. Oliver for a work which appeals to and should be read by every physician and student

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting Held January 4, 1906.

DR. CHARLES L. DANA IN THE CHAIR.

Reading of Annual Reports.—These reports were read by the secretary and ordered placed on file.

Some Recent Advances in Cardiac Pathology.—Dr. C. N. B. CAMAC presented this communication. He first referred to the last number of the the *Journal of Experimental Medicine*, in which appeared an article by Joseph Erlanger. This article (the first of a series) was an exhaustive report upon Adams-Stokes' disease and the production of "heart-block" in the dog. He said that His, Jr., had demonstrated in 1893 that the only connection between auricle and ventricle was a small strip of muscle situated in the auriculoventricular septum. This auriculoventricular bundle, or bridge, lay at the base of the middle leaflet of the tricuspid valve, where it most nearly approached the membranous septum and terminated at the root of the aorta. The length of this strip was 18 mm., the breadth was 2.5 mm., the depth, 1.5 mm. The muscular structure of the auricle was in a continuous ∞ shape, as was also that of the ventricle, the cavities of the heart being contained within the hollows of the ∞. The bundle of His was the sole connection between the auricles and ventricles. In 1904 His suggested that the bradycardia, epilepsy, pseudoapoplexy, etc., associated with Adams-Stokes' disease (first described by Adams, 1826, and subsequently by Stokes, 1846,) was due to a lesion in this bundle. He explained these phenomena on the theory that "heart block" occurred. Heart block was a condition in which the auricle beat at a different rate from that of the ventricle, and was first produced by Stannius in 1856 by placing a ligature about the auriculoventricular groove in the heart of a cold-blooded animal. Stannius was unable to account for this phenomenon which His assumed was the result of compression of the auriculoventricular bundle, the only means by which the impulse originating at the base of the heart could pass from the auricles to the ventricles. The ventricles thus freed from the auricles (their normal pace maker) beat at their own inherent slow rate, and thus resulted pulsations in the jugular two, three and four times more frequently than those of the radial artery, a clinical observation first made by Stokes in 1846. Erlanger in 1904, working in the Physiological Laboratory of the Johns Hopkins University, was able by means of a special devised clamp to compress this muscular bundle in the dog, and at will produce a half, third, and a quarter rhythm, and finally the complete block, *i.e.* the ventricle at a standstill while the auricles continued to beat. A series of experiments was carried out with different drugs which influenced the heart muscle, the sympathetic, and the pneumogastric nerves, and it was shown conclusively that the seat of trouble in the Adams-Stokes syndrome was in this auriculoventricular bundle. The significance of these observations was at once appreciated. They were not only confined to the Adams-Stokes syndrome, but extended as well to any condition which involved this muscular band as fatty, sclerotic, or circulatory changes, and influences exerted by variations in sodium and calcium composition of the circulating stream (Loeb, Howell, *et al.*) Dr. Camac gave a summary of the more important of the accepted physiological teachings with regard to the cardiac ganglia and inherent rhythm of the heart muscle (Weber, Engleman, Caskell, *et al.*) and their bearing upon "heart block." The ganglia had no power to originate impulses but acted as transmitting stations. The heart began to beat rhythmically in the embryo before it contained any nerves. He showed a specimen in which this muscular bundle had been tied off and dissected out. He also showed a specimen from a case of bradycardia with pseudoapoplectic seizures. The number of beats in this case dropped to 30 per minute. The aortic valve was much involved. The association of bradycardia and pseudoapoplectic seizures and involvement of the aortic valve deep down into the tissues were the significant features. The points for clinicians to watch for in contributing to this important subject were: (1) Bradycardia, paroxysmal or continuous; (2) pseudoapoplectiform and epileptic attacks with slowing of the pulse; (3) a jugular pulse beating at a different rate from that of the radial; (4) preservation of the uncut heart in case of death, until one familiar with the sectioning of this muscle bundle could be procured to make such a section.

The Treatment of Chronic Diseases of the Heart by the Nauheim Methods.—Dr. FRANCIS P. KINNICUTT read this paper, largely based upon his personal study of the treatment at Nauheim in the summer of 1904 and again in 1905. Every facility for this purpose was afforded him by Professors Schott, Heineman, and Groedel. The composition of the Nauheim waters and the technique of the baths and Schott "resistance exercises," the combination of which constituted the Nauheim treatment, were fully described. Dr. Kinnicutt then considered the physiological action of both the baths and the exercises, which established a scientific basis for their use. The subject was then taken up from the clinical standpoint and the therapeutic value of the treatment in the different forms and degrees of cardiac inadequacy were discussed. Finally, the speaker formulated these different forms in the order of benefit to be expected from the treatment, and gave the general contraindications for its employment, as well as the indications for the modification of the baths and the exercises in cases in which they were applicable. He was very positive in his opinion of the therapeutic value of the Nauheim methods, but insisted upon the necessity for much discrimination and care in their use, as they could be potent for harm as well as good.

Dr. GEORGE L. PEABODY said that in 1898 he spent five weeks at Nauheim and was then impressed with the fact that no two of the numerous physicians applying their treatment did so in the same way; the treatment then obviously was in the experimental stage. He also was greatly impressed with the willingness on the part of the patients to place themselves at his disposal as clinical material, and all seemed willing to aid him in his studies, allowing themselves to be examined before and after treatment. He was more impressed with the general results than the immediate effects. Many forms of cardiac inadequacy were much benefited by the treatment, and many of these people had been there for many successive seasons with the net results that good had resulted. As to the physiological explanation of the effects produced, opinions were still somewhat at variance, but he believed the following to be true. Hot baths caused an increase in the frequency of the pulse and dilatation of the peripheral blood-vessels, followed by decrease in pulse rate and lowered blood-pressure with improvement of heart tone. Cold baths contracted the peripheral blood-vessels, increased the blood-pressure, and lessened the frequency of the pulse. The mineral baths caused a mechanical irritation of the sensory nerves of the skin, and when carbonic acid gas was added the stimulation of the peripheral tissues was obvious. When a thermal irritation was added the presence of these chemical ingredients seemed to be able to cause a more persistent arterial flux to the skin, with dilatation of the peripheral blood-vessels, diminution of the pulse about 10 or 20 beats, and an increase in the blood pressure. Whereas, if ordinary water were used at the same temperature the pressure was likely to be somewhat lowered. Dr. Peabody said that too much should not be expected of the baths. In a general way they were not good in advanced cases of cardiac insufficiency. When we could hope to improve the bodily tone and strength of the patient, as in the beginning of failure of compensation with valvular disease, or early in the failure of the heart power with valvular disease, then they might be of value. Massage in a centripetal direction at the beginning of the baths at Nauheim had its influence in assisting the discharge of blood from the veins.

Dr. WILLIAM H. THOMSON related an interesting experi-

ence he had had. A man who appeared to be an ordinary laboring man came to his office and stated that he had been recommended to come to New York to consult some doctor regarding his heart. No cardiac impulse could be found, and the heart was extremely irregular in both frequency and volume, indicating that the organ had difficulty in emptying itself. He was puzzled to account for the amount of dilatation without concomitant symptoms. The arteries all over the body were healthy and compressible. There was no emphysema of the lungs. The urine was normal. He learned that the man's business was copper mining, at which he had been engaged for thirty years in Montana at an elevation of 7,000 feet. Arsenic was present like "hoar frost." Dr. Thomson concluded that he had a fatty degeneration of the heart from chronic arsenical poisoning, with dilatation because of working at an elevation of 7,000 feet. He had to go up and down ladders twenty times a day. One year later Dr. Thomson was called again to see the man at his hotel. He found him with orthopnea and in bad condition. After eight weeks he was able to go about his business. Dr Thomson overheard a remark about Nauheim and he told the patient that if he went there it would kill him. He lost sight of him for two months, when he was again sent for and found him suffering from general anasarca, etc., and two months later he died with secondary involvement of the kidneys. This patient had received 52 Nauheim baths. Dr. Thomson said that Nauheim physicians had requested that patients suffering from fatty degeneration of the heart should not be sent there.

Dr. Thomas E. Satterthwaite said that the inharmonious action of the auricles and ventricles in the Adams-Stokes syndrome might be functional. In a characteristic case where the patient was unconscious for more than a week the symptoms disappeared and he regained his former health. The lesions in such cases was some temporary disturbance in the cranial cavity. He had been practising the Nauheim treatment for nine years, and had prescribed thousands of baths, and thousands of exercises. The heart actually shrank under both baths and exercises, but not in all cases; sometimes the organ was so infiltrated with fibroid tissue, or bound down by adhesions in pericarditis, that it could not shrink. Of the conditions most benefited by this treatment, he would put the neurotic before the organic, placing angina pectoris in the neurotic class, as he held that it was almost always a functional disorder. The Nauheim treatment was intended mainly for cardiac irregularity or inadequacy. Of organic diseases it was particularly well suited for the dilatation of mitral insufficiency. Acute endocarditis, advanced tuberculosis of the lungs, and chronic parenchymatous nephritis were absolutely contraindicated. Personally he did not know of any mishap or bad result from the artificial baths. He had, however, seen a case in consultation, where an artificial bath, after a recovery from acute nephritis, had apparently precipitated a return of the disease, with a fatal result. In this country we were disposed to be more conservative than on the other side of the water, he believed. He employed it in only about 30 per cent. of his cardiac cases; in the balance it was contraindicated or impracticable, for various reasons. Views as to the advantages of general massage had altered of late. He never allowed any general massage of the abdominal region, because of its possible reflex action on the heart, if applied with much force. Direct massage of the heart was useful; it contracted the heart, as had been shown by Abrahams of California. But the physician alone should employ it.

Dr. Charles E. Quimby said that for fifteen years he had been treating cardiac cases differently, and his results had been such that he did not feel warranted in giving up his own treatment for the Nauheim.

Dr. A. Jacobi said that we had a great many heart remedies and the Nauheim treatment was to be classed as one of them. He spoke of the great difficulty in making a diagnosis in these cases, and by diagnosis he did not simply mean recognizing a murmur. All knew how difficult it was to make a diagnosis and to recognize the efficacy or absence of efficacy of remedies. He asked if Nauheim used other remedies. All were inclined to use one remedy for one thing, and this amounted almost to a fad. Sometimes one gave up well-established treatments for some new treatment and, therefore, he inquired if at Nauheim they used remedies besides the Nauheim treatment. While Nauheim was being eulogized he would not care to rely upon it unless careful attention was also paid to the well-established forms of treatment, particularly that which aimed at the relief of the heart muscle.

Dr. Kinnicutt said that the physicians at Nauheim were judicious in carrying out the treatment and that other treatment besides the Nauheim was used when it was thought advisable. Many patients came to Nauheim who were taking drugs, and these were not discontinued. The desire of these physicians was to get along without them if they could; but so far as his observation went they never omitted anything that was productive of good.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held October 12, 1905.

Dr. L. E. LaFetra in the Chair.

A Case of Acrondroplasia.—Dr. Henry Heiman presented this patient. A male infant, six months of age, was admitted to Mount Sinai Hospital in June, 1905, because of a genital abnormality which the mother desired corrected by operation. After operative procedure for hypoplasia of the penile structures the child was transferred to the medical service for observation. There was no history of dwarfism in the family. An older child, two years of age, was normal in intelligence and appearance. The previous history of the case was negative. The urine had always been voided from a small, round orifice, situated in the usual site of the penis. This opening was on a level with the surrounding skin, and underneath could be felt a small penile body about one-quarter of an inch long. When the lips of the orifice were everted there were disclosed the prepuce and glans of a diminutive penis. The left testis was in the scrotum, while on the right side was a hydrocele and a congenital hernia. The operation had resulted in no decided improvement in the appearance and position of the parts. The patient seemed to be well nourished and in good general condition. The facial expression was almost imbecile, the voice seemed to be normal, and the infant seemed to be able to see and hear. The head was about normal in size, but rachitic in shape, the bosses were prominent, the anterior fontanelle wide open, and the posterior closed. The hair was sparse and absent from the occiput, but otherwise normal. The ears were considerably deformed and the eyes negative. The nose was short, flat, and retroussé, the bridge short and depressed, the nostrils wide and directed forward rather than downward. The gums were enormously hypertrophic, irregularly thickened, showing elevations and depressions seemingly corresponding with the sockets of teeth. The gingival tissue was redundant throughout the whole extent of the upper and lower alveolar borders. The hard palate was high arched; the soft palate was thickened and extended almost to the posterior pharyngeal wall. The neck was short. There was no enlargement of the lymph nodes. There was normal thymic percussion dullness. There was eczematous eruption on the face and trunk. The conformation of the chest wall was normal. The abdomen was protuberant, the anus relaxed, and the rectum not prolapsed. The extremities were short, the bones curved and thickened. The soft tissue of the forearms and legs was markedly redundant. The motions of the joints seemed to be abnormally free. The hands were flat and showed the trident deformity. The third toe on both sides was diminutive, deformed, and without a nail. Most of the nails were ill developed. Subnormal temperature was frequently present. The weight

varied from ten and one half to thirteen pounds. The urine was negative. The hemoglobin percentage was about 35.

A Case of Cretinism.—Dr. HENRY HEIMAN also presented a case of cretinism which had shown rapid improvement under treatment with thyroid extract. This patient came under observation last February, when seventeen months of age. There was no family history of idiocy, consanguinity, or other possible etiological factor. Two older children were healthy and intelligent. At six months of age the child had pertussis. Later the abdomen began to enlarge and the child did not seem as bright as other children. At the age of one year the baby looked stupid, was unable to support its head, slept nearly all the time, and constantly protruded its tongue. The usual thyroid treatment was started and had been continued to the present time. In February, 1905, the child showed the characteristic symptoms of cretinism, while at the present time there were evidences of intelligence. The facial expression was bright. The skin had become smooth and soft, the hair abundant and fine, though the kyphosis remained unchanged. The head could be held upright. The macroglossia was still present, though infrequent and slight. At the age of seventeen months the child weighed 15½ pounds and measured 60 cm., while it now weighed 19 pounds, 2 ounces, and measured 71 cm. The abdomen was not abnormally prominent at the present time. The hernia was no longer present. The temperature was now normal.

A Case of Dwarfism.—Dr. FREDERICK L. WACHENHEIM reported this case. The patient was presented for some deformities which might lead one to think of dystrophy. The child was three and a half years old, with normal intelligence. There were a number of other children in the family showing conditions somewhat similar. The head was typically a rachitic one, and the face appeared rachitic. There was a depression of the nose and the palate was flat. There was a flattening of the thorax, and the arms showed thickenings at the epiphyseal ends. The most remarkable thing regarding the case was the condition of the legs. Both femora were short—the result green stick fractures. The tibia showed this deformity to a particularly high degree. The chief point of interest was the shortening of the femora. Attention had not been called to this condition, nor, in fact, had it been noted that these green-stick fractures had occurred. Two photographs of the patient were shown. There was a remarkably good demonstration of the rachitic hand.

Dr. CHARLES HERMAN, in discussing Dr. Heiman's first case, said that the marked curvature was not opposed to such a diagnosis as was made. He had seen cases of rickets in which the curvatures were even more marked than in this instance. He thought that the case of chondrodystrophy presented points which were not typical. The case was atypical with reference to the lower extremities. He could not recall any case of chondrodystrophy in which the condition was confined solely to the upper extremities.

Dr. NATHAN said that the fact that the lower extremity was shorter would not militate against the condition being one of chondrodystrophy. The upper extremities were quite characteristic. Dr. Nathan said that he had seen thousands of cases of rickets, but never one deformed to the extent of the case presented. The case would remind one of osteogenesis imperfecta. He thought the use of the *x*-ray would be useful in determining the condition and density of the bone. The condition in rickets was very different from that in osteogenesis imperfecta.

A Case of Congenital Syphilis with Bone Lesions.—Dr. NATHAN presented a young girl who came to him two years and a half ago with a swelling of the ankle, which looked like a tubercular arthritis. No history of syphilis was obtainable. A few months after he noticed that the condition was not localized, but extended along the tibia. In syphilis there would be a periosteitis and swelling of the bone in the region of the joint. Later on a gumma broke down, not into the joint, but externally. Tubercular foci break into the joint. He had placed the girl on antisyphilitic treatment and she recovered rapidly. Recently more characteristic lesions of syphilis were noted along the tibia, namely, the osteophytes. He found that this was due to a central gumma. The condition in this case was monoarticular.

A Case of Malaria, with Cerebrospinal Symptoms.—Dr. M. NICOLL, JR., presented this case. The patient was a boy, five and one-half years of age, the son of a United States Army surgeon. He had a history of severe bronchopneumonia in infancy, and a severe obscure illness of six weeks' duration in Cuba, which, it was thought, might possibly have been malaria of a remittent type, but the plasmodium was not found and quinine was not effectual. In July of this year he received a slight wound of the foot while wading in salt water. Two days later he was drowsy, slept restlessly, and complained of the back of his neck. His temperature was 102°. Fearing tetanus, the wound was opened and treated as though it were infected. Later in the day the head was retracted to a marked degree. The sternocleidomastoid muscle was tense. The head could not be sent forward with any justifiable degree of force, and attempts to do so caused pain referred to the back of the neck. A few hours later there were symptoms of approaching convulsions. A supply of antitoxin was sent for. The urine at this time was negative, the fresh blood showed plasmodia of a hyaline type, and consequently bimuriate of quinine was given between 5 P. M. and morning, when a second blood examination showed the same type of organism. During the next twenty-four hours eighteen grains of quinine were given. The patient made a rapid recovery. He had reported this case because he had not seen, nor been able to find recorded, a case so suggestive of involvement of the brain and spinal cord caused by malaria.

Dr. WILLIAM B. NOYES said that he had seen a similar case at the Columbus Hospital in 1895. A man fifty years of age was found lying in coma with stertorous breathing. Uremia and cerebral hemorrhage not giving localized symptoms were thought of. Before the patient died the blood was examined and found to be filled with pigment. At the autopsy no lesions were found except congestion of the brain. The sections of different parts of the brain showed a beautiful stain. The patient died from pernicious malarial fever. The pigment seemed to be more responsible for the general state of coma than anything else.

Dr. HENRY HEIMAN said that a patient was brought to Roosevelt Hospital with symptoms similar to those of the patient presented by Dr. Nicoll. The capillaries of the brain contained numerous parasites of pernicious type, *i.e.* crescentic. These types were rarely seen north of the Mason and Dixon line. Only a few cases were on record. He was inclined to believe that in the cases cited the parasites had been imported from Cuba, and had been lying dormant.

Dr. JACOB SOBEL said that possibly they might have been dealing with that grave form of tetany which was associated with opisthotonos, and asked Dr. Nicoll if Trousseau's phenomenon was present.

Dr. L. E. LAFETRA said that in connection with the cerebral types of malaria there were two other features which should be borne in mind: (1) those cases with marked respiratory symptoms and (2) those with cardiac symptoms. In the first there were symptoms simulating those of pneumonia. There was marked congestion of the lungs with the capillaries filled with the parasites, as they were in those cases with cerebral symptoms, where the capillaries of the brain had them in abundance. In the cardiac cases there was rapidity of the pulse, dyspnea, and prostration. He cited the case of a child where the question arose whether there was some serious heart trouble. The child was known to have some congenital lesion, and it was thought that fever had produced some change in the heart's action, and perhaps dilatation. Blood examination revealed the malarial parasite, and treatment with quinine quickly cleared up the dyspnea.

Dr. Nicoll said that Trousseau's symptom referred to was not elicited. The patient had not been out of Cuba more than nine or ten months, and he was inclined to think that the organism had been lying dormant in the system.

Myotonia Congenita or Thomsen's Disease.—Dr. Frank S. Meara referred to a treatise on organic nervous diseases in which Starr, writing in 1903, stated that but thirty cases had been recorded in the literature up to that time, and that the affection might, therefore, be considered rather a curiosity. A case was then cited by Dr. Meara that fitted so precisely to Thomsen's description that he deemed it worthy to be added to the published list. The case met with all the criteria of Thomsen's disease. It was a congenital affection of the muscles, characterized by a stiffness accompanying the initiation of every muscular movement, which passed off on continuance of the effort, and a peculiar change in the muscles in response to electrical or mechanical excitation.

Dr. James Ramsey Hunt said that he believed there were more cases on record than were given by the statistics quoted from Starr. He recalled a thesis in which one hundred cases were reported, and in the original theme of Thomsen twelve or fourteen cases were recorded. The pathology of the affection was very obscure. Some believed in the intoxication theory. Since the description of myotonia congenita the affection had assumed a much wider interest, and seemed to be associated with a great many other affections of the nervous system. Myotonias might come on in middle or early adult life. In his own work he had seen two cases within the last five years. One of these cases was of the acquired form coming on at the age of twenty-five years. It was confined to the muscles of deglutition, mastication, and of the hand, and was more or less stationary. No abnormal constituents were found in the urine. The other case was interesting because of the localization. The patient was a young girl, fourteen years of age, and there was a partial myotonic condition. This was difficult to bring in with the theory of autointoxication. There were groups of cases associated with atrophy instead of hypertrophy. Some atrophies were central in origin and some secondary to the myotonia. In speaking of myotonia, he thought it was always wise to speak of the allied condition which was called paramyotonia, which came on in otherwise healthy individuals after exposure to cold, etc. Cases had been described in which the symptoms of myotonia, with well marked electric reactions, had been associated with paramyotonias. There seemed to be some relationship between the two. Paramyotonia was supposed to be due to vascular spasm, producing an angiocontraction or angioconstriction of the blood vessels with resulting ischemia of the muscles.

Dr. Schwarz called attention to a form of myotonia occurring in infants under six months of age associated with gastroenteritis and congenital syphilis. There were two forms, one Erb's, with increased galvanic irritability, and the other accompanied by balling of the fist. Trousseau's sign was not present. It was distinguished from tetany in that one did not meet with the general phenomena of laryngismus stridulus, or continued spasm of the muscles.

The Etiology of Noma.—Dr. Charles Herman presented this paper. After reviewing the work of investigators on this subject, and describing his own work in detail, he said that, although absolute certainty was impossible until pure, uncontaminated cultures and successful inoculations in animals could be obtained, the following conclusions might be drawn with a fair degree of probability: 1. The microorganism which he called the spirochete of necrosis, corresponding to the streptothrix of Schiffert-Perthes, was the one which played the most important part in the etiology of noma. 2. This organism was identical with that found by Plant, Bernheim, Vincent, and others in the ulceromembranous lesions of the mouth, and, also, 3. with the *Spirillum sputigenum* and *Spirochæta dentium* of Millee, found normally in small numbers in the mouth. 4. Though apparently two organisms they were really different parts, or different stages of development, of the same organism. 5. This microorganism was not a bacillus, but probably belonged to a family which served as a connecting link between the bacteria and the protozoa, namely, to the family of *spirochætæ*. This explained why it could not be stained and grown on culture media by the usual methods. 7. This organism was probably present in the atmosphere in the form of very resistant spores. When deposited on food, water, milk, directly or indirectly, it might be introduced into the body with these. 8. It was closely related to *Bacillus necroseos* found in the necrotic processes observed in some of the lower animals. 9. In the human body this organism required unusual and exceptionally favorable conditions for its growth and development. On this account noma was very slightly contagious. In order that a gangrenous process should result, there must be a preceding physiological change in the tissue, which rendered it possible for the organism to penetrate, live, and multiply in the apparently healthy portions. 10. Ulcerative and gangrenous stomatitis represented different stages of the same process. 11. The presence of diseased teeth undoubtedly played an important part in the etiology of ulcerative and gangrenous stomatitis, partly by pressure and irritation, but primarily by producing a gingivitis, furnishing conditions favorable for the growth and development of the organism described, the space between tooth and gum furnishing a storehouse for fresh supplies. 12. In the infectious diseases of childhood particular attention should be paid to the condition of the teeth. When diseased they should be removed. 13. The most rational treatment of noma was the application of the Paquelin cautery. It should be introduced so as to destroy, not only the necrotic tissue, but also the finer filaments of the microorganism which have penetrated into the underlying apparently healthy tissue. 14. The term noma was here used to indicate a specific necrotic process. Similar processes might occur in any part of the body, providing always that certain physiological changes have taken place in the tissues, which rendered it possible for the microorganism to penetrate, live, and multiply in the apparently healthy parts.

Dr. Howard Lilienthal said that, considering the enormous number of poorly nourished children who were affected with the exanthemata, and who presumably had the spirocheta in their mouths, he thought it quite remarkable noma was such a rare sequella. He said that he could not understand why burning out the disease with the cautery should check its course. This proceeding did not change the condition of the patient, but only removed the affecting organisms. He was quite sure it was not necessary to kill all the bacilli, as in tuberculosis. A few months ago Dr. Koplik had transferred a child to Bellevue, refusing to operate because the disease was so contagious. Dr. Lilienthal said this was a surprise to him. He had been unable to find anyone who would say that the disease had spread in any ward in which it had been treated, yet all agreed that the affection was very offensive, and tried to get rid of treating it. It seemed to him that the sooner a child was operated upon, the better the chances of recovery. He believed that if noma was due to any specific organism in the mouth, wounds and operations in the mouth would show signs of infection, yet such wounds healed with great promptness because of the great blood supply.

Dr. Jacob Sobel said that during the past ten years he had seen three patients, all of whom had died. He did not believe that all cases of gangrenous stomatitis were due to one and the same organism. He could not understand why some cases should not recover while others, apparently hopeless from the beginning, should be cured. He believed the condition to be contagious, and thought such cases should be isolated. The cases of noma in which the diphtheria bacillus was found should be classed by themselves. When they were found in pure culture and antitoxin given the chances for recovery were increased. He

thought that gangrenous stomatitis was a form of moist gangrene.

Dr. J. Finley Bell of Englewood said that he had a patient last summer in the Englewood hospital who had had a frank pneumonia, and after it had resolved a sore was noticed in the mouth. The following day it had spread and he had cauterized it. The next day he was positive that he was dealing with a case of noma. The gangrene lasted four days, when the child died; the whole side of the face, from the eye down to the border of the jaw, was involved, and the affection had spread with great rapidity.

Dr. A. Mayer said that in all probability the name noma embraced more than one disease. Before the era of antitoxin it was not so uncommon to find noma following diphtheria. He had seen three or four such cases. He cited one case in which he felt sure that life had been prolonged by the use of antitoxin, and was confident that had the antitoxin been administered earlier the life of the patient might have been saved. A culture was taken which showed a mixed infection, Klebs-Loeffler with the streptococci supervening. It was in reality a streptococci infection. He said a recent method of treatment had been advocated which he thought might be of value, viz., the use of incandescent electric light through red glass, using 16 candle power.

Dr. J. L. Blumenthal recalled the case of a child fourteen months old which occurred in the Children's Hospital. The child was taken ill suddenly; in a few hours the gums became gangrenous. The gangrene spread so rapidly that the case was operated upon. To do a thorough operation several teeth were removed, and even a portion of the hard palate. In doing this the nasal cavity was exposed from the mouth, and the entire exposed surface was swabbed with nitric acid. He did not believe that the cautery would have done much good in this case, as the gangrene spread so rapidly. The case was kept in the ward with other children and no other cases developed. The child made a perfect recovery. The gingival portion grew so that four months after no one who looked at the child's face could tell that an operation had been performed. The remaining palate had continued to grow, and was completely covered in, so that it was difficult to tell where the operation had been done.

Dr. M. Nicoll, Jr., said that he had seen many cases of noma before the antitoxin treatment of diphtheria came into vogue, but since the use of antitoxin had become general, and immunizing doses were so often administered, noma had become very rare.

Dr. L. E. LaFetra said that he had been on the service at Randall's Island and could confirm all that had been said in regard to the severity of some of these cases and the satisfactory results that Dr. Bainbridge had obtained. He believed that the diphtheria bacillus was certainly the starting point of a great many cases of noma.

Dr. Herman, in closing the discussion, said that there was no reason why the diphtheria bacillus should not be found in the lesions of noma. If the antitoxin cured the diphtheria, that was all that it did cure. Noma could be found in other parts of the body. He considered that the disease was slightly contagious. He thought the cautery treatment was the best.

Stated Meeting, Held November 9, 1905.

Dr. L. E. LaFetra in the Chair.

Recent Ideas on Pathology and Etiology of Rheumatism.—Dr. David Bovaird, Jr., read this paper. He said that if we confined ourselves to the consideration of acute articular rheumatism we found that most authorities agreed that it was rare in infancy and childhood. Raucafuss found only 5 cases among 15,000 infants and Widerhofer among 70,000 had never sen a single case. The incidence of rheumatism increased with years. In England the curve of rheumatism closely corresponded with those of scarlet fever and typhoid. In Montreal and Boston, Osler found the largest number of cases in February, March, and April. There seemed to be some ground for a belief in a hereditary predisposition to rheumatism, although it would seem to play a less important part than was generally supposed. He briefly summed up the results of earlier studies on the bacteriology of acute rheumatism. According to Symes the preponderating weight of evidence was in favor of the view that the specific organism of rheumatic fever was a diplococcus which was capable of assuming a streptococcal form, and which might possibly, in the course of further involution, acquire a bacillary type. What most inclined one to accept his opinion was the fact that many observers in different countries had reported fairly concordant results. It was highly probable that the coccus found by various observers belonged to one and the same type, to which had been given the name *Diplococcus rheumaticus*. This organism measured 0.5 to 1 micron in diameter and was found in pairs or short chains, and had been isolated from the blood, urine, joint fluids, and tonsils in cases of acute rheumatism, from the valves in endocarditis, the effusion in pericarditis, and from the blood in chorea. It grew best in a medium of broth and milk acidified with lactic acid, but might be grown aerobically on blood agar, peptone agar, milk, broth, or gelatin. The diplococcus did not form gas, it stained readily by aniline dyes and was not decolorized by Gram's method. He said that his reasons for accepting this diplococcus as the specific organism in rheumatic fever were (1) its discovery by so many independent observers in the blood tissues, secretions or excretions of patients suffering from this disease, (2) its isolation in pure culture, (3) the inoculation of the organism in susceptible animals produced quite regularly arthritis, pericarditis, endocarditis, myocarditis, pleurisy, iritis, and chorea. He thought that while the chain of evidence might not be quite complete we might accept the proposition that rheumatic fever was an acute infectious disease and that the specific organism was known. The disease was suggestively like other acute infectious diseases. This theory of the etiology of rheumatism was far more rational than the old one. As we thus far knew nothing of the manner of infection beyond the fact that the organism had been found in the tissues of the throats of those suffering from rheumatic fever called to mind the emphasis that Packard and others had laid on the close relationship between attacks of tonsillitis and the outbreak of rheumatism. The distribution and occurrence of rheumatic fever appeared to present no greater problem than the one with which we were already familiar with in the case of pneumonia.

Types of Rheumatism in Children.—Dr. R. H. McConnell presented this paper. He said it was interesting to note how closely the types of rheumatism in children were allied to each other. During the past three years there were about 10,000 new cases admitted to the Vanderbilt Clinic and of this number about 8 per cent. were afflicted with some type of rheumatism. He said it was surprising how often one found a heart murmur with a history of growing pains or tonsillitis. The most frequent form, tonsillitis, occurred in about 35 per cent. of the cases. In 11 per cent. of the tonsillitis cases there were complications by one or more of the other types. Endocarditis was the commonest complication. Endocarditis which was second in frequency, occurred in about 23½ per cent. of the cases, and was so closely allied with the other forms that it was difficult to separate it. He had only taken those cases with a history of shortness of breath, pain, etc. The articular forms he ranked third, although they were about as frequent as endocarditis, occurring in about 23½ per cent. of the cases. This variety had the greatest number of complications, occurring in about 60 per cent. of the cases. Fourth in order was chorea, occurring in 14½ per cent. of the cases. Fifth in the series he placed muscular rheumatism or growing pains. This occurred in 2 per cent. of the cases. Torticollis, the sixth in order, occurred in 1 per cent. of

the cases and was complicated by tonsillitis or some joint lesion. Purpura occurred in ½ per cent. of the cases. Subcutaneous tendinous nodules were seen in three cases, as a complication to some other rheumatic condition. Pericarditis occurred in about ½ per cent. of the cardiac cases, but was always associated with endocarditis. The manifestations of rheumatism in children were so many that one had to be continually on the watch for them.

Diagnosis of Rheumatism in Children.—Dr. C. G. Kerley considered this subject. He said that the age of the patient was a factor of little importance. In children under fifteen months the disease was of the rarest occurrence. The majority of cases occurred in children between the fifth and tenth years of life. Points which might throw light on a case were a family history of rheumatism, a personal history of previous attacks of rheumatism, a history of frequent angina, of frequent so-called colds, a history of chorea, of frequent attacks of asthmatic bronchitis, of recurrent attacks of protracted vomiting, the evidence of former cardiac involvement. Many cases were overlooked because of a too narrow conception of the disease. Scurvy was frequently confused with rheumatism. This was a disease of infancy rarely seen after this age. An attack of rheumatism at this early age was a curiosity. In scurvy there was no elevation of temperature, while there was a tendency to involvement of the gums. Uncooked milk and orange juice would soon establish the diagnosis. During the early months of life, joint involvement with pain and local heat and redness with constitutional disturbance almost invariably meant acute epiphysitis or arthritis due to gonococcus or other infection. Muscular rheumatism in older children might have to be differentiated from muscular fatigue caused by excessive exercise. In muscular rheumatism the pain was more pronounced at about the same time each day, and worse when the weather was cold and damp. It had been his observation in a great many instances that the first diagnosis of flat foot, of spine and of joint disease, and of bone disease in general, was usually that of rheumatism. This was largely due to lack of thoroughness in examination, and not to the absence of sufficient differential signs. Joint involvement of a rheumatic character in older children showed temperature and localized signs characteristic in themselves, differing widely from those produced by other diseased states. Endocarditis occurred in the majority of cases of acute articular rheumatism. This was one of the manifestations of the disease, and not a complication. In an obscure case it might be of decided diagnostic value, and it might be the only actual evidence of rheumatism present at that time in the patient.

The Prophylaxis and Management of Rheumatism in Children.—Dr. F. M. Crandall read this paper. He said we did not do our duty by the rheumatic child if we treated only various symptoms as they arose without instituting prophylactic management. Even if we accepted the infectious theory of rheumatism, we should still continue to consider certain conditions as predisposing causes, the prevention of which must be an important part of prophylaxis. He considered the prevention of rheumatism under six headings: Clothing, exercise, hygiene, climate, diet, and prophylactic medication. The rheumatic child should wear flannels at all times, though thin ones in summer. Tepid and cool baths should be given even more regularly than to a normal child. He objected to the custom of exposing the legs of children to the cold. He recommended proper care of the throat, the removal of adenoids and large tonsils, as the throat was one of the most frequent portals of entry of the rheumatic infection. Exercise and outdoor life should receive particular attention. There were days of damp east winds when children of rheumatic tendency should not go out on the streets. However, they should not be deprived of proper and sufficient exercise. The parents of these children should be impressed with the importance of sending for the physician at every attack of joint pains, tonsillitis, influenza, etc. The mildest attacks were worthy of attention. The average child did well at the seashore during the summer, but in his experience not so well in the mountains at too high an altitude. Damp valleys or lake regions where there were many fogs were not to be advised. The rheumatic child more often required tonic treatment than did the average child. They were prone to be anemic, and should receive iron freely. Codliver oil was also valuable. Maintaining the nutrition by judicial feeding and exercise and the administration of codliver oil and iron were important features in prevention. He was convinced that we could do much by the use of salicylic compounds to prevent acute outbreaks of rheumatism. He could not urge the necessity too strongly of administering salicylate of soda in the intervals between attacks. Whenever there was a recurrence of rheumatic symptoms he advised the use of salicylate of sodium in doses of from three to five grains, three times daily, for one of two weeks of each month, for months at a time.

Dietetic Treatment of Rheumatism in Children.—Dr. W. Gilman Thompson read this paper: He said that the dietetic treatment of rheumatism had been particularly disappointing, as was often the case with climatic and other hygienic influences. If it were admitted that rheumatism was an infection, there was no reason for believing that it could be influenced specifically by any preventive diet. Rheumatism which produced rapid anemia and digestive disturbances might be aggravated by overfeeding, or a convalescence prolonged by underfeeding. The dietetic treatment of this disease was completely covered by the fundamental principles of feeding any child, namely, to select foods for their digestibility and to meet the demands of growth and development. During an acute attack the diet did not differ from that of an adult, which should consist of milk and bread or crackers and milk. For some time with milk the diet should continue to be chiefly farinaceous, but not saccharine. A little later it might be varied with broths, soups, chicken tea, custards, plain gelatin foods, etc. It was safest to allow no red meats for at least ten days or a fortnight after the subsidence of all fever and other acute symptoms. In cases of retarded convalescence there was less risk of inducing relapse by an increase in proteids, etc., than in prolonging the impaired nutrition and failing to increase the resisting power of the body. He thought that it was undesirable to withhold meats and sugars continuously with the idea of preventing a recurrence of the disease, although these articles of diet should be restricted within moderate limitations. The growth and development was more urgent than the alleged specific influence of any one variety of food. Even in cases complicated by chronic nephritis he had seen a decided improvement follow a reasonable addition to proteid food to the dietary. He encouraged the drinking of a copious amount of water at all times, but especially during acute attacks. The addition of fruit flavors would aid in the attainment of this object. In rheumatism there was no food or single class of foods which was curative, and there was none which was causative of the disease.

Medicinal Treatment of Rheumatism in Children.—Dr. William Shannon read this paper. He said that clinical experience had taught that lack of suitable diet was a potent factor in the production of rheumatism in children, and, consequently, it was difficult to discuss the medicinal treatment apart from the dietetic. It was well to administer a dose of calomel at once, one-sixth of a grain every half hour, and follow with a saline cathartic. This not only cleaned out the digestive tract, but acted as a cholagogue and diuretic and also obviated the cerebral effects of salicylic acid. This was at present regarded as the best remedy for all types of rheumatism. However, they exerted no permanent influence on the diathesis which was the cause of the disease. Natural salicylic acid was preferable to the artificial drug. Salicylate of sodium was the preparation which in his experience had given the most satisfactory results. It should be given in as palatable form as possible. It should be given on an empty stomach, though

in some cases it was better borne after meals. A child from five to ten years might be given from five to ten grains every third hour until there was a marked amelioration of the symptoms, which usually occurred in from twelve to thirty-six hours. After this the same dose was continued for four or five days. He had added to the above treatment powdered rhubarb, two or three grains, sodium bicarbonate, ten to twenty grains, three times a day, before meals, and had found that the mixture gave better results than the salicylate alone. After the salicylate was stopped the rhubarb and soda mixture was continued for several weeks. If endocarditis accompanied the other symptoms, its presence did not contraindicate sodium salicylate. If the patient was restless and could not sleep, three or four grains of Dover's powder, or a hypodermic of morphine, would slow the heart's action and secure sleep. No drug could protect the heart as well as complete physical rest. Pericarditis and pleurisy required the same treatment. After the acute stage was passed, iron and iodides were given with a view to the absorption of the exudates. Syrup of the iodide of iron in large doses gave good results. Success in the treatment of chorea depended upon our conception of its etiology. If we regarded it as rheumatism and treated it as such, results were satisfactory. Salicylates were the best remdies for rheumatic tonsillitis. Acetanilid combined with caffeine citrate gave relief from the aches and pains which accompanied this symptom. Purpura rheumatica was benefited by iron and arsenic after the use of salicylate. Tincture of opium and tincture of aconite applied to the joints gave relief.

Dr. L. Emmett Holt said that rheumatism was very infrequent during infancy and very often it was diagnosed when it did not exist, and again it was often overlooked in older children. He had seen cases of multiple arthritis of gonorrheal origin pronounced to be unquestionably rheumatic for several weeks before its true nature was learned. The youngest person attacked by rheumatism that he ever saw was a child aged 15 months. He believed the comparative immunity of children from rheumatism was due to something that pertained to the diet, or the child's surroundings. There was no specific diet for rheumatic children, and no article of diet could cause rheumatism. He believed one of the reasons why children had rheumatism so infrequently was probably because of their liquid diet. Two years ago, while in London, he said he was struck by the large doses of salicylates that were given rheumatic children, half an ounce being given in twenty-four hours in bad cases. He approved of the plan of giving twice as much bicarbonate of sodium as of salicylic acid; when it was given in this way children could tolerate larger doses.

Dr. Henry Koplik said that although we were coming to look at rheumatism, acute or chronic, in children as an infectious trouble, there was no question but that the infection was different in different cases. Rheumatism manifested itself in many ways, sometimes as chorea, sometimes as erythema nodosum, sometimes as purpura hemorrhagica, etc., and this showed the confusion which existed regarding the true nature of the disease. There was no dietetic treatment for rheumatism, but we should always bear in mind the importance of preserving the patient's nutrition. Rheumatism was rare n young infants not because of the liquid diet so much as because certain things were not developed in them which were developed later in life; they had no tonsils, and were not subjected to the dangers of adenoids, or adenoid operations; therefore it was much less common prior to the second year of life. If the disease had not too far invaded the organism, the heart being intact and the child comfortable, he believed much could be done in the way of prophylaxis. But if the disease got beyond certain lines it was one of the most severe affections of childhood. No physician could make a good child out of a bad rheumatic subject, and in most cases his best efforts would be balked. The remedies recommended in the treatment of rheumatism were legion.

Dr. J. E. Winters said that the specific which uniformly and unfailingly neutralized and counteracted the rheumatic virus was a product of the soil. Wintergreen oil was 96 per cent. methyl salicylate, and 169 grains of methyl salicylate would yield 138 grains of salicylic acid, the latter being converted in the intestine into salicylates.

Dr. Henry L. Coit of Newark said he had never seen a case of rheumatism in a child under one year of age but once, and then it was associated with endocarditis. One full dose of calomel was more effective in the initial stage than fractional doses of calomel. He relied more upon salicylate of quinine, because of its supporting action upon the heart, and its use was pushed even in the febrile stage of the disease. He had also obtained good results from the use of nascent iodine, especially in the relief of pain. Fruits and milk he employed during convalescence, but never at the same time.

Dr. Louis C. Ager of Brooklyn said that the salicylates were used principally as analgesics. The anemia which resulted was as much from the action of the salicylates as from the action of the rheumatic poison.

Dr. J. Finley Bell of Englewood said he had never seen cyanosis follow the use of the true salts, but only when the synthetic forms were employed.

Dr. James J. Walsh said that all were agreed that rheumatism appeared like an acute infectious disease, but he did not believe that it was due to any one microorganism. There were mild pyemias which presented many manifestations and had to be treated in various ways, according to the manifestations, and he was of the opinion that rheumatism belonged to one of these forms.

Dr. Henry Dwight Chapin said that when a child had "growing pains" one should keep in mind the muscular wearinesses which occurred in growing children, as well as certain bruisings which were so common. If the child limped it should be carefully examined for bruises. In rheumatism pains occurred in the morning as well as afternoon; but if the pains resulted from incomplete tissue metamorphosis they appeared after play. Dr. Chapin was of the opinion that if the salicylates did not relieve the rheumatism in a short time they would fail to relieve in that particular attack.

Dr. Henry Heiman said that practically all were agreed that rheumatism was an infectious disease. He called attention to the blood count as a possible means of conferring this immunity in children. In the new born the white cells numbered from 19,000 to 20,000, while in adults they numbered from 7,000 to 11,000. Whatever salicylic acid preparation was used should come from a reliable source. He thought it was better to write for salicylic acid and bicarbonate of sodium together; this would form a pseudospecific. The intermittent treatment should be employed as in syphilis and malaria.

Dr. W. Gilman Thompson said he did not believe there was any specific food for the cure of rheumatism, nor could any food be used as a prophylactic.

College of Physicians of Philadelphia; Section on General Medicine.

At a stated meeting held December 11 Dr. F. J. Kalteyer demonstrated "A Case Presenting Unusual Features of Angina Pectoris." The patient was a young woman, 27 years old, who had scarlet fever and other diseases of childhood and later an attack of rheumatic fever. Following the last disease she had observed palpitation of the heart and breathlessness on exertion, and in a short while she began to suffer from attacks of precordial pain of varying grades of severity. Relief was obtained from the use of nitroglycerin in the form of spirit of glonoin, which at the time of report the patient was taking in amounts up to 50 minims daily. The heart was greatly enlarged, especially toward the left, a thrill was palpable in the precordium and diastolic and systolic murmurs were audible at the aortic area and a presystolic murmur in the mitral

area. Dr. Wm. E. Hughes presented a communication entitled "The Clinical Significance of Precordial Pain." He omitted from consideration pain due to myalgia and neuralgia, but dealt especially with that referable to functional and organic disease of the heart and the aorta. Such pain is not uncommonly observed in connection with intoxication with alcohol or with lead, with anemia and chlorosis, with myocardial disease, and dilatation of the heart and valvular disease and inflammation of the aorta and with angina pectoris. Dr. D. L. Edsall presented a communication entitled "Clinical and Experimental Observations on the Effects of *X*-rays in Certain Medical Diseases." He referred to the fact that in certain cases of leukemia good results are obtained from the use of the *x*-rays, while in certain others the reverse is the case. In the former it has been found that the metabolic activity is increased, while in the latter it is not. The view was proposed that under the conditions first named the rays are capable of inducing a condition of autolysis affecting more especially the leucocytes. Attention was called also to the disastrous effects observed in some cases of pernicious anemia from the therapeutic employment of the *x*-rays, the result being attributed to a primary depression of the metabolism, which under favorable circumstances may be followed by a secondary increase. Dr. J. Allison Scott read a paper entitled "A Clinical Report of Cases of Typhoid Fever Complicated by Suppuration, with Special Reference to the Changes in the Number of Leucocytes in the Blood." He explained that the leukemia of the disease must be due to some influence affecting adversely the multiplication of leucocytes, as even in cases in which suppurative and other conditions occurred that ordinarily gave rise to leucocytosis, this does not occur or if it does occur the degree of leucocytosis is much lower than is usually the case. He cited cases presenting various forms of suppuration and other complications, such as ovarian abscess, suppurative parotitis, pneumonia, perforation of the bowel, bone abscess, etc., in which this doctrine seemed to be exemplified. Dr. J. M. Swan presented a communication entitled "Report of a Case of Paratyphoid Fever." The patient presented the classical symptoms of typhoid fever with the exception of the agglutination reaction. Blood-cultures proved negative, but bacilli resembling the paratyphoid bacillus were isolated from the urine and these were agglutinated by the patient's blood-serum, but not by serum from cases of typhoid fever.

Philadelphia Pediatric Society.

At a stated meeting held January 9, Dr. S. McC. Hamill presented "A Case of Internal Hydrocephalus." The patient was a girl about fourteen years old who had an enormous head with remarkably little distortion of the face and with a considerable degree of intelligence. Dr. Hubley Owen demonstrated "A Case of Acute Bronchopneumonia Complicated by Symptoms of Multiple Neuritis." The patient was a child about seven years old who, following an attack of bronchopneumonia, presented weakness in all four extremities, with slight wrist-drop and foot-drop, steppage gait, degenerative electric reactions, abolition of knee-jerks, tenderness in the course of the nerves, and control of sphincters. Dr. Owen also demonstrated "A Case of Spastic Paralysis Following Scarlet Fever." The patient was a child about three years old, who in the sequence of an attack of scarlet fever exhibited weakness of the lower extremities, with increased knee-jerks and ankle-clonus on side, and also retraction of the head toward the right and deflection of the face toward the left. There was no evidence of Pott's disease and intelligence was unimpaired. Dr. Eleanor C. Jones exhibited "Specimens of Congenital Adenosarcomata of the Infant Kidney, with Report of a Bilateral Case." The specimens came from a child seven months old with swellings in each loin, which after death were found to be due to a large adenosarcoma involving each kidney, the organ being distorted and expanded over the surface of the new growth. Dr. Samuel McC. Hamill presented a communication entitled "A Case of Infection by the *Micracoccus Hæmorrhagicus*." The following officers were elected for the ensuing year: *President*, Dr. Alfred Hand, Jr.; *Secretary*, Dr. Maurice Ostheimer; *Treasurer*, Dr. Howard Childs Carpenter; *Recorder*, Dr. Chas. H. Weber.

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Etudes sur le Traitement des Fractures des Membres. By Doctors J. Guilloux, L. Eissenbeck, J. Faidherbe, A. David L. Merveille and Ad. Platel-Desclée. De Brouwer et Cie., Lille, France.

Die Blinddarmentzündung (Perityphlitis) In der Armee Von 1880-1900. By Dr. Stricker. 23d Edition. 8vo, 110 pages, illustrated, muslin. August Hirschwald, Berlin. Price 4 Mark.

The Signs of Internal Disease with a Brief Consideration of the Principal Symptoms Thereof. By Pearce Kintzing, B.Sc., M.D. 4to, 374 pages, illustrated, English silk. The Cleveland Press, Chicago. Price $3.00; half morocco, Edited by J. Rousset, 8vo, 1,644 pages, illustrated, paper. $4.00.

Bodily Deformities. By E. J. Chance, F.R.C.S. Eng. Edited by John Poland, F.R.C.S. Eng. Second Edition, Vol. One. 12mo, 315 pages, illustrated, muslin. Smith, Elder & Co., London. Price 6/.

The Physiology and Therapeutics of the Harrogate Waters, Baths and Climate Applied to the Treatment of Chronic Disease. By William Bain, M.D., M.R.C.P., and Wilfred Edgecombe, M.D., F.R.C.S. 8vo, 300 pages, muslin. Longmans, Green & Co., New York. Price $2.60 net.

The Changes Produced by Inflammation in the Conjunctiva. By M. S. Mayou, F.R.C.S. 8vo, 179 pages, illustrated, muslin. William Wood & Company, New York. Price $2.75 net.

Lectures on Tropical Diseasees. By Sir Patrick Manson, K.C.M.G., M.D., LL.D., F.R.C.P. 8vo, 230 pages, illustrated, muslin. W. T. Keener & Co., Chicago. Price, $2.50 net.

Handbook for Attendants on the Insane. By the Medico-Psychological Association. Fourth edition, reprinted with revised regulations. 12mo, 158 pages, illustrated, muslin. W. T. Keener & Co., Chicago. Price, 80 cents net.

L'Anesthesie Chirurgicale par La Stovaine. Par le Dr. Leon Kendirdjy. 12mo, 203 pages, paper. Masson et Cie., Editeurs, Paris, France.

A Pocket Formulary. By E. Quin Thornton, M.D. Seventh Edition. 32mo, 287 pages, leather. Lea Brothers & Co., New York. Price, $1.50 net.

L'Injection Tracheale Simplifée. Par le Dr. Henri Mendel. 12mo, 79 pages, illustrated, paper. F. R. de Rudeval, Paris, France. Price, 1 fr. 50.

The Diseases of Infancy and Childhood. By Henry Koplik, M.D. Second Edition. 8vo, 885 pages, illustrated, muslin. Lea Brothers & Co., New York. Price, cloth, $5; leather, $6, net.

The Surgical Treatment of Chronic Suppuration of the Middle Ear and Mastoid. By Dr. Seymour Oppenheimer. 8vo, 425 pages, illustrated, cloth. P. Blakiston's Son & Co., Philadelphia.

Squibb's Materia Medica. 1006 Edition, Part II. 8vo, 304 pages, illustrated, muslin. E. R. Squibb & Sons, New York.

Physiologie und Pathologie des Mineralstoffwechsels. Von Dr. Albert Albu und Dr. Carl Neuberg. 8vo, 255 pages, muslin. Julius Springer, Berlin. Price, 7 marks.

Materia Medica, Pharmacy, and Therapeutics. By Samuel O. L. Potter, A.M., M.D., M.R.C.P. Tenth Edition. 8vo, 914 pages, muslin. P. Blakiston's Son & Co., Philadelphia.

A Handbook of Climatic Treatment, Including Balneology. By William R. Huggard, M.A., M.D., F.R.C.P. Lond. 8vo, 536 pages, muslin. Macmillan & Co., Ltd., New York. Price, $4.00.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending February 10, 1906.

	Cases	Deaths
Measles	1390	49
Diphtheria and Croup	432	49
Scarlet Fever	215	16
Smallpox	.....	.....
Chickenpox	151	.....
Tuberculosis	349	161
Typhoid Fever	34	7
Cerebrospinal Meningitis	20	17
Typhus Fever	.....	.....
Yellow Fever	.....	.....
Cholera	.....	.....
Totals	2,591	299

The Cure of Leprosy.—Isadore Dyer believes that leprosy is curable. He speaks of the two forms of the disease, that of nerve type and that of skin leprosy. These two forms start alike but they vary as the symptoms develop. The writer declares that the treatment of leprosy must be based on the individual case. The results of his work with various remedies in Louisiana have been based on the physiological state of the patient. He has met with no case of leprosy in early or not advanced types that has failed to respond to treatment. In those cases in which treatment has been instituted early enough a certain number have recovered. In ten cases which he describes the possibility of cure is demonstrated. Out of the remedies which he has employed the only ones giving results are; strychnine antivenomous serum, chaulmoogra oil, and chlorate of potassium. The writer has experimented considerably with chaulmoogra oil and he has found that this oil when in as crude a state as possible and still remaining liquid, given in maximum doses, more nearly approximates a specific for leprosy than any other treatment so far suggested. The writer then emphasizes certain points which have impressed him in the treatment of these patients: Full diet, restricting only indigestible foods, is indicated. The disease seems in no wise to be affected by fish or any other particular article of diet. Baths are essential in the treatment. Hot baths, twice a day, with or without soda, are effective. The patient needs tonics, and febrifuges, and should be watched for intercurrent or complicating diseases, such as malarial infection, pleurisy, pneumonia, grippe, and the like. Strychnine is a *sine qua non* in the treatment of leprosy. The sort and size of dose may be regulated by the patient himself. Chaulmoogra oil is better endured before meals than after. The easiest way to take it is in capsules, in hot milk, or in milk of magnesia. The dosage should first be small—three drops—and increased every second or third day up to one hundred and twenty or one hundred and fifty drops at a dose. The oil may be given in pill form,—combined with extract of nux vomica, or with tragacanth and common soap. Persistence in treatment is necessary, and the patient must be individualized. When all evidences of the disease have disappeared the physician should insist upon continuance of treatment. Although this may not be *Journal of Medicine.*

Cancer of the Uterus.—E. de Arcangelis believes that cancer of the uterus is surgically curable, but the intervention must be early enough to enable the surgeon to destroy it before certain barriers have been passed by the disease, and while it is a purely local process and not a generalized disease. The diagnosis must be an early one, as when marked symptoms have shown themselves it is too late to hope for cure. One great difficulty in getting an early diagnosis is the habit among women of applying to a midwife, instead of a physician, for advice in any uterine trouble. Another is that the early symptoms of uterine cancer are so slight that they do not alarm the patient and cause her to seek advice. The people should be educated up to a knowledge of the fatal nature of the disease and its insidious approach, and to the value of early operation. Age near the climacteric and low social position are factors that cause suspicion of the disease. Any irregular loss of blood on slight occasions, as from coitus, or the use of a douche, should cause an examination; so should every leucorrheic discharge at the climacteric. Bimanual examination and the use of the speculum aid materially in the diagnosis, and the excision of a bit of any nodule, or the examination of scrapings from the inside of the uterus, is of the utmost importance.—*Archivio di Ostetricia e Ginecologia,* November, 1905.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ended February 10, 1906.

SMALLPOX—UNITED STATES

		CASES.	DEATHS.
California, San Francisco	Jan. 20–27	8	..
Florida, Barberville	Jan. 27–Feb. 3	4	..
Lakeland	Jan. 27–Feb. 3	3	..
St. Petersburg	Jan. 27–Feb. 3	3	..
Seffnor	Jan. 27–Feb. 3	1	..
Georgia, Augusta	Jan. 22–29	1	..
Kansas, In 23 Counties	Dec. 1–31	145	..
Kentucky, Covington	Jan. 27–Feb. 3	1	..
Louisiana, New Orleans	Jan. 27–Feb. 3	9	..
Michigan, Ann Arbor	Jan. 27–Feb. 3	1	..
Detroit	Jan. 27–Feb. 3	1	..
Missouri, St. Louis	Jan. 27–Feb. 3	1	..
Nebraska, South Omaha	Jan. 27–Feb. 3	1	..
Ohio, Cincinnati	Jan. 26–Feb. 2	5	..
Pennsylvania, Altoona	Jan. 27–Feb. 3	1	Imported.
Lancaster	Dec. 30–Jan. 6	1	..
Utah, In 8 Counties	Dec. 1–31	111	..
Virginia, Norfolk	Feb. 2	10	At Crane Island Hospital, 138 cases
Wisconsin, Appleton	Jan. 27–Feb. 3	7	..

SMALLPOX—FOREIGN

Africa, Cape Town	Dec. 9–16	1	..
Argentina, Buenos Ayres	Nov. 1–30	..	41
Brazil, Pernambuco	Dec. 1–15	..	42
Rio de Janeiro	Dec. 24–Jan. 7	3	3
Canada New Brunswick, Kings County	Jan. 22	..	Present.
Queens County	Jan. 27	..	"
Sunbury County	Jan. 29	..	"
Toronto	Jan. 13–27	3	..
Chile, Antofagasta	Jan. 4	26	12
Iquique	Dec. 24–31	20	6
China, Hongkong	Dec. 16–29	3	3
Shanghai	Dec. 27	..	Present.
Ecuador, Guayaquil	Dec. 31–Jan. 14	..	9
Great Britain, Bristol	Jan. 13–20	1	1
Liverpool	Jan. 13–20	2	Imported.
India, Bombay	Jan. 2–9	..	6
Calcutta	Dec. 16–30	..	55
Madras	Dec. 16–Jan. 5	..	36
Rangoon	Dec. 16–30	..	17
Italy, General	Jan. 11–18	10	..
Mexico, Tuxpam	Jan. 23–30	..	3
		55 cases and 12 deaths in suburbs, to date.	
Russia, Moscow	Dec. 31–Jan. 6	10	1
Odessa	Jan. 6–13	11	4
Spain, Barcelona	Jan. 10–20	..	6

YELLOW FEVER

Brazil, Rio de Janeiro	Dec. 24–Jan. 7	6	2
Cuba, Habana	Feb. 2	1	..
Matanzas Province	Feb. 5	1	1
Ecuador, Guayaquil	Dec. 31–Jan. 14	..	13
Mexico, Vera Cruz	Jan. 13–20	2	1

CHOLERA—INSULAR.

Philippine Islands, Manila	Dec. 9–23	3	3
Bulacan Province	Jan. 4	..	Present.

CHOLERA—FOREIGN.

India, Calcutta	Dec. 16–30	..	129
Madras	Dec. 16–Jan. 5	..	13
Rangoon	Dec. 23–30	..	16

PLAGUE—INSULAR.

Philippine Islands, Manila	Dec. 16–23	1	1

PLAGUE—FOREIGN.

Brazil, Rio de Janeiro	Dec. 23–Jan. 7	18	4
Chile, Antofagasta	Dec. 20–27	3	..
China, Hongkong	Dec. 16–23	3	3
India, Bombay	Jan. 2–9	..	17
Calcutta	Dec. 16–30	..	33
Madras	Dec. 16–Jan. 5	..	6
Rangoon	Dec. 16–30	..	30
Japan, Formosa	Nov. 24–Dec. 31	15	14
Peru, Callao	Dec. 21–Jan. 11	1	1
Chiclayo	Jan. 6	..	Present.
Lima	Dec. 21–Jan. 11	10	5
Salaverry	Jan. 6	..	Present
San Pedro	Dec. 21–Jan. 11	2	1
Trujillo	Dec. 21–Jan. 11	17	10
Nueva	Dec. 21–Jan. 11	17	1

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 8.
Whole No. 1842.

New York, February 24, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

SOME PROBLEMS IN THE TREATMENT OF PNEUMONIA.*

By EGBERT LE FEVRE, M.D.,

NEW YORK.

In considering the problems involved in the treatment of acute croupous pneumonia, the physician's individual conception of the nature of the disease, the cause of the different clinical phenomena, and how these causal factors are to be themselves controlled, or their effects on the different structures of the body to be antidoted or mitigated, will dominate his treatment. If he has a well-defined belief and the courage of his convictions, his plan of treatment will be more or less definite. If he has no definite idea of what is to be accomplished by his treatment, he will try any and every plan proposed; he is always striving to find in the text-books or monographs some hard-and-fast scheme, and he readily accepts the one which is presented most dogmatically, only to discard it when a more positive writer presents a new one. There is at the present time no orthodox plan for treating pneumonia. We have never known as much as we do at the present time of the cause of the disease, its pathological course, its diagnosis, the danger signals—yet we bemoan the fact that, as in days gone by, its mortality is the opprobrium of scientific and clinical medicine, although pharmacology and bacteriology have given us so many weapons to combat the other acute diseases. Pneumonia will always claim a certain percentage of victims; some will get well without treatment, or in spite of treatment used; but there is a considerable number in which recovery will depend upon the treatment.

In judging of the value of any plan of treatment, it must be remembered that pneumonia varies according to severity and type in different years, at different times of the year, and in different localities; that those who are affected are individuals differing widely in mode of living, constitution, and natural powers of resistance; that a plan of treatment suitable in one epidemic, or one locality, or for one class of people, is not always applicable, but must be modified to meet the individual case. The physician must decide on the plan of treatment, what remedies are to be used, and for how long. It all depends upon his medical judgment. The surgeon can lay down the principles and give all the details of a surgical operation, but in the treatment of such a complex disease as pneumonia this is impossible. There is so much difference of opinion on essential points, so much confusion as to the means to be employed, and such conflicting statements as to the value of certain special plans, that a paper on treatment is a discouraging task.

I feel almost like apologizing for introducing the subject again, especially as I have no antidote, or sure cure, to present. I can merely give you my viewpoint of some of the problems involved in the treatment. As long as pneumonia was considered merely an inflammation of the lungs, the principles governing its treatment were comparatively simple. They were those that were applicable to all inflammatory conditions. The fever was the index of the severity of the disease and one of its chief dangers, and every effort was made to control it. It is needless to recount the means used. Many of them still persist in the treatment to this day, and, although the original reason for their use was long ago shown to be erroneous, still clinical experience deems them to be of value. As long as attention was centered on the pathological changes occurring in the lung in the course of pneumonia, the restriction of respiratory surface and the mechanical obstruction to the pulmonary circulation caused by the consolidated lung were considered the chief determining factors in causing respiratory and cardiac failure, and active treatment, both external and internal, was used to arrest or limit the morbid process, to check the congestions and incipient exudates, to diminish the coagulability of the blood, and, when consolidation had taken place, to hasten the absorption of the fibrinous exudate, and so overcome the obstruction. Although at the present time we know that the changes in the lung are but incidents of the disease, and that the mechanical obstruction caused by the consolidated lung is only a contributing factor in the production of respiratory and cardiac failure, certain measures that were found beneficial when pneumonia was considered a local disease still remain suitable treatment for the serious complications that occur during the cause of the disease, and it is necessary that we study anew their mode of action and how they do good. At the present time pneumonia is considered an acute infectious disease, with a localized inflammation of the lung of a characteristic nature, due to the presence of the pneumococcus. The most difficult problem in each individual case is the determination to what extent the clinical phenomena of the disease are dependent on the toxemia on the one hand, and the pathological condition of the lung on the other.

How, in the light of our present knowledge, can we explain the sequence of events in mild, severe, and fatal cases? In mild cases the sudden onset, the rapidly rising temperature, and, before any recognizable change in the lung occurs, the increased respiratory rate, the greater depth of respiration, the bringing into use the accessory muscles of respiration, the dilation of the nostrils with inspiration, the almost diagnostic expiratory grunt, are pathognomonic. The circulatory phenomena are almost as marked. The cardiac action is forcible; the first sound booming; the pulse full and bounding; the systolic blood pressure high; the diastolic also increased. The patient is restless, even when there is no pain. There is sleeplessness, delirium, and in children convulsions. In mild cases and in strong, robust individuals these "sthenic" symptoms may increase in degree throughout the entire attack, until they suddenly cease with crisis.

*Read before the Medical Society of the County of New York January 22, 1905.

In severe cases the "sthenic" symptoms continue for a few days only. On the third, fourth, or fifth day according to the type, the respirations become more rapid, but shallower, cyanosis is present, and there develop gradually or suddenly all the symptoms of respiratory insufficiency. Cardiac action becomes more rapid, but less forcible, the pulmonic second sound is accentuated, the pulse loses its bounding character, the tension falls, and the pulse later becomes dicrotic and irregular. The systolic blood pressure falls, but earlier and more marked is the decrease in diastolic pressure. The entire venous system shows engorgement, and there are signs of overfilling of the right heart. The patient is apathetic, the face cyanotic, and the entire body covered with a cold, clammy perspiration. When this stage is reached, if crisis occurs, the temperature falls, symptoms of impending respiratory and cardiovascular failure disappear, cyanosis clears up, and the danger is passed.

In other cases, before the time of crisis comes, the patient dies of pulmonary edema, respiratory insufficiency, exhaustion of the respiratory muscles, or cardiac failure, and at autopsy the cavities of the right heart are found dilated and filled with clots, which may be partly decolorized and extending into the pulmonary arteries. The left ventricle is often found firmly contracted and empty, less frequently dilated and filled with recent clot.

How far are the dangerous symptoms due to curtailment of respiratory surface and mechanical obstruction to the circulation? In severe cases with recovery the symptoms of respiratory insufficiency and impending circulatory failure rapidly disappear with the crisis, although there is no change in the extent of lung involved, the degree of consolidation, or obstruction to the pulmonary circulation. In other diseases of the lung and pleura that diminish to a greater degree the respiratory surface or produce more marked obstruction to the pulmonary circulation, when the patient is quiet there is not present the rapid labored respiration or the effect on the pulmonary circulation and right heart, even though there be high temperature. The local lesion in the lung is therefore not the essential cause of the symptoms, although it contributes to the seriousness of the case and adds its own peculiar danger.

The toxemia of the pneumococcus infection must be considered the chief factor in causing the symptoms of the disease. Theoretically, this is conceded by nearly everybody, but, therapeutically, it is ignored in practice. Professor Jurgensen says: "If pneumonia is an infectious disease, it must be treated according to the same fundamental principles which experience has proven valuable in other infections." As a therapeutic maxim, the statement of Professor Jurgensen is comprehensive, but to treat the disease intelligently, it is necessary that we know what is the nature of the action of the toxemia on the different organs of the body. Is it a stimulant, an irritant, or a depressant? Does it act on one organ or system of organs in one manner and on others in an opposite? Are its early and late effects of a different nature, or are the late effects the result of the early ones? Upon our opinion will depend the general management and the choice of remedies to control the various symptoms and complications that arise at different periods of the disease.

I believe the primary and essential action of the toxemia of the pneumococcus infection is that of stimulation. Its effect upon the general nervous system is shown by the restlessness and sleeplessness, and in children by convulsions. The respiratory symptoms that occur with the onset of the disease, the rapid, deep breathing, the using of the accessory muscles in both inspiration and expiration, the fuller expansion of the thorax, the intensified respiratory murmur over the unaffected portion of the lung, indicate that the entire respiratory mechanism is being stimulated. The respiratory phenomena cannot be due to fever alone, for they do not correspond to the degree of temperature, and in other febrile diseases they are absent, or present in a much less degree. They cannot be attributed to the pain alone, because they occur even when pain is absent; nor dependent upon restriction of respiratory space, for they occur before there is much restriction and disappear with the crisis, although the same amount of pulmonary involvement exists as when the respirations were so much disturbed. The fever, pain and pulmonary consolidation only add their quota to the respiratory symptoms, although later they may be determining or contributing factors in producing respiratory failures. The cardiovascular system shows like signs of stimulation. The rapid and overforcible action of the heart, the full, bounding pulse, the high systolic blood pressure, all show that the functional activity of the heart is increased.

The above respiratory and circulatory phenomena present during the early period of the disease may continue throughout, increasing in intensity as far as the symptoms of stimulation are concerned, and never showing any signs of respiratory or circulatory failure; but in most cases, sooner or later, according to the severity of the disease, the age, habits, previous physical condition or constitution of the patient, there appear gradually or suddenly the signs of either general weakness or insufficiency of some organs, or system of organs, most frequently respiratory, or circulatory, or both. The respirations become more rapid, but shallower. They lose their full, deep character, the respiratory muscles contract spasmodically but with less effect, the amount of tidal air is markedly reduced, there is imperfect ventilation of the alveoli of the unaffected portion of the lung, and cyanosis develops. The cardiovascular changes are, increased rapidity of the heart (120 or more), the pulse becomes short, dicrotic, and of low tension; there is evidence of imperfect filling of the arteries and accumulation of the blood on the venous side, with overfilling of the right heart, and engorgement of the pulmonary circulation. To what are we to ascribe these changes? Is the nature of the action of the toxemia changed? Is there now a depressant or paralyzing action on certain structures, which action was masked by early stimulation and the effect of fever, pain, and pulmonary involvement? We know that in infectious diseases, according to the degree of the toxemia and length of time it has been active, there are parenchymatous changes in all organs, and especially in the heart muscle. In fatal cases of pneumonia this is often present. Yet in a considerable percentage of cases it is not sufficient to account for the degree of cardiac insufficiency noted during the latter period of the disease.

I believe the stimulation of the early period of the disease is accountable for the later failure—that it is a true exhaustion that follows the excessive work that the respiratory and circulatory system has had to do. We have its analogy in the exhaustion that follows toxic drug stimulation in the pharmacological laboratory. I never see a case of pneumonia but I wonder whether he can stand the pace, for he is in an endurance race against time, the time of the crisis. If the pace has been rapid from the start; if he is handicapped by age; if his resisting powers have been impaired by work, worry, bad surroundings, or improper or insufficient food; if his

nervous system has been rendered unstable by alcoholic or other excesses; if he is suffering from structural disease, the chances are against him. Proper treatment alone is able to aid him, and it will do the most good the earlier in the disease it is given.

If the pneumotoxin has the action I have described, then there are definite indications for treatment at every stage of the disease. From the very onset our efforts should be directed to controlling the toxemia and its effects: (1) By limiting the production of the toxin in the lung and elsewhere; (2) by antidoting it after its absorption into the blood; (3) by diminishing its amount through free elimination, and (4) by neutralizing or combating its effect on the organism.

As the pneumotoxin is chiefly produced in the affected area of the lung, numerous treatments have been proposed to limit the extent of the pulmonary involvement. To control the pulmonary congestion abstraction of blood by venesection, leeching or wet cups, withdrawal of blood from the lung to the surface of the body by dilatation of the superficial blood vessels through counterirritation, hot applications, etc., or the action on the inflamed area, by the ice bag, cold coil, or cold pack, have been advised. Each method has its advocates, who believe that their plan is efficient, or even curative. All these means have a use, and, in proper cases, do give relief to the patient. They often seem to influence the circulation of the unaffected portion of the lung, and possibly in this manner prevent more widespread involvement; but beyond this effect I have never been able to see that they affected the inflamed area itself, or hastened its resolution.

To act directly on the pneumococcus in the lung, either by destroying it, diminishing its vitality, or rendering it less virulent, or by antidoting the pneumotoxin, creosote for its compounds, both by inhalation and internally, sodium salicylate, carbolic acid, salol, quinine, and other members of the antiseptic group have been advocated. Specific action has been claimed, and histories and statistics have been published to prove their value. The advocacy of these remedies by trustworthy observers, in whose judgment we all have confidence, should cause us not to ignore their possible value. At one time or another I have given them all a thorough trial. I have never seen any specific action, but in special cases, given at the right time, I am convinced that they often exert a favorable influence upon the disease. Time and again I have seen irreparable harm done by their injudicious administration or too long continuance. If they are to be of service, or to be administered with safety, it is during the early stage of the disease. When the symptoms of cardiac and respiratory exhaustion are present their use is contraindicated. The time has then gone by when they can be given with safety. Any possible effect they can have on the pneumococcus, or the pneumotoxin, is more than counterbalanced by their depressing action on the general nervous system and other organs. Quinine is an exception to the rule. Given in moderate doses, even late in the disease, it does not produce any depressing action. But I have never seen such definite good effects from it that I consider it of use. In judging of the value of these drugs in controlling the disease, the effect on the temperature, or the fact that the disease more often terminates by lysis than by crisis must not be taken as a guide. Given in sufficient doses, they will reduce the temperature; but unless, with the fall of temperature, there is a corresponding improvement in the nervous, cardiac, and respiratory symptoms, they are not benefiting the patient. Sthenic cases bear them better than the aged, the debilitated, and the alcoholic.

With the already known fact that pneumonia was a self-limiting disease, the discovery that the pneumococcus was the infectious agent and encouraged by the success that attends the treatment of other infectious diseases, especially diphtheria and tetanus, with antitoxins we were in high hopes that an antitoxin would be produced that would be as efficient in this disease. Up to the present time no such serum has been produced. All the sera thus far introduced have not been antitoxic or antifectious enough to justify their use, although some writers claim that they have seen good effects.

As at the present time we have no proven means for preventing or controlling the production and absorption of the pneumotoxin or antidoting its action after it had been absorbed, our chief effort must be directed towards the elimination of the toxin as rapidly as possible and combating its effect on the different organs. We have no definite knowledge of the avenues by which the toxins of pneumonia are eliminated, nor the form in which they leave the body. We are therefore compelled to use the means that have been found most efficient in other acute and chronic toxemias; namely, catharsis, diaphoresis, and diuresis. All these means should be judiciously used from the very beginning. They should not exhaust the patient. The using of calomel and a saline cathartic at the first visit is the orthodox method of procedure, but after this initial dose too little attention is given to the eliminative power of the intestines. As long as the bowels act once a day, it is deemed sufficient. Unless there is some counterindication, I use saline cathartics freely during the early days of the disease. Sweating should be produced by external means if the toxemia is urgent, and the same means employed as in the treatment of acute uremia; but as the hot packs, or hot-air baths, are somewhat depressing, active diaphoresis is not indicated, unless the toxemia is very profound, and it is impossible to get sufficient action of the kidneys. Pilocarpin should not be used, as it is extremely dangerous in pneumonia. On the other hand, the free use of liquor ammoni acetatis, citrate of potassium, and hot drinks, especially hot water, are useful.

The chief reliance is on elimination by the kidneys. For this purpose water, either plain or aerated, should be given plentifully. In nearly every case of pneumonia the urine shows some albumen, indicating that there is kidney irritation—probably due to the action of the toxins—and dilution of the urine is called for. Usually the urine is decreased, high colored, and concentrated. The rapid, deep breathing and the free perspiration that are present cause a larger amount of water to be eliminated by other channels, and, unless an extra quantity of water is given, the urine decreases. On account of the presence of nausea and vomiting in some cases, and in others the tendency of the stomach to retain the fluids given, a free administration of water by mouth is prevented. Under such circumstances there should be given, three or four times a day, enemas of normal saline solution (drink enemas). Water is very rapidly absorbed from the bowels, and is followed by free diuresis. In the early period the stimulating diuretics should not be given. The alkaline mixtures, as the A. B. C. diuretic, citrate of potassium, cream of tartar lemonade (which is a very agreeable and refreshing drink), liquor ammoniæ aetatis (half ounce doses every two, three, or four hours) are the most serviceable. Drinking water as hot as can be taken is well borne by many cases in which nausea and vomiting are present.

Many cases suffer from lack of water, because of the fear that if water is given the patient will not be able to take sufficient nourishment. It is better to give the needed water, as most patients are overfed. Anyone who has personally gone through an attack of pneumonia and has had milk, broths, etc., given *ad nauseam*, when what he has craved most was a good drink of water, will appreciate the hardship. Later in the disease, when there is circulatory failure, the use of diuretics of the theobromine group may be used to meet indications.

In those cases in which the patient seems to be overstimulated by the toxemia, when the cardiac action is excessive, the pulse very full and of high tension, or where the kidneys are affected and the urine highly colored, venesection is indicated, the amount of blood withdrawn being governed by the effect. Enough should be taken to lower the tension of the pulse and quiet the heart. If there is fear of reducing the blood mass too much, normal saline may be introduced into the veins, or given by hypodermoclysis. There are two periods when venesection is indicated: early in the disease for the toxemia, and later, when its purpose is to reduce venous stasis.

It has been claimed that oxygen, when given systematically throughout the disease, has the power of diminishing the toxemia. We have already heard tonight of the value of fresh air. Formerly, through the mistaken idea that a pneumonia patient should be kept as warm as possible, all air was excluded from the room. The treatment of other infectious diseases by the fresh-air method has overcome popular prejudice. I fear, however, we are in danger of bringing a very valuable plan of treatment into disrepute by overdoing the matter in pneumonia. Fresh air is needed, but low temperature is not beneficial. I do not think the temperature of the sick room should fall below 60 degrees F. I generally try to keep it about 65 degrees F. Experience has shown that, whenever tuberculous patients who are taking the open-air treatment contract pneumonia, they do best when protected against low temperature. Cold is not an essential element of the open-air treatment.

"As we cannot cure our patient, we must endeavor to keep him alive until he cures himself." To do this it is necessary to combat the effects of toxemia on different organs of the body. The treatment will, of necessity, be symptomatic, but it is none the less rational. All agree that the powers of the patient should be conserved, and, when the powers are failing, should be assisted. But there is great difference of opinion as to how this can best be done. Believing that the grave conditions that occur in the late days of the disease—the respiratory insufficiency and cardiac failure—are, in the major part, due to the exhaustion of these systems due to the excessive functional activity caused by the stimulation of the toxemia, I consider that at the very beginning we should try to abate this overwork. Granting that the symptoms are those of stimulation, what should be our guide for the administration of medicine to control it? Does it affect chiefly the central nervous system, or does it also have some action over the neuromuscular mechanism of the heart and lungs? It is impossible to answer many of these questions definitely, or to fortify our conclusions with experimental data. I believe that the action of the pneumotoxin is a widespread one and shows, just as other poisons do, an individual variation in its effects on the nervous system and organs. Generally the ushering-in symptoms give indication as to what portion is most susceptible to the toxemia. In the majority of cases the chill, restlessness, characteristic insomnia, cardiac and respiratory symptoms show that the nervous system, and especially the medullary centers, are acted upon. There is a great difference of opinion as to whether or not we should actively combat the above symptoms. Personally, I believe that they should be controlled, using such means as are indicated in individual cases. Rest in every sense of the word is necessary in all cases. Good nursing and proper surroundings are conducive to this. To the head, cold compresses or ice bags, and over the chest cold compresses, as recommended by Dr. Baruch, have a sedative action on the nervous system, and act favorably upon the heart and respiratory muscles as well. I believe most of the good effects that have been ascribed to the ice bag in controlling pneumonia are due to the action of cold on the heart rate. There are cases in which it is necessary to use the bath treatment as fearlessly as in typhoid fever. Fortunately, these cases are rare. The indications are not so much the high temperature as the condition of the nervous system, where the toxemia seems to be overpowering it. In this condition the high temperature is a part, but not the cause of the symptoms.

When quiet, good nursing, eliminative and simple hydropathic measures fail to control the restlessness, insomnia, delirium, and other nervous symptoms; when there is pain and harassing cough, should active treatment be used? I believe that sleep and freedom from pain should be procured as early as possible, and the patient kept quiet and comfortable. When there is pain, opium or one of its alkaloids generally acts best. The form to be used will depend on the case. Morphia, hypodermically, is best suited for the initial dose. Frequently the statement is made that morphia, while relieving the pain, has made the patient more nervous and has accelerated the heart. The practice of combining atropia with morphia is, in the majority of instances, accountable for this. In most cases in which morphine is given for relief of pain, the action on the medullary centers is not desired, and so atropine is given to antagonize it. In pneumonia this antagonistic action is not wanted. The respiratory center and heart are, in pneumonia, especially susceptible to the action of atropine; it is therefore contraindicated in the early stages of the disease. There are individuals whom opium and morphine render restless and semidelirious whenever given; if this idiosyncrasy is known opium should not be used. When opium does not act well, or when pain is not present, the bromides, or chloral, either singly or in combination, or the synthetic hypnotics, may be used to induce sleep. In the early days of the disease I have never seen these drugs produce any bad effects. When rest and sleep are obtained at the beginning, much less medication is needed later to quiet the patient. With the control of the nervous symptoms there is generally improvement in the respiration; it is less rapid. If full expansion of the thorax has been prevented by pain, the breathing becomes easier, cyanosis disappears, providing the medicine has not been pushed too far. It is especially important to relieve pain, when it prevents the patient from breathing easily, except when in one position. When there is no pain, but the patient is breathing very rapidly, although there is no evidence of imperfect oxygenization, heroin is useful. In these cases the rapid respiration is apparently due to increased irritability of the respiratory center.

In the alcoholic, and certain nonalcoholic patients the restlessness and insomnia can only be controlled by the free use of alcohol. Its action in these cases seems to be chiefly sedative.

It is always a debatable question whether any car-

diac sedative should be given, when at the very onset there is a rapid overacting heart, bounding pulse, and high systolic blood pressure. The ice bag, cold coil, and cold pack give some relief, but in many of the cases do not control sufficiently. I have watched the course of cases under the care of physicians who use the old "antiphlogistic" plan of two decades ago, who at the onset of the disease give aconite, veratrum viride, and even tartar emetic, and have been surprised to see the controlling effect on the heart. Their plan is to give the sedative during the first eighteen or twenty-four hours, in sufficient doses to control the heart, and then in smaller doses at longer intervals for two, three, or four days, watching carefully the pulse, and decreasing or stopping the drug as soon as the tension falls below a certain point or there is any suspicion of dicrotism. When given in this manner, I have seen no bad effects or any late symptoms that could be ascribed to the drug. I have never had the courage to use either veratrum viride or tartar emetic. The older practitioners have gained a knowledge of the action of these drugs, which comes only with longer acquaintance. I do use aconite in those cases where the cardiac rate and power are out of proportion to the other symptoms. I rarely continue it beyond the first eighteen or twenty-four hours. The usual dose is five to ten minims (2-3 minims Old Pharmacopeia) every two or three hours. I believe aconite is much safer to use than we have lately been led to believe.

Patients with pneumonia die most frequently from cardiac failure, respiratory insufficiency, and pulmonary edema. All three are generally present in the terminal stage. In pneumonia we must be on the watch for the first symptoms of weakness, and success in treatment will largely depend on our ability to prognosticate in each case at what point the failure is likely to occur, and on our power to combat or control it at the start before exhaustion at one point throws an added burden elsewhere and causes a general failure, when all treatment is useless. Usually the first evidence is shown by the cardiovascular system. The heart becomes more rapid, the pulse small, short and dicrotic, the systolic blood pressure falls, there is imperfect filling of the arterial system and overfilling of the venous with dilatation of the right heart and engorgement of the pulmonary circulation. The remedies used to combat these symptoms will depend on our conception of the causes of the failure. That so many diametrically opposed plans have been advocated shows that there is a great difference of opinion. The primary failure may be caused by changes in the heart muscle, or by changes in the vasomotor control over the blood vessels, leading to vascular collapse. It has long been known that the toxin of pneumonia does not cause as marked weakness of the left ventricle as of the right: that, in addition to the greater parenchymatous degeneration of the right heart we have the added burden of the interference with the pulmonary circulation by the consolidated lung. This mechanical obstruction has been generally considered the exciting and chief cause of cardiac failure.

Romberg, in considering the effects on the circulation of pneumococcus infection, says: "We must consider with the heart weakness the weakness of the vasomotors; with the cardiac paralysis that of the vasomotor also." I am convinced that to the loss of vasomotor control must be ascribed the chief danger in pneumonia. I think this gives us a guide for treatment, and that it harmonizes many discordant opinions, concerning the value of certain drugs as cardiovascular stimulants. When there is loss of resistance in the arteries and arterioles producing marked disturbance of the equilibrium of the circulation, although the left ventricle is relatively strong, the pulse becomes more rapid, small, and dicrotic. The blood passes rapidly to the venous side, causing an incomplete filling of the arteries, while the veins become overfilled. The increased pressure in the veins, slight though it be, and the rapid respirations tend to cause the right auricle to be distended. The weakened right ventricle cannot empty itself against the increased pressure present in the pulmonary circulation, and there develops right-side cardiac dilatation and insufficiency with tendency to cardiac thrombosis, and later pulmonary edema and respiratory failure. To combat this condition nitroglycerin is frequently advised, under the belief that by dilating the arteries the work of the heart is decreased. But peripheral resistance is already too low on the arterial side, and nitroglycerin only makes it lower. We have no data to prove that nitroglycerin has any effect on the pulmonary circulation. Personally, I have only seen bad effects when nitroglycerin and other members of the nitrite group are given in pneumonia during the stage of vasomotor weakness. It is only indicated in pneumonia when there is high arterial tension associated with a rapid-acting heart, as occurs in cases of arteriosclerosis and nephritis. Under such conditions it should be given from the very beginning, as the rapid and forcible acting left ventricle soon exhausts itself pumping against high blood pressure. I cannot too strongly condemn the tendency of resorting to nitroglycerin whenever cardiac failure is suspected.

Against the loss of vasomotor control we have two classes of stimulants. (1) Those acting on the medullary centers—strychnine, caffeine, atropine and cocaine. (2) Those acting directly on the muscular tissue of the arterial system—digitalis, ergot and suprarenal extract. When loss of vasomotor control is associated with evidence of weakness and exhaustion of the other medullary centers, as rapid, shallow respirations and cyanosis, marked apathy of the patient, strychnine should be the stimulant selected. The dose and frequency of administration should be just sufficient to increase the irritability of the centers. If carried beyond this point, the overstimulation only hastens the time of absolute failure. I know of no drug that is able to do so much good and also so much harm in pneumonia, as strychnine, and the deceptive feature about it is that under its free use the patient's condition improves and the secondary result of overstimulation is lost sight of. Strychnine should not be a routine treatment in pneumonia. It should not be given until indications for its use are present. As I said before, a patient suffering from pneumonia is in an endurance race against the time of the crisis. The spur should not be used too early or too freely. He may need all the stimulation possible at the end. Atropine, cocaine, and caffeine are stimulants that can be used for the emergencies that occur at the crisis, although when strychnine has lost its power, we are generally leading a forlorn hope. In cases of respiratory failure both atropine and cocaine have the power to stimulate the respiratory center. I prefer cocaine to atropine, and when it is applied to the inner side of the nostrils, either as a spray or by painting with a camel's hair brush, it has a maximum effect on the respiratory center, as I have frequently seen in treating respiratory failure caused by morphine poisoning. When the vasomotor center does not respond to strychnine, or when the vasomotor loss of control occurs before the weakness of the other centers, and the giving of strychnine would unduly stimulate these centers, the blood vessels may be

acted on by digitalis, ergot, or suprarenal extract. The value of digitalis in treating vascular collapse in pneumonia is a very decided one, and there is no drug that can take its place. It is a well known clinical fact that persons whose normal blood pressure is very low do not bear pneumonia well. The cardiac rate is very rapid, the pulse dicrotic and right side cardiac dilatation occurs early. The judicious use of digitalis in these cases during the early stage, combined with aconite, slows the heart and restores the vascular tone. Later in the disease digitalis alone is indicated. When there are added symptoms of exhaustion of the other medullary centers also, strychnine may be used in combination with digitalis. Digitalis should be given in pneumonia for a definite purpose. The objection to its use has been due to the giving of large doses throughout the disease, on the theory that it has some specific action. The power of ergot to contract the arteries is conceded by all. Whether this effect is due to vasomotor stimulation alone, or to peripheral action also is undecided. The fact that the physiological action of ergot is so definitely restricted to the vasomotor center and the blood vessels causes it to be especially valuable in cases of pneumonia with low arterial tension. In alcoholic cases the long-continued use of alcohol, provided it has not induced arteriosclerosis or nephritis, has produced a depression of the vasomotor center; the capillary circulation is also abnormal. In pneumonia, in these cases, there is a peculiar lividity of the surface that is not due to cyanosis from respiratory insufficiency. The pulse has a very low tension, and the sputum is hemorrhagic and dark, not the ordinary brick dust type. Ergot, by restoring the vascular tone, meets the most urgent symptoms. In many cases of pneumonia in the alcoholic, strychnine, while improving the circulation, increases the delirium and restlessness; it is necessary to give alcohol and narcotics in order to induce quiet and sleep, but these still further disturb the peripheral circulation. The use of ergot counteracts their effects on the circulation. It should be administered hypodermically, using the aseptic preparation.

Suprarenal extract or adrenalin chloride acts on the blood vessels very rapidly and energetically, but its effects last but a short time. Its use is to be reserved for the treatment of sudden vascular collapse, where we are using every effort to keep the patient alive in the hope that the powers of resistance may finally overcome the disease. For no case of pneumonia is to be given up until absolutely dead. The diffusible stimulants—camphor, musk, aromatic spirits of ammonia, Hoffman's anodyne—are all emergency remedies.

Time does not permit me to discuss some of the other problems. The rather active treatment I have outlined, especially for the early stage, will be criticised as contrary to the present treatment—the expectant plan. If the expectant plan is merely a treatment of observation, of standing idly by until the grave conditions of the disease develop, then what I have suggested is contrary to it. If on the other hand, it means that we fully realize the dangers that are to be expected and try to ward them off, then I have only described what is to me a rational expectant treatment. The opportunity to conserve the patient's strength occurs early, and if this be the main object of our treatment, then the early stage of the disease is the stage in which the fearless and intelligent use of active measures will be conducive of the greatest good. And we should not neglect our opportunities, and wait passively until conditions arise which either contraindicate or render useless their employment. For when this stage is once passed, "all the rest is mere work of rescue, and success is a question of vitality."

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THE BIER TREATMENT BY HYPEREMIA.

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It is Biers' merit to have unearthed the old, buried doctrines of the usefulness of hyperemia, and by applying it in a bold as well as rational and scientific manner, to have given it its proper place in surgery. Long before Bier has hyperemia been used as a remedy—in fact, all of us have used hyperemia in the form of poultices, cupping, and so on; but if we have done so, we did it unconsciously of what we were doing, mostly with the intention of drawing the blood from the inflamed area, or, in other words, with the intention of combating the hyperemia, which, according to Bier, is wrong. Bier started out from the thought that a large part of the so-called symptoms of disease (in our case, hyperemia) are not undesirable changes in the functions of the system, which changes must take place in any single case with the regularity of a natural law; in other words, that to be ill means for the organism, to live in a form, which is most adapted to the changed conditions, changed owing to some injurious factor. So has the theory of the usefulness of fever, upheld by physicians of older times than ours, come to be honored again; and a similar view in regard to inflammation was taken by Hunter, as far back as the eighteenth century, who said, speaking of inflammations, "Nature has wisely supplied the body with useful means of self-defence." Much more readily than inflammation has the fact of inherited and acquired immunity against infectious diseases been accepted, and yet that is only another form of self-defence of the organism.

Upon the basis of these deductions and from personal observations at the bedside, Bier comes to the conclusion that hyperemia is nature's own remedy, ever present where regeneration is necessary, or where the system is invaded by some enemy, be that enemy a non-living foreign body or an organized microscopic agent. While there are many ways of producing hyperemia, Bier confines himself to producing the so-called active or arterial hyperemia by hot air apparatus, and the so-called passive hyperemia or blood stasis by his rubber bandage and his cuplike apparatus. A mixed form is produced by his large suction apparatus, in which Bier has imitated, to some extent, the apparatus built by Junod, a Frenchman, published in 1834, and in which a most powerful and extensive form, a mixture of arterial and venous hyperemia, is produced.

Bier attributes to the hyperemia produced in the way mentioned a number of effects upon the system. A very striking one is the relief from pain. Everyone has witnessed the suffering of a person affected with a gonorrheal arthritis. In from one-half to one hour after the proper application of a rubber bandage above the joint, according to Bier, the pain will diminish and finally cease. Another characteristic of the artificial hyperemia is its bactericidal effect on the system. An experiment of Noetzel on the animal proves this fact: In 51 out of 67 cases, he succeeded when injecting fatal doses of anthrax spirilli and streptococci into the extremities of

rabbits, in paralyzing the effect of those microorganisms by stasis applied to the extremity. The explanation is very likely the more intimate contact of the serum with the bacteria. Another effect of hyperemia is resorption. Another is its property of dissolving blood coagula. exudates in joints and tendons, keloids, and so on. Bier compares the procedure with an irrigation system; the outflow is interfered with, and the soil inundated to an overflow. When all the canals are filled, the soil is saturated with water, and the amount of feeding water will then approximately correspond with the amount of overflowing water. The bandage in our picture is the shut-off, which causes the overflow of serum.

Now, as to the treatment proper and its mode of application. It can be stated in general that affections based on bacterial invasion are better treated by passive, the nonbacterial affections by active, hyperemia. But this discrimination is not to be considered absolutely binding. The domain of the passive hyperemia treatment is tuberculosis, especially of the joints. Hot air treatment or active hyperemia is here undoubtedly injurious. Bier was induced to try the hyperemia against tuberculosis by the observations of Farre and Travers in 1815, and Louis in 1826, observations that the coincidence of pulmonary stenosis and phthisis was a frequent occurrence. Those authors interpreted the latter affection as caused by the anemia of the lungs. The observation was confirmed by later observers, and Frerichs was able to state that tuberculosis of the lungs is the final outcome of diseases of the pulmonary artery.

The best, and for the practitioner the most advisable, form of treating tuberculous joints by hyperemia is the rubber bandage, applied rather snugly for one hour daily, the turns of the bandage covering each other halfway. While the hyperemia has to be pronounced, to be of value for such a short time, and while swelling of the limb is desired, edema must not be produced, nor a blue discoloration. Real pain or paresthesia, also the appearance of bright-red spots in the skin, as one often sees them in the twenty-hour stasis in acute septic conditions, also a cold appearance of the limb point to an excessive dosage of the procedure, and demand immediate correction. The arterial pulsation, of course, must never be stopped, or, in other words, one must always be able to feel distinctly the pulse distally to the bandage. It is unnecessary to apply the constricting bandage directly above the joint in question; on the contrary, the place for the bandage ought to be changed frequently, and to produce hyperemia in a fungus of the wrist one may apply the bandage to the upper arm. Exceptionally, Bier has used the bandage in some cases of tuberculosis during two or three hours daily—never longer.

If a cold abscess develops under the treatment, or if a patient with a cold abscess applies for treatment, the abscess is opened under local anesthesia and under aseptic conditions; but only small incisions are necessary, and a suction cup is applied. Then the wound is covered with aseptic gauze and the rubber bandage treatment is begun for an hour, as in nonsuppurative cases. Note here the difference between the Mikulicz method, according to which a cold abscess is never opened by an incision from fear of mix d infection. Such a fear is unnecessary in Biers' treatment of cold abscesses, since the suction and hyperemia produce a constant throwing out of pus and débris and finally serum, and mixed infection does not take place under proper precautions. The cups are kept in antiseptic solution, and the wound's surroundings are cleaned with some antiseptic solution and usually covered with sterilized gauze. One should refrain from all further interference, as, for instance, scraping with a sharp spoon and drainage.

Sequestra sometimes require removal. Often they are, if small, extracted by the cup; often they are absorbed, or reunited to the healthy bone tissue.

Contraindications are, of course, amyloid degeneration, advanced tuberculosis of the lungs, and large cold abscesses of joints, as they occur sometimes in the kneejoint, and faulty position of joints at the time when patients enter the course of treatment.

The hyperemia treatment, in general, dispenses with (and this is an important point) the fixation of the joint in wrist-, elbow-, and shoulder-tuberculosis. The early use of passive and active motions is necessary for good results. Knee-and foot-tuberculosis cases are made to walk in a so-called ambulatory plaster-of-Paris bandage, or in an extension apparatus.

A short review of the cases of tuberculosis treated in Bonn during sixteen months, beginning the 1st of April, 1903, may be interesting:

I. Tuberculosis of the wrist.—Seventeen cases were treated. Four of these had fistulæ and ulcerations from the beginning. In five cases cold abscesses had to be opened. Of these seventeen cases fifteen were cured, all with satisfactory mobility; three with perfect mobility. Several of these patients, when coming in showed severe anatomical destruction in the Roentgen picture, subluxation and complete stiffening of the fingers. The two remaining cases not cured were improved. One of these was a very severe case, in which cold abscesses had to be opened frequently. The average time of treatment was twelve months.

II. Tuberculosis of the elbow.—Eleven cases, five of them with fistulæ. In eight cases, abscesses were incised. Eight cases were cured; two of these were fistulous cases. Entirely normal mobility in none of the cases. In all of the cured cases satisfactory mobility. Three were improved—all fistulous cases. Average treatment nine months.

III. Tuberculosis of the foot, Chopart's joint, Lissfranc's joint, or of several joints.—Thirteen cases were treated, eight of these fistulous. In six instances incision was necessary on account of cold abscesses. Eight cases were cured; four of these were fistulous cases. Three were improved. One case was not influenced. One case later required amputation. In three cases perfect mobility was accomplished; in the other five satisfactory mobility. The average time of treatment was ten months.

IV. Tuberculosis of the shoulder.—One case was treated, with perfect result.

V. Tuberculosis of the knee.—Five cases. Two of these were beginning; one was a fistulous case. Three were cured, two of these with perfect mobility, one with slight ankylosis in good position. Two cases were improved both with pronounced ankylosis.

A number of these cases cited were discharged in such a condition that the most skillful diagnostician was not able to say which one of the joints had been afflicted. Such ideal results have

not been accomplished by the most conservative operation. By the method of extension and fixation heretofore practised in most cases of tuberculous joints we are satisfied to accomplish a recovery with ankylosis. Bier begins with passive motions soon after the treatment has been started.

In a longer series of cases, not selected, but treated as they entered the clinic and dispensary, the wrist showed a cure in 88 per cent.; the elbow in 72 per cent., and the foot in 61.5 per cent.

Upon the basis of his experience, Bier declares his method to be the best conservative means of treatment for joint tuberculosis, because it leads with the least danger, in the most simple and inexpensive way, to results, which no other method can accomplish. Poor results in other hands have been produced by faulty technique.

During the last year, Dr. Klapp, Bier's chief surgeon, has modified the treatment of joint tuberculosis complicated by fistulæ and abscesses; and, although he has not published any statistics on the basis of this new form of treatment, he believes that his results are still better. He has discarded the bandage entirely in these cases, using the cup exclusively for five minutes, allowing a rest of three minutes; again, suction for five minutes, and so on, for forty-five minutes altogether in the beginning of the treatment. This is continued daily until the flabby, pale granulations have been changed into hard, red granulations; then every second or third day, or the fifth day, suction is applied.

My personal experience with Bier's treatment of tuberculous joint diseases is limited to this form of treatment, that is, with suction apparatus. During my stay in Bonn it was my good fortune to see, among others, a middle-aged woman, who was to be discharged after several months' treatment with the small suction apparatus, on account of tuberculosis of the elbow joint. I ascertained that she had had two fistulæ, one focus being located at the lateral condyle of the humerus, the other corresponding to the head of the radius. The result was most astonishing to me and to Dr. Binnie of Kansas City. The function was perfect, and there was no swelling to be seen; in fact, no apparent difference between the two elbow joints. Two small, round, firm scars, brown-discolored, each one corresponding to a former fistula, reminded one of a most obnoxious form of joint and bone affection.

Spina ventosa must be spoken of in a separate paragraph, in as far as the treatment mentioned so far has yielded poor results. Dr. Klapp had encouraging results in this most obstinate form of articular tuberculosis by applying hyperemia to the joint in one of his large suction apparatuses. I did not secure any of the very breakable large apparatuses, but they could be easily made by any mechanic out of a glass irrigator and a rubber cup fastened to the open top, while the nozzle could be attached to a rubber pipe and suction pump.

Now to the treatment of acute inflammations—septic wounds, phlegmons, lymphangitis, etc. It requires the courage of one's convictions to add, by the blood stasis to the swelling, which we are accustomed to combat. But the results in the hands of a surgeon, who understands the technique, are splendid. It is the passive form of hyperemia only which is applied, the hot air having given no results. Whereas in tuberculosis the stasis is carried on for one hour as a rule—never more than two or three hours—the acute inflammations require an application of twenty to twenty-two hours, or where a tender skin does not stand the bandage longer, for at least eight or ten hours. An enormous edema is often the consequence of the procedure. The discoloration of the whole limb is apt to frighten the inexperienced; but, according to Bier, the increased inflammation is a desired phase of the affection, and the fact that, when the septic condition is overcome the swelling subsides in spite o he constricting bandage, is very significant.

During the intermission between two treatments, the limb is elevated, to allow the edema to subside. It is usually impossible and not necessary to do away with the edema entirely, before the new stasis is begun. Abscesses have to be lanced, of course, and two or three hours afterwards the bandage is to be applied—not too near the inflamed area. But here, as in cold abscesses, large operations are saved to the patient. An exception is acute suppuration complicated with severe circulatory disturbances, in which cases extensive incisions are preferred. In cases of deep suppurative tendovaginitis, several small incisions are made in preference to one large incision, which is apt to interfere with the nutrition of the tendon, and allow the tendon to snap out of its sheath. Drainage is never used, the covering of the wound with gauze being sufficient. It is advisable to change the place of constriction, in order to avoid nutritive disturbances under the bandage. For tender skin, the appliance recommended by Henley, an inflated rubber tube, is sometimes preferable.

The weak points of the remedy in acute inflammations are its injury in an overdose and its futility if administered in homeopathic doses. Therefore Bier advises only experienced men to treat deep progressive phlegmonous inflammation or osteomyelitis by his method. Inexperienced men should begin and acquire experience on fresh acute inflammations of any kind, upon subacute cases of not a severe type, and gonorrheal or pyemic arthritis.

The most striking example of the stasis treatment in phlegmon of the arm, I saw in a young man of nineteen years, injured in some factory, who entered the so-called septic ward of the clinic in Bonn in September. After receiving tetanus serum in the preventive doses, stasis was resorted to, the wound being loosely covered. An abscess was opened on the second day; on the third day the temperature became normal, and the whole aspect of the process changed. Out of a deep phlegmonous inflammation had developed a mild form of inflammation, which led to rapid recovery.

Almost like a specific is the effect of stasis by the bandage in gonorrheal arthritis. Even those most severe forms of this affection, in which the tendons are involved, and which, as a rule, lead to a more or less stiff joint, give astonishing results. The early relief of the excruciating pains allows the early motion—one of the strong points of Bier's treatment. Only by a stasis of from twenty to twenty-two hours and a profuse edema of the limb are these remarkable results accomplished. Sometimes the technique in this affection is difficult. The bandage produces pain and has to be taken off temporarily for one hour; but, as a rule, the pain ceases as soon as the edema appears.

Suppurative arthritis of the nongonorrheal nature also gives good results after the aspiration

of pus. Early motions of the joints are necessary and they are well borne, since, as soon as edema is produced, relief comes to the suffering patient.

I have spoken of the treatment of fistulous cases of tuberculous joint disease by suction apparatus. This suction treatment has been applied with most gratifying results in cases of furuncle, carbuncle, bubo, acute abscesses, mastitis, infiltrations, infected fresh and old wounds, insect bites with infection, paronychia, etc.—all together in more than 600 cases. The application is often painful in acute cases, and has to be applied with care, a small amount of suction giving good results. Forty-five minutes, all together, in a day has been found the best average time of treatment. During that time, one applies five minutes' suction and allows three minutes' rest—the same as in cold abscesses. Furuncles are not incised, only the crust of the papule is removed, before the suction is applied. In carbuncles only abscesses require a small incision. Furuncles are cured by this procedure usually in five days; carbuncles, in from ten to fifteen days.

The suction treatment in acute cases of inflammation therefore competes with the stasis treatment by rubber bandage and has two advantages over the latter. It removes the pus, besides producing hyperemia, and is, even in the hands of the inexperienced, free from danger.

In regard to the active hyperemia or hot air treatment, I can be brief. Bier uses it extensively in chronic cases of non-infectious origin, especially in ankylosed joints due to chronic rheumatism or arthritis deformans or chronic gonorrhea. Everybody knows how unsatisfactory the results are in such cases by any treatment known. Bier believes that the active hyperemia or hot air treatment properly applied in such cases is superior to any other mode of treatment.

Very interesting to me was the way in which he treats scoliosis. From thirty to forty children are treated every day in an apparatus which enables the hyperemization of the back of the patients, six at a time, for twenty minutes, which treatment is followed by gymnastic work. The children all declare that they feel limbered up after the hot air treatment, and the final results are far better than those by massage and gymnasium work, as practised, for instance, in Breslau.

Bier treats fractures by active hyperemia. In radius fracture, after good reduction under control of the radiogram, the arm is put in a hot air apparatus from the first day on, and the relief from pain allows the early manipulation of the wrist. Only a mitella is worn, no splints being applied, since the fragments after proper reduction do not part except by force. In fracture of the malleolus, after reduction, an ambulatory plaster-of-Paris cast is applied, which is cut into an anterior and a posterior half on the tenth day. Now dislocation is not to be feared, and active movement of the ankle joint is done by the patient, while his foot is in the hot air apparatus. After each treatment the patient walks in his cast fastened to the leg with a bandage.

Other affections giving good results are edema after fracture, exudates of joints, hemarthrosis, neuralgia, neuritis, varicose veins, etc., etc.

Since October 24 I have tested Bier's treatment of blood stasis in a number of cases. A boy, eleven years old, was taken sick three weeks previously, with what appeared to be follicular tonsillitis and was treated by a physician in the usual way. The patient came to me with a temperature of 101°, enlarged left tonsil, and a swelling about the size of a hen's egg back of the ear, corresponding to the insertion of the sternocleidomastoid. A small pocket of pus in the left tonsil was opened, which gave considerable relief to the patient; but the swelling in the neck remained, and began to enlarge, until a hard infiltration appeared. The temperature was running between 101° and 102° with a pulse of a hundred.

On October 26, at my first call, Bier's neck rubber bandage was applied and kept on for twenty-one hours; the throat was treated and sprayed with a 50-per cent. solution of peroxide of hydrogen, and mouth and throat gargled with a warm saturated solution of boric acid. Within twenty minutes the patient told me that the bandage gave him relief; and after several hours of application he could move his head very much better, whereas before the slightest change of the position seemed painful. On the second day the bandage was applied tighter and an edema appeared on both sides of the face. The swelling in the neck assumed larger proportions and covered the whole neck and the occipital region of the scalp. On the fifth day of treatment, in narcosis, an incision of about one and one-half inches was made outside of the sternocleidomastoid, and carried down to the bone back of the mastoid process. About two teaspoonfuls of pus were evacuated, no scraping was done, no drainage applied; the wound was as usual covered with sterilized gauze. A few hours afterwards a good stasis by the rubber bandage was induced and kept up for twenty hours. After that, nothing but a change of dressings took place, and one week after the little operation the wound was perfectly closed. My impression of the case was that Bier's treatment had been of great assistance to me, in so far as it shortened the duration of the affection and localized this rather serious form of cellulitis. Undoubtedly it saved the patient a larger incision, and the after-treatment was exceedingly humane.

Of the other patients treated I want to mention a little boy, ten years old, who suffered from a very painful attack of nonsuppurative otitis media on the right side. The rubber bandage applied to the neck below the larynx relieved him soon after application; and when the mother, at bedtime, removed it, for fear it might do him harm, the intelligent little chap asked to have the bandage put on again.

A case of tuberculous orchitis is under my treatment at present. I use the cup every second day, and have taught the patient—a man of sixty-two years—to apply the bandage himself for three hours every afternoon. I believe the patient does it correctly, from the description he gives me, and from the way he made the application himself under my control in my office. Since the treatment has to be carried on for several months I am not in a position to-day to tell you anything about the result; but after eight treatments in my office with the suction apparatus the purulent discharge has changed into serum.

33 Allen Street.

Relief of Itching by the Use of Pilocarpine.—Pilocarpine in doses of one-fourth grain is of great value in different forms of pruritus, such as the general pruritus of jaundice, the localized pruritus of urticaria, and the pruritus so common in old people. Give one-fourth grain of pilocarpine by the mouth, best at night.—J. J. Reid.

CHRONIC AND PERIODIC VOMITING.*

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The difficulties attending the diagnosis of the causation of vomiting are readily accounted for by the great extent of the nerve tracts and the connections of the center that controls this complex act. We must conceive of this medullary center as being susceptible of stimulation not only by direct irritation and by sensations from the higher nervous centers and the stomach, but also through any of the afferent nerves of the body. The effect that such afferent impulses will have on the vomiting center is largely conditioned by the peculiar constitution of the individual's higher nervous system; in some individuals any slight pain or unpleasant sight induces nausea or vomiting, while in others such a result is not noticed although the irritation be very severe.

In studying a case of vomiting we are very largely dependent on related phenomena for an explanation of the cause and site of excitation; while the act itself presents differences in severity, repetition, and amount of accompanying nausea, the other facts of life and symptoms may be essential in the diagnosis. While a complete differential diagnosis of the conditions that can cause chronic and periodic vomiting would be impracticable, we would review the conditions that may give rise to these types and discuss whatever characteristics the vomiting may have.

As one of the first steps in the diagnosis of an obscure case of vomiting is the elimination of a gastric cause, a discussion of the few gastric diseases that may cause these forms is of primary importance.

Acute gastritis occasions vomiting that is more or less severe during the first twenty-four hours of the disease, and usually the condition is appreciated from the history of exciting cause, the general picture of the disease, the slight gastric tenderness, the more or less constant nausea, the complete anorexia, and the inability of the stomach to retain anything. Occasionally vomiting of a protracted nature may be caused by an acute gastritis and the condition is confusing if not seen from the inception. These are usually the cases where there has been no treatment or an improper one. Vomiting continues, food is held in the stomach only a very short time; the pain in these conditions is but slight. Such cases may result in starvation and death. The character of the vomitus distinguishes these cases from those in which vomiting results an equally short time after food ingestion.

Chronis gastritis is still considered by some a proper diagnosis when nothing except a slight subacidity or superacidity is found objectively to account for subjective gastric complaints. There is, however, a growing tendency to demand more positive evidence. While many textbooks speak of vomiting as a common symptom of chronic gastritis, Lockwood,[1] from an analysis of a large series of cases, found that vomiting was never present in uncomplicated non-alcoholic gastritis. Personally I am of the opinion that vomiting in a case of chronic catarrh indicates either that the stomach has been overloaded or that an acute catarrh has been instituted, or that the pylorus has become narrowed and muscular insufficiency has resulted. Unless one of these conditions be in evidence, a further search for the cause of the vomiting is indicated.

In ulcer of the stomach chronic vomiting is unquestionably a very common symptom, but the exact frequency is not agreed upon. Howard[2] speaks of vomiting as the commonest symptom, present in 85 per cent. of the cases admitted to the wards of the Johns Hopkins Hospital. Wirsing[5] from an analysis of 320 cases concludes that vomiting is present in 60 per cent. Speaking of chronic ulcers, Mayo says that vomiting is a late symptom due to interference with the passage of food. In the acute ulcers there is a general agreement that vomiting usually occurs at the height of a paroxysm of epigastralgia, one-half to three hours after the ingestion of food. The relation of the vomiting to the pain has seemed to me rather distinctive; there is a gradual development of the pain, and at its height vomiting results with very little nausea. After the vomiting the pain rather quickly subsides and does not recur until more food is ingested. The continuance of the pain after the vomiting indicates the nearness of the ulcer to the pylorus.

With reference to the vomitus it is interesting to note the divergence of the present opinion of clinicians from that formerly held in regard to the frequency of superacidity found in ulcer. Ewald[3] gives the frequency at 45 per cent. and states that over 9 per cent. had subacidity; Wirsing, superacidity, 47 per cent., and subacidity, 2 per cent.; Wagner,[6] superacidity, 42 per cent., and 10 per cent. subacidity; Howard,[2] only 27 per cent. superacidity and 47 per cent. subacidity. There is a rather general agreement that in only about 10 per cent. of the cases of vomiting from ulcer is blood entirely absent from the vomitus at all times.

In hyperchlorhydria without organic basis vomiting is a rare symptom, according to Riegel.[7] Hyperchlorhydria with attacks of vomiting, or chronic vomiting is an indication of ulcerative lesion or a complicating condition of some sort causing vomiting. Certainly enough cases of marked hyperchlorhydria are seen to indicate that the mucosa is not particularly sensitive to increases in the usual degree of free acidity.

In the intermittent form of Reichman's disease, gastrosuccorrhea periodica, vomiting is a most pronounced feature of the condition. This neurosis is characterized by recurring attacks of vomiting that usually come on during the night; there is commonly a rapid development of more or less severe gastric distress and the vomiting of gastric juice in considerable amounts. At first there may be vomiting of food remains, but in a short while more fluid, found to be true gastric juice, of normal or supernormal acidity, is vomited. The condition continues for a few hours to several days. There may be hypersecretion between the attacks or normal secretion and no dyspeptic complaints. There is much variation in the amount of pain in these attacks; one case under observation for the past four years complains of no actual pain during some of the attacks.

Chronic gastrosuccorrhea rarely produces vomiting unless induced by organic lesions. Cases have been under observation by the writer for several years that showed 200 c.c. to 400 c.c. of clear gastric juice from ten to fifteen hours after a meal; while such cases have shown atony there has been no evidence of pyloric obstruction, a test dinner being disposed of in but little more than the normal time. When vomiting is a symptom of a case showing hypersecretion there is sufficient justification for the suspicion that an ulcerative lesion or pyloric obstruction is present.

"Muscular insufficiency" of the first degree, atony of the stomach, does not produce vomiting. Although the stomach takes an abnormal time to perform its muscular function, one meal is passed on before the next is added. In the more severe degree

* Read before the Society of Alumni of Bellevue Hospital.

of insufficiency—dilatation due to mechanical interference with the passage of the contents—the vomiting is one of the chief features and almost pathognomonic in its nature. Such obstructions to the passage of food have a number of causes in both stomach and duodenum and the course and other symptoms will depend on the particular cause. Usually the condition is developed gradually and the peculiar vomiting that it gives rise to may be overlooked. The vomiting may be preceded by actual pain, if the lesion be ulcerative, or by merely an uneasiness of the stomach; generally there is little nausea. The important point in distinction is the copious vomiting, considerably more being vomited than should be left in the stomach. Vomiting of food, ten or more hours after its ingestion, indicates a muscular insufficiency; temporary insufficiency may result from severe emotional disturbances, marked overloading of the organ, or acute inflammation; frequent repetitions of this act indicate a permanent condition, and thorough tests of the ability of the stomach to empty itself should be made.

In carcinoma of the stomach vomiting is said to be an early symptom by some medical writers, but this statement is contradicted by the abdominal surgeons. Riegel states that vomiting is a rare symptom in carcinoma of the stomach unless one of the orifices be interfered with. Occasionally there is a very persistent form of vomiting seen early in carcinoma that is due to a complicating acute gastritis. Carcinomata at the orifices inducing vomiting may undergo degeneration, and the vomiting may then cease.

Stenosis of the cardia, or low lying stricture of the esophagus, whether malignant or benign, occasions regurgitation, and this is usually spoken of as vomiting; when there is dilatation of the esophagus above the stricture there may be an act more closely resembling vomiting, but with little nausea. The vomitus may amount to considerably over a pint and thus be the cause of confusion if the stomach sound is not used.

Gastroptosis of itself very rarely presents the symptoms under discussion; the rare instances are due to some complicating neurosis or to a complicating or induced muscular insufficiency.

Hernia of the linea alba is one of the more rare conditions that may be the cause of vomiting in association with pain at the time of peristaltic activity or especial bodily movements. Unless these small tumors be searched for the condition at times may cause confusion.

From a view of the gastric diseases it is evident that the number causing chronic or periodic vomiting is very small. In any case of vomiting, if acute inflammation, ulcer, periodic hypersecretion, and interference with the orifices can be excluded, the cause of the vomiting must be searched for elsewhere.

In the course of ordinary nervous dyspepsia there may be occasional nausea, and vomiting may at times result, but such an occurrence usually follows some especial inciting cause. In a recent publication Mathieu and Roux,[8] in discussing the under-nourishment in certain dyspeptics and neurasthenics, describe the late afternoon nausea seen in these patients, particularly young women, as a perversion of hunger; if the condition is not recognized and the starvation corrected there may be instituted a true nervous or hysterical vomiting.

While at the menstrual epoch disturbances of the stomach are very common, in certain young and anemic women, and women who flow excessively at this time, there is not infrequently observed a more or less constant nausea and morning retching that is apt to continue for several days after recovery from the physiological process.

Nervous or hysterical vomiting presents characteristics that warrant its separation from other forms of vomiting, although the line of demarcation is indefinite. Usually these cases are seen to be women, the condition being developed at puberty or the climateric because of some severe emotional strain or accident. Behind such exciting causes there is always a certain psychopathic taint. In a typical case of this nature the vomiting occurs either in the night, in the morning before breakfast, or very shortly after meals. The points that Stiller[9] has emphasized in regard to this condition are the slight nausea, the ability of these patients to retain irritating foods at times while the blandest foods are rejected, the failure to grow thin, and the great suggestibility from within and without. Such patients may die of starvation, but instances are rare.

While all vomiting except that due to centric irritation of a direct nature, or induced by sensations from the higher parts of the brain must be considered reflex, it is convenient to limit the term "reflex vomiting" to that due to irritation outside the direct nerve tracts. In these cases there is probably a certain weakness of the nervous system unless the irritated part is close in its nervous connection with the direct nerve tract from stomach to center. For example, when vomiting results from irritation of the gall-bladder, pancreas, or intestines there need be no premise of a nervous weakness exaggerating or failing to inhibit the afferent impulse.

In diseases of the intestine the likelihood of vomiting resulting from irritation decreases rapidly from the pylorus down. According to the statistics collected by Hemmeter[10] about 20 per cent. of the duodenal ulcerations cause vomiting. Ulcerations lower down in the intestines rarely present this symptom unless stenosis is caused or peritonitis is set up. In the acute catarrhal diseases of the intestine vomiting may be a prominent symptom during the toxic stage: after that it is uncommon. In the severe cases of colitis even with ulceration there is rarely vomiting after the first few days, when the toxemia is great.

Chronic stenosis of the duodenum shows itself in a similar way to stenosis of the pylorus. A lesion below the papilla will cause the presence of considerable amounts of bile in the vomitus. Stricture of the lower intestine, even of the lower sigmoid, may cause attacks of vomiting, as seen in one case by the writer. Referring to stenosis of the colon, Hemmeter says that he has never observed a case of simple constipation in which vomiting was a repeated symptom; he is inclined to attach considerable importance to such attacks if they occur in association with constipation and abdominal colics. Boas,[11] discussing the same subject, says that vomiting is an undervalued symptom, recurring as it does with intestinal colic; while not characteristic, it is an extremely rare manifestation in the more common stercoraceous flatulency.

The chronic peritoneal inflammations usually do not cause vomiting unless they produce stenosis of the intestine, deformities of the pylorus, or strongly drag on the stomach during peristalsis. Such a "perigastritis" may be the cause of attacks of gastric pain and vomiting at the height of digestion.

The close relationship between the gall-bladder and the stomach readily explains the commonness of vomiting at the time of a gall-bladder colic. Such attacks are not, as a rule, of long duration, very frequently occur at night, and are associated with marked tenderness of the gall-bladder. In addition

to vomiting occurring at the time of colics, inflammation of the gall-bladder may occasion attacks of pain of moderate severity occasionally accompanied with vomiting.[12] In these cases there is usually a history of gall-bladder disease to suggest the true nature of the condition, and there is the absence of hematemesis and melena.

The pregnant uterus is very possibly the most common cause of morning nausea and retching, yet very frequently overlooked. The vomiting of pregnancy is, no doubt, as Williams[13] has shown, either reflex toxemic or hysterical.

The displacements and inflammatory enlargements of the uterus are very common causes of faintness and nausea in association with uterine symptoms. Prolonged standing may occasion considerable afternoon nausea, and, in the neurasthenic, vomiting may result.

Nausea and other dyspeptic complaints may be due to the irritation developed by disease of the male sexual organs. Such cases are usually observed in the sexual neurasthenics. Conheim[14] reports the case of a middle-aged man, with severe vomiting, who, on examination, was found to have a normal stomach, but a much dilated urinary bladder, the result of a hypertrophied prostate; the cure of the latter conditions stopped the vomiting. Cases of this sort are not uncommon in women during and after pregnancy.

Severe kidney colics are accompanied by vomiting in some instances at the time of the paroxysm of pain; otherwise the surgical lesions do not produce this symptom. The movable kidneys have occasionally been described as causing exceedingly persistent vomiting, the condition being cured by operation;[15] such a result is uncommon, but nausea as a symptom of movable kidneys is quite frequently seen, especially as an occurrence of the late afternoon, owing to prolonged standing on the feet.

Pharyngeal abnormalities not infrequently are responsible for morning nausea not only in alcoholics and smokers, but as well in those not addicted to any such indulgence; such a condition seems to result from the swallowing of mucus or the irritation of the retropharynx. Usually there is a pharyngeal cough, or other evidence of the local condition. Elongation persistent vomiting, and not always are there symptoms of throat irritation. Such a case came to my attention, death being narrowly averted by ablation of the uvula.

Diseases of the lungs and bronchi very commonly cause vomiting when the amount of mucous swallowed is large. In adults of the gouty or plethoric type there may be reflex vomiting from severe congestion of the bronchi; this may occur independently of attacks of coughing.

Cardiac conditions attended with loss of compensation and late cirrhosis of the liver very commonly cause vomiting due to passive congestion: in the latter condition particularly there may be considerable hematemesis, but the morbid lesion is distinguished from ulcer by the comparative absence of pain. Early in cirrhosis the vomiting is attributable to the coincident pharyngitis from alcohol.

Vomiting in association with prolonged attacks of general or unilateral headache are usually described as migrainous attacks, "bilious attacks," or "sick headaches." Certain ophthalmologists would attribute all such attacks to eyestrain. Walton,[16] after a careful study of the headaches in the congenitally blind, concludes that a sufficient number were afflicted with migrainous attacks to preclude the supposition that all such cases are due to eyestrain. While the majority of cases suffering from these attacks are due to eyestrain, there are not a few that follow dietary indiscretions in certain families, in whom no eyestrain can be determined, and also cases in anemic young women that seem to follow several days of constipation, treatment of the latter condition curing the attacks. Vomiting from eyestrain is usually a sequence of severe headache, and generally occurs after the eyes have been over-used—in reading, sewing, or travel in cars.

Vomiting due to reflex from the ear is rarely seen except in sudden attacks, associated with deafness, vertigo, and tinnitus, the syndrome first described by Ménière as characteristic of labyrinthine disease. It is now realized that the same conditions may result from pressure in the middle, or even external, ear. The local treatment of the ear does not commonly succeed in curing these attacks, and it would seem that in many instances there was an underlying constitutional trouble to account for the condition. In several of these cases that have come under the writer's observation there was discovered a secondary gastric atony with subacidity. In one such case the patient would vomit nearly a quart of mucous fluid during the first few hours of an attack. In this case sodium bromide would prevent the attack, if taken on the first suggestion of vertigo. As observed by the writer, these cases vomit as a sequel to very severe nausea, apparently caused by the vertigo; if the vertigo is stopped by the recumbent posture the nausea ceases. Recently a case was seen in which an erythema multiformi appeared to be responsible for the attacks; three years ago a young woman began to suffer from suddenly developed swellings of the face of very pruritic and burning nature. Soon after their first appearance in one of the attacks she began to have the typical Ménière's syndrome. These attacks continued, in spite of treatment, until a few weeks ago, there being an apparent association of the erythema and ear disturbance. Treatment of the gastrointestinal canal has improved the erythema and only moderate deafness is complained of.[17]

A similar case was reported by M. Sugar, but in his case there was a purpuric eruption, the ear symptoms and obstinate vomiting coming and going with the purpuric rash.

The gastric crises seen in tabes dorsalis, and in other spinal cord affections, such as myelitis and syphilis of the cord, multiple sclerosis, and also in Basedow's disease, may be the cause of serious diagnostic errors. In tabes the crises occur in the preataxic stage of the disease and may be the first subjective complaint. Fortunately, there are always some of the objective symptoms to be found. Occasionally the attacks are preceded by nausea, but usually these attacks begin very suddenly, the patient being taken with severe tearing pain in the epigastrium and precordium, and soon hard, painful vomiting; there may be headache and pains in the limbs; usually the abdomen is retracted and constipation obstinate during the attack, which lasts from a few hours to a few days. The attack usually terminates abruptly, only the soreness of the abdominal muscles being left; the patient can usually take food at once.

The vomitus is in no way characteristic; in some cases there may be small amounts of blood; Ewald[18] reports 4 cases of hematemesis in his 89 observed cases. The amount of pain in these crises is somewhat variable; in a case seen by the writer there was no complaint of pain, but only of attacks of vomiting; on questioning, pain was admitted during some of the attacks.

The case cited by Werner[19] shows what serious errors these attacks may cause. For attacks of vomiting and epigastric distress a woman was operated on by the gynecologists, the cervix being cau-

terized; later an abdominal surgeon of note performed a gastroenterostomy for a supposed gastric ulcer; and the attacks still continuing the uterus and appendages were removed. It happened some months later that the attacks ceased and the ataxic symptoms developed.

Closely resembling these spinal-cord crises are the attacks of primary nervous vomiting first described by von Leyden,[20] and since that time discussed by a number of observers. There is the sudden onset of attacks of vomiting with or without epigastric distress, independent of food ingestion; there are the severe nausea, the temporary prostration, the retraction of the abdomen, the obstipation during the attack. Everything taken into the stomach for hours or days is vomited at once. Autopsies in such cases have failed to show the causative lesion. The attacks differ from those of cord lesions in that they tend to recur at approximately the same intervals, or to become less frequent, sometimes to cease entirely.

"Juvenile vomiting" is a condition of mixed causation. The name is given to attacks of vomiting in anemic school children between the ages of 8 and 14. It may be an affection of the hour before school, being due to a nervous dread for some particular reason. Again, it may be an affection of the hours after school, and then very probably be attributable to eyestrain. Conheim[14] says that any one of the three common intestinal worms in the intestinal tract may act as the exciting cause, and he advises a careful search of the stools after a vermifuge has been given in any case of unaccountable vomiting in children.

The affection of children variously denoted as cyclic,[21] periodic,[22] recurrent, or persistent[23] vomiting, has reference to a class of cases described by these names, there being nothing distinctive to account for the attacks. In many ways these attacks resemble the crisis already discussed, the independence of the kind of food, the suddenness of the attacks, the severity and long continuance of the vomiting, the retraction of the abdomen, and the constipation. Edsall, Marfan,[24] and others have emphasized the acetonemic features of the condition. Snow[25] has shown that in some there is a hypersecretion of gastric juice. Rachford[26] points out the association of such attacks with migraine. Osler,[27] in discussing the abdominal symptoms associated with the erythemas, states his belief that certain cases of recurrent vomiting in children are due to one of these erythematous diseases.

In diseases of the central nervous system vomiting may be a very important part of the picture. In acute meningeal disease this may be the most pronounced feature of the invasion and be exceedingly persistent throughout. In chronic meningitis, cerebral abscesses and tumors, dilatations of the ventricles, and hemorrhage vomiting may be very prominent. While in these conditions there is nothing absolutely characteristic, certain features are suggestive such as the suddenness of the attack, the slight nausea, and the severe or violent vomiting, the lack of all relation to the ingestion of food, the independence of emotional states, the semi-consciousness or unconsciousness of the patient during an attack, and the effect of changes of position.

While vomiting may occur in the course of any disease, attacks may be caused by certain constitutional diseases, particularly gout, nephritis, diabetes mellitus, Addison's disease, malaria, anemia, and the erythemas.

Cases of irregular gout are described in which severe vomiting occurs, but such cases are suspicious, especially when associated with abdominal pain. When the individual has had previous attacks of regular gout such a diagnosis might be justified, but in one case seen by the writer such a diagnosis was contradicted later by the appearance of unmistakable gall-bladder troubles.

In nephritis vomiting is a regular symptom when uremia is well developed, but occasionally it may be one of the first manifestations; usually there is morning nausea and retching in these cases, and later the appearance of these complaints through the day.

In diabetes mellitus vomiting occurs only as a late symptom, shortly preceding some such manifestation of acid intoxication as coma.

Vomiting from Addison's disease also occurs late, and then may be seen in association with vertigo, tinnitus and headache, not, however, in the form of attacks such as characterize ear conditions.

Malaria causing periodic or chronic vomiting is rarely observed, except in the very severe forms and the chronic forms with "caked" spleen; usually in these cases there is hematemesis. In the acute cases there is generally severe pain at the time of the vomiting, but the condition is readily diagnosed by examination of the spleen and blood.

In the various anemias vomiting is not an uncommon symptom. Frequently this is a result of undernourishment as discussed above, being an exaggeration of nausea due to hunger. In the more severe grades of the simple anemias and the pernicious forms vomiting may be a pronounced feature. Usually in these cases there is more or less hematemesis, but the vomiting does not bear the intimate relation to food ingestion as happens in peptic ulcer nor is there severe epigastric pain. The possibility of induced ulceration is always to be considered.

In that general class of cases that may be designated by the term "erythematous" diseases, including the angioneurotic edemas, the circumscribed edemas, the puerpuras, the erythemas, and uriticaria, there may be severe abdominal symptoms and persistent vomiting. In one case seen by the writer the rash did not appear until there had been several days of persistent vomiting, abdominal pain, constipation, and melena. Osler reports many such cases.

Chronic lead poisoning with attacks of colic occasionally may be the cause of persistent chronic vomiting.

A consideration of this survey shows the difficulties that may attend the diagnosis of causation in chronic and periodic vomiting; careful search of the entire body and its functions may be necessary. While the possibilities of variation are great, we would offer certain deductions from this survey, having reference particularly to the characteristics of the vomiting that may be expected in certain conditions.

1. Vomiting of a chronic type, following a gradually developed epigastralgia, one-half to three hours after the ingestion of food, is attributable to peptic ulcer, gastric or duodenal.

2. Chronic vomiting that occurs ten to fifteen minutes after food ingestion is attributable to stenosis of the cardia, nervous abnormality, cerebral lesion (occasional rather than chronic), or to protracted acute gastritis.

3. Copious vomiting ten or more hours after food ingestion indicates a muscular insufficiency; frequent repetition indicates a permanent lesion in the nature of a mechanical interference with the exit of food.

4. Vomiting in the night is particularly liable to occur in choelithiasis, periodic hypersecretion, muscular insufficiency, and nervous abnormality.

5. Vomiting attempts when the stomach is empty

indicates a cause other than a gastric lesion, either a reflex, a toxemia, a cerebral lesion, or a nervous abnormality.

6. Morning nausea and retching indicate either a beginning of pregnancy, alcoholism, pharyngitis, nephritis, or a nervous abnormality.

7. Periodic vomiting of clear gastric juice of normal or supernormal acidity in any considerable amounts indicates a secretory neurosis or an ulcerative lesion.

8. Vomiting as a sequel of headache, accompanied by severe nausea, but no gastric or abdominal symptoms, characterizes attacks of migraine; in a majority of cases eyestrain is the underlying cause.

9. Attacks of vomiting of sudden onset, with tinnitus, deafness, and vertigo, are attributable to disturbances of pressure in the internal or middle ear.

10. Periodic attacks of vomiting of sudden onset, associated with more or less severe gastric pain and nausea, retraction of the abdomen, obstinate constipation during but not preceding the attack, and freedom from abdominal tenderness, are suggestive of the spinal crises, idiopathic nervous vomiting, and lead poisoning.

11. Periodic attacks of vomiting after abdominal colic and constipation, with localized or general tympany, are suggestive of chronic intestinal stenosis.

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The Doctor's Lamp.—A correspondent writes to complain that there is in his village a medical practitioner who served for a year as a civil surgeon in the late South African war. Since his return home this gentleman has put up a white lamp with two red crosses in front of his house, which emblem is taken by the simple village folk to indicate some special privilege. Professional opinion runs strongly against any form of advertisement, and so conspicuous a lamp would certainly appear to fall within the meaning of that term.—*British Medical Journal.*

THE ETIOLOGY OF ECZEMA.*

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"Who shall decide when doctors disagree,
And soundest casuists doubt like you and me."

It is axiomatic that physicians *will* differ, and it cannot be better illustrated than in their conclusions in regard to the causes of diseases. You are no sooner convinced that you fully appreciate the nature of a certain malady than you are confronted with an entirely different conclusion by some accepted authority; so that eventually you are forced to the conclusion that you know little or nothing of the *essential* cause of any disease, except those in which a specific microorganism is clearly shown to be present. In this paper I will confine my remarks to the etiology of eczema. What do we mean by eczema? Is it a disease or only a name? A word derived from the Greek, meaning to boil over, to effervesce, or literally an eruption. It is not referred to in the writings of Hippocrates, Galen or Calsus. The first mention of it, according to Hebra, was by Ætus, A. D. 513, but it remained for the English dermatologist, Willian, to first partially describe the disease as we now understand it. Dr. Nevins Hyde refers to the word as being so frequently used by the advertiser, the charlatan, that there are few experts who now use it without a species of mental reservation or qualification, adding that in his opinion the doom of the word is probably written. When Professor Walker of the Royal College of Physicians, Edinburgh, gave his definition, he probably had in mind John Hunter's remarks that "definitions are damnable things," for he says, "without sarcasm," it is "a term commonly applied to any wet or scaly inflammation of the skin, of the nature or cause of which the observer is ignorant."

In defining a disease we should be careful in the use of the terms that we are to apply to its different forms and stages. There are many designations used in connection with eczema that are not only misappropriate and absurd, but are seriously misleading. Though we may use the terms papular, vesicular, pustular, squamous, to designate the preponderating or only lesions present, we should not refer to the malady as scrofulous or tuberculous, as is so frequently done, for this would naturally suggest the idea of the existence of tubercle bacilli, whereas it is simply meant there is a resemblance to the symptoms that occur in those diseases in which this microorganism is actually present. So it is with psoriatic, syphilitic, ichthyotic eczema, which have entirely different pathological conditions: though they may occur in the same individual they are not combined. Seborrheal eczema is justified, as the two pathological conditions manifest themselves as one disease. Many cutaneous troubles, such as scabies, eczema-marginatum, impetigo contagiosa were formerly classified as eczematous till the parasites that caused them were actually demonstrated. There is no doubt that in the near future other cutaneous manifestations now appearing as eczema will be proven to be due to specific bacteria. Old theories—long ago condemned as absurd—occasionally crop up again and are seriously discussed. I have always taught my students and emphasized the fact that we should cure an eczema as quickly as possible. Professor Hebra, known as "the father

*Read before the Medical Society of the District of Columbia, November 28, 1905.

of dermatology," has said, "The object of our warmest endeavors is to find a means of terminating these diseases (skin diseases in general) as speedily as possible. Were we only in possession of remedies which produced cures thus rapidly we should have no anxiety with regard to the appearance, from this cause, of metastasis or of any other consecutive diseases." And again Malcom Morris of London declares "The fear of curing eczema on account of causing congestion of the brain or other internal disorders" as being absolutely without foundation. Yet we find the well-known dermatologist, Brocq of Paris, strongly advises against curing some forms of eczema too quickly. He says, "It occasionally occurs that the disappearance of an eczema is followed by visceral troubles of the gravest nature; that in rare cases serious cerebral accidents may follow the cure of chronic eczema."

In studying the literature pertaining to eczema we find many pages devoted to the predisposing causes from within, and the exciting causes from without. Though predisposing and internal causes are used as synonymous terms as are external and exciting, we may frequently find the reverse to be true. As to so-called constitutional causes, we find the etiological factors given as—to mention only a few—asthma, diabetes, onstipation, diarrhea, anemia, chlorosis, malaria, "want of tone of the nervous system," neurasthenia, "taking cold," disorders of digestion and assimilation, vaccination, adherent prepuce, intestinal parasites, uterine disorders, dentition, diseases of the liver and kidney, improper food, dyspepsia, pregnancy, lactation, menopause, different diatheses, such as gouty, rheumatic, hepatic, lithemic, dartrous assimilative debility, and a few others. There is no exaggeration in this list; they may be found in any text-book. For some unaccountable reason cancer of the stomach, locomotor ataxia, and cholera are omitted. In fact, "any old" cause is given that may occur to the vivid imagination of the author. It is amusing to note that frequently the very same diseases, or conditions that are referred to as causative, are given as curative or preventative: such as vaccination, pregnancy, and lactation.

If these constitutional conditions are to be regarded as the predisposing causes we should expect to find them associated with at least the majority of cases of eczema, but let us see if a true relationship can be proven. It would be indeed odd if some one or more of these disturbances were not present in a given case, but I contend it does not occur more frequently in ezcema than in many other cutaneous maladies. When they do exist and the cutaneous conditions vary with their relapse and improvement it simply points to the fact that the eczema is better or worse, according to the strength of the patient to resist the disease. In fact, it would appear impossible for such varying pathological conditions to give rise to a catarrh of the skin; the coexistence of the several conditions is simply a coincidence. In reviewing the predisposing causes we find that some favored observers have discovered actual changes in the nerve structures; this would be worthy of consideration, but that it has been seen so seldom it can only be regarded as a coincidence. The influence of the nervous system has been well stated in a short monograph by the eminent dermatologist, Dr. L. Duncan Bulkley of New York, and no one in this country, at least, is better qualified to pass an opinion upon any question pertaining to skin diseases in general. In the paper referred to he gives an analysis of ten thousand cases of miscellaneous skin diseases occurring in his private practice. Of these, 3,201 were sufferers from eczema (32.01 per cent. of the whole number), thus bearing out the generally accepted statement that one-third of all skin diseases—as they are presented to the practitioner for treatment—are eczematous. In reviewing his tabulation of six thousand cases of eczema, it is found that the disease is most frequent between the ages of twenty and forty—when the strain of life is the greatest (one-third of the entire number). Among the various forms of nerve disturbances he mentions neurasthenia, nervous shock, reflex phenomena, and functional and structural changes in the nerves themselves. Later I will give a clinical account of several such cases that have come under my observation.

I do not believe that gout, rheumatism, and many other of the diseases refered to as predisposing factors have anything whatever to do with either causing the disease or influencing it in any way after it has been established, except so far as any so-called "run-down condition" of the general system may render the cuticle less resistant to irritation. Diathesis in dermatology means a general constitutional condition which predisposes to or is accompanied by cutaneous disturbances. The idea originated with the French dermatologist Biett, in 1833; he was able to trace certain skin manifestations to syphilis, thus leading Casenove and others to attempt to elaborate the theory, so as to trace all forms of cutaneous diseases to some specific constitutional condition. Hence arose the terms scrofulous, tuberculous, arthritic herpetic, and other diatheses. Prof. Piffard of New York is a firm believer in this theory, and he suggested the name rheumic, as a condition due to the accumulation in the blood of an excess of certain excrementitious substances (the same that are efficient in the causation of gout and rheumatism); but with few exceptions the whole theory is now discarded by English, American, and German specialists. Pye-Smith of Edinburgh University rejects the whole doctrine and says "it seriously impairs the advance of general medicine"—that the hypothesis is practically misleading in prognosis and treatment, no less than scientifically unsound."

Heredity.—Though no child was ever born with eczema, many are brought into the world with a vulnerable skin, that may later develop the disease under certain circumstances. The cuticle is not "eczematous," but is particularly susceptible to different inflammations, varying according to the form and degree of irritations, and the constitutional conditions, the age, sex, nationality, and many other factors. But with very few exceptions it has not been within my personal experience to be able to trace the disease to the progenitors. So that my own opinion is that, as a rule, eczema cannot be regarded as hereditary, either directly or indirectly; that is, that the malady is no more likely to occur in those children whose parents were suffering with the disease than those whose progenitors had a perfectly normal cuticle. According to Kaposi, who was the representative treacher of the German school of dermatology, "all the different forms of eczema can always be produced artificially in all parts of the skin, in every individual." Prof. Nevins Hyde of Chicago is in accord with these views. He has declared that "every phase of eczema can be artificially produced by the action

of external irritants." The majority of English and American dermatologists take issue with these eminent specialists, and make a distinction between a simple artificial dermatitis and eczema. As Prof. Hardaway says, "An eczema is a dermatitis, but a dermatitis is not necessarily an eczema." An example may be given in the inflammation produced by the hus toxicodendron and by the aniline dyes. There is at first a dermatitis, and it may end as such or it may continue, or frequently recur as an eczema. According to Jamison, Leloir, Hardaway, and others, when the inflammation returns year after year it is caused by other exposures to the poison; if this dermatitis is sufficiently prolonged a true eczema may develop. Pye-Smith makes the distinction between a traumatic dermatitis and an idiopathic eczema. He says: "When the irritation directly follows the irritant, is not prolonged after its cessation, does not spread to other than the affected regions, does not recur without fresh irritation, and does not follow the local distribution of eczema, then it is best to call it a common superficial dermatitis of traumatic origin." According to Malcom Morris of London, "A dermatitis appears in response to a visible cause and begins to disappear when that cause ceases to operate. True eczema arises without obvious cause, and the skin may be healthy, or there may be some preexisting abnormal condition, but there is no visible source of irritation." Jamison declares, in regard to the generally described cases of dermatitis, "that if it is not eczema it closely resembles it in many particulars."

At the present time American dermatologists, as a rule, consider that the truth as to the etiology of eczema lies midway between the teachings of the French and German schools; that is, that the affection arises in consequence of some unknown constitutional condition, and is brought into evidence in consequence of some external irritant acting upon a vulnerable skin. (Refer to Walker's definition above.)

Is the Disease Contagious?—The consensus of opinion is that it is neither contagious nor autoinoculable, notwithstanding the fact that so eminent an authority as Professor Unna of Hamburgh classifies several of the forms of the malady as infectious catarrhal inflammations, but even he does not at present claim a universally parasitic origin of the disease. The peculiar bacteria that cause the vesicular and seborrheal eczemas he designates as the morococci, from their resemblance to clusters of mulberries. He has succeeded in producing the disease by inoculation, the morococci and the toxins produced by them acting on a susceptible skin. Jamison, Leloir, and others, while doubting that this or other parasites are the essential cause of the disease, consider they play an important part in perpetuating the trouble after it has once been established. As to its autoinoculability, it has been observed at times that the eruption will spread when the discharge runs down upon the previously unaffected skin. Jamison believes that this discharge may even affect other individuals who come in contact with it. Van Harlengen does not believe the disease can spread or be conveyed in this way. He says: "It cannot be acquired from being in contact with or handling the discharges." It is explained that, when the contiguous surfaces become affected, it is simply from the action of the original cause, or as a result of the heat and moisture and the rough character of the adjacent skin, acting as a simple irritant; the discharge itself is only contagious in the sense that all pus is more or less infectious. There is no question but that the parasitic theory is growing well in the minds of those who formerly argued against it, because they could not always find the bacteria in the initial lesions, for Bender, Brockhart, and others have now proven that the toxins alone, of the staphylococci, for instance, can produce vesicles that are themselves free of bacteria.

In reviewing a few of the causes given as external or exciting, we find in the first place that there must be a vulnerable cuticle upon which the irritant can act, and that this susceptibility may be either inherited or acquired. Though there is no apparent peculiarity in the minute structure of the skin, there is no question but that some persons have an idiosyncrasy, a susceptibility, of the cuticle to develop different forms of inflammation according to the nature of the irritant.

The want of cleanliness is frequently referred to as an exciting cause, but this *alone* will not cause any form of inflammation upon a normal skin. While an Acting Assistant Surgeon U. S. A. for a number of years I had occasion to come in contact with a number of Indians (the filthiest race with which I am acquainted), and I never saw a case of eczema among them. In hospital practice in New York City, Chicago, Ill., Louisville, Ky., and in this city, I have had occasion to treat many negroes and have found they are not as prone to the disease as the white race.

Though soap will remove the dirt, it makes the cuticle more sensitive by thinning the outerlayer and depriving it of its natural oiliness. I would not be misunderstood as advocating uncleanliness, but simply to emphasize the fact that the *overuse* of soap and water are harmful. We are all familiar with the patients who can submit to any kind of treatment except being deprived of their daily bath, even those who must have two full-length baths every day. Fortunately we know that the majority of these people are simply posing before the physician to show that they are more cleanly than "common folks," and then, too, it is so very English. (I actually saw an Englishman side-track his private car on the Northern Pacific Railroad, delaying his journey many hours so he could "take his tub".) Water, as a rule, is poisonous to an eczematous skin, and should be avoided as much as possible while the cuticle is acutely inflamed. Van Harlingen declares that "The insensate declamation against personal uncleanliness as an almost universal cause of skin diseases, which is too common, not only among superficial writers, but among physicians who ought to know better, would in many cases be better replaced by a caution against excessive ablution." After having waded through the maze of conflicting opinions in regard to the etiology of eczema, having consulted twenty-seven books and twenty-four monographs and extracts from medical journals, fifty-one authors in all, who are supposed to be thoroughly conversant with the subject upon which they have written, I freely confess I am completely confused in regard to the causes of eczema, as the disease is now classified. I can only conclude by stating my individual opinion in regard to the proper definition of the disease. As it is *now* understood it is a more or less chronic catarrhal inflammation of the skin, accompanied by peculiar symptoms that are caused by some form of irritation (external or internal) acting upon a susceptible cuticle. There must be primarily a certain condition of the skin itself—a predisposition, a susceptibility, a

vulnerability to take on the disease, either inherited or acquired. The latter state may be brought about by any constitutional disease that will produce systemic debility. I have already stated that I am not in accord with the prevalent view that there is such a thing as an *exclusively* "eczematous skin," but simply that the cuticle may be particularily susceptible to different forms of inflammation, varying according to the strength and nature of the irritant and the age, sex, nationality, and other factors pertaining to the patient.

So much for eczema as it is *now* classified; but I wish to place myself on record as predicting that some time in the near future the name eczema will be confined to that form of cutaneous disease that is caused by some specific parasite (Unna's morococci or some other bacteria) acting upon a vulnerable skin. I will now give a clinical account of a few cases of the disease, observed in my private practice, that may be of some interest from the fact that I have been unable to trace any definite causation; that the etiological factors are usually well pronounced, or from some other peculiarity not usually found in this disease.

As an example of an unusually severe case, and probable inherited predisposition I would mention that of Mr. C., seventy-five years of age. The body was affected from head to feet, and when I first saw the patient he said he had seriously debated whether it would be best to end his existence or submit to treatment. The pruritus was so severe that in his agony he would tear the skin with his fingernails, which he had allowed to grow long for this purpose, even resorting to the use of a stiff brush. He would walk the floor most of the night, procuring occasional naps in a chair. Most of the skin was of a vivid red, even of a violaceous color in patches, deeply infiltrated, objectively feeling like the cuticle of a "hide bound" horse. The skin about the inner portion of the thighs and legs was weeping profusely. This particular eruption first made its appearance on the face and had been diagnosed as erysipelas. He told me that the disease first made its appearance when he was about fifty years of age, and that a number of attacks had manifested themselves at intervals since that time; that otherwise his health was excellent in every respect, unusually so for a man of his age—neither gout, rheumatism, nor any other disorder had confined him to his bed for a number of years. During this attack no form of treatment had given him the slightest relief. He had been deprived of his usual occupation, that of lecturing on different subjects at several universities, confined to a darkened room, suffering intense agony physically and mentally, and with no hope for the future, even that death would relieve him. He was indeed to be pitied. I was fortunately enabled to give him some relief, till a few months later he died of pneumonia. Two years after his death his widow brought their twelve-year-old daughter to me, saying her husband had instructed her to immediately consult me if she or the child should again develop the disease. The patient complained of lassitude and pain in the back and abdomen. Her menses had just appeared for the first time. The eczema primarily appeared in the form of "milk crust" at one year of age. After being relieved it again appeared at about five or six years of age. This outbreak soon disappeared and she had no other manifestation of the rash till she consulted me. The eruption was of a vesicular type, situated in the face and ears. It soon disappeared under treatment and there has been no return in the last four years. This is the only case I can recall in which the tendency to the disease appeared to be distinctly transmitted to the offspring, the father having the disease when she was born, and she developing it a year after birth.

The following case is unique in my experience, and a good example of so-called "reflex eczema": Mr. C., nineteen years of age, suffered from vesicular eczema of the scrotum, penis, and inner portion of the thighs. Under local treatment alone there would be great improvement, but it was noticed there would be occasional acute exacerbations without any assignable cause. After being questioned closely, he confessed he had masturbated since he had been a young boy, that he had often tried to stop the habit, and had partially succeeded, but that recently the itching about the affected cuticle had been so severe he had to rub and stratch the parts vigorously to obtain relief. This so excited his passions that he would relieve himself by masturbating, and he continued to do this again and again during the night. In the morning he would feel, as he expressed it, completely "played out." The skin was intensely inflamed, edematous, and much infiltrated. After refraining from these gymnastic exercises he was cured within two months. It is now six years since he has had the slightest manifestation of the eruption. Though masturbation did not produce the disease, there is no doubt it greatly aggravated it after it had been once established.

Another case of reflex eczema is that of an infant, presenting papular eczema of the face, arms, and toes. The patient had good general health, but the disease did not respond to local treatment and regulation of the diet. I advised circumcision, as the prepuce was very long and I thought it might have something to do with the trouble in the way of reflex action. After the operation the child began to improve and was soon entirely relieved.

A report of several cases of typical neurotic eczema may be of some interest: Mrs. M., a young married woman, had good general health until she visited a high elevation in the mountainous region of Montana, when she began to suffer from severe headaches, irregular menstruation, and frequent fainting spells. A few months later she had occasion to travel several hundred miles by stage. One dark, rainy night, the stage driver being drunk, he nearly upset the conveyance over the edge of a precipice. She became frightened, hysterical, and jumped to the ground. Later she was found lying insensible in the deep mud, and drenched to the skin. On being placed in the stage she partially regained consciousness, only to faint again. She was conveyed to a tavern and put to bed, but on account of a severe diarrhea she had to be placed in a sitting posture. Several times on each occasion she complained of feeling faint, but did not become unconscious. In the morning a profuse erythematous eczema was observed upon the face, chest, and arms, accompanied with severe pruritus. In twenty-four hours the whole of the affected skin took on a vesicular condition, the face was much swollen, and the eyelids were nearly closed. Never before or since that attack has she had an eruption of any kind.

In a few cases of seborrheal eczema there was no assignable cause, either externally or internally. Miss T., aged thirty-two years, a professional nurse, suffered from seborrheal eczema in patches about the legs, thighs, arms, and scalp. Her health was good in all respects, though under great nervous strain on account of attending to her professional

duties, often being kept awake the whole night for weeks attending a patient with delirium tremens. The eruption, during this time, has gradually improved, till at the present there is no sign of the trouble remaining.

Mr. R., aged fifty-six years. Profuse seborrheal eczema, situated in arms, chest, legs, and thighs. The itching at times was very severe. The rash in the chest and arms appeared in patches of redness covered with the thick, greasy scales typical of this form of the disease. In a few weeks this portion of the eruption entirely disappeared, but the papular condition on the legs remained for a number of months, kept up from scratching the parts, the irritation being due to a number of varicose veins. In this case, too, I was unable to trace the eruption to any particular cause, the patient's general health being good in all particulars, except for occasional attacks of slight muscular rheumatism, but he had suffered in this way for twenty-five years without manifesting eczema. He indulged in the use of stimulants occasionally to excess, but this could hardly be counted as an etiological factor, as he continued to indulge his appetite in this way during treatment, and was cured by means of local treatment alone.

Mr. L., thirty-two years of age, presented very much the same form of rash as the last patient, situated in the same localities, and soon relieved by local applications. A month ago he again made his appearance, saying he had occupied a room with a friend, who, according to his physician, was suffering with scabies, and Mr. L. supposed he had caught the same disease. His eruption was a typical example of seborrheal eczema. He had never been ill in any way, and before the eruption appeared five weeks ago he said he had never felt better. He is now entirely well. I could, of course, report many such cases, but simply desired to call attention to the fact that it is absolutely impossible to discover any appreciable cause in many of these cases of eczema, and that they are perfectly amenable to treatment by means of local applications without any internal treatment whatever.

In my private practice I find that children under the age of six affected with eczema, are particularly robust, strong, and healthy. The only cause for the disease I have been able to find in the majority of these cases is improper food, not only in their being allowed too much candy—a small quantity is not harmful, as it simply satisfies a natural craving common to all children—but they are frequently given beer, tea, and coffee. (In one of my cases, a German parent allowed his five-year-old son a half-pint of beer a day), and allowed to come to meals with their parents and "taste" about everything on the table. I have frequently been able to relieve these cases by simply regulating the diet and applying locally some indifferent application. In public practice I have usually found the patients weak, anemic, so-called "strumous" children. Why there should be this difference I an unable to say. That the disease is of a more acute inflammatory type in children than in adults may be accounted for from the fact that in early life the skin is thinner and the glandular structure is more active.

A FEW SUGGESTIONS IN REFERENCE TO CONSUMPTION.

By L. BARKAN, M.D.,
NEW YORK.

Undoubtedly the great increase of fraternity, philanthropic institutions, and the understanding for public welfare and public utilities is to be traced back to the increase of knowledge and science. This promotion of science in general includes the promotion of economics, of hygiene, and the practice thereof, and these will be followed by a reduction of consumption, the scourge of the human race, which feeds on prejudices, brutal selfishness, and ignorance. There is an eternal law permeating human society that whosoever does not care for the common interest of his fellow men will be buried himself under the jaggernaut of his selfishness. The true welfare of the single individual cannot be separated from that of his fellow men. People have not yet been, however, sufficiently educated to this axiom, and while science has entered and permeated all branches of professional, industrial and agricultural life and the trades, it has not been taken up satisfactorily in our foreign and home political actions. The assertion of Gustavus Adolphus to his son: "You do not know with how much stupidity the world is governed," still obtains, and an outcome of stupidity in politics will probably be an epidemic caused by the continuance of the civil war in Russia and threatening the whole world. This shows the solidarity and reciprocity between different countries, and that not only the market price of goods of one country influences that of another country, but that political institutions and health conditions of one country react favorably or unfavorably on those of another.

Numberless are also the mistakes and the sins committed everywhere, as *e.g.* the overcrowding of the houses and the population in larger cities, the misplacement of towns and cities or sections thereof, and the wrong establishment of waterworks and especially the sewerage, which in certain cases it is impossible to improve or complete. I want to mention only a few striking instances. A big resort hotel in Florida was built on quite unhealthy ground. The California capital in San José, a healthful and lovely city, was removed by politicians to Sacramento, an unhealthful and malarial place. San Francisco, endowed by nature with splendid slopes and apparently destined to have the best sewerage in the world, has the poorest. There are so many bad and "dead" corners there that it will take years to improve the system, and a thorough cure will be impossible. Physicians have not been and are not consulted in such important matters of public health.

Herbert Spencer considers consumption to be a barrier to over-population, but there is no reason for this anxiety, at least not for a long time to come, if ever. If any artificial restriction and selection of the population must take place, teachings and legal measures should debar sick and delicate persons from matrimonial life and propagation of children. This is practised among Mohammedans, and especially in Turkestan.

The German poet, Schiller, said: "The stomach and love govern the world," but in our times of bad stomach and indigestion he would only recognize the rule of love. If sick and delicate people, whether poor or rich, were to be kept away and prevented from loving members of the opposite sex such a procedure would bring forth a favorable health influence on every matrimonial candidate. Presumably nobody would then do overwork or over-worrying, and the labor market would provide many more people with work and sufficient food than at present. On the other hand, we cannot but recognize the civilizatory and hygienic value of proper and limited work, and our endeavor should be to distribute such work more uniformly and systematically, to discover new channels for work, to bring capital and labor into the closest and quickest touch,

to substitute work for alimony, to cure patients, and to impart them such health conditions as to enable them to carry out their human task, to perform unextensive work. New industrial branches are always springing up, and there is yet plenty of tillable land in the world to give work, food, air, and sunshine to millions of people.

Our public and domestic hygiene is still defective, and there is plenty of room for reform.

Ceteris paribus, a patient traveling to his health resort should prefer a sea trip to a railroad trip, as the latter, by the dust creeping in everywhere, increases the danger of exacerbation. When Felix Niemeyer advised against sending away tuberculous patients he was decidedly mistaken. Thousands of cured people in Florida—who have reached old age—prove that it is not only of importance where the patient goes, but how and how far he travels.

The cheapest and most practical receptacle for the secretion from the mouth is a common matchbox, lined with soft or any other paper, and which at the first opportunity may be thrown into a fire.

To the disposal of the secretion of the nose, however, is not given due attention by any means. The court regulations and masters of ceremonies in the Middle Ages forbade the use of the hand for this purpose, and especially so at the table, while they inculcated the application of a handkerchief. What was a great improvement, then, is antiquated at present, and urgently requires a change to the better. We object to spitting bronchial secretion into a handkerchief, but hygienically there is no difference between the bronchial and nasal secretion, and both ought to be made harmless. The handkerchief, however, is quite a dangerous bacteria carrier and preserver chiefly on account of being stored in the depth of a pocket where a mild temperature, humidity, and seclusion of air and light contribute to the increase and spread of bacteria.

Wiping the nose in society, and especially at the table, ought to be discarded as being unesthetic. There is no logic in removing the nasal secretion publicly and other secretions privately. The nasal discharge may not only spread pneumonia and tuberculosis, but also their frequent precursor, influenza; and, furthermore, cerebrospinal meningitis and other purulent diseases. In case of influenza the handkerchief cannot house the quantities of secretion. The moistened handkerchief wets the fingers and the pockets, and influenza bacteria are deposited broadcast.

As a substitute for the handkerchief is to be suggested paper, either Chinese or preferably newspaper, which, by using the left hand near the nose and the right one above the head, forms a kind of stiff curtain, catching up all nasal secretion. The author has been using this method for years, but only once or twice per day, as he thinks that a too frequent removal of the nasal secretion done in a powerful way produces a mechanical irritation of the mucous membrane of the nose, and is apt to cause bleeding. At other times, when alone, he introduces cotton or, preferably, tissue paper or tar tissue paper tampons, which not only absorb and abduct the nasal discharge and germs, but desiccate the nose, and by producing a pressure on the nasal membrane reduce or check the reproduction of discharge probably in a similar way as pressure or a vaginal tampon will stop bleeding. Such tampons clogging up the nose may also be made use of with advantage in epistaxis. I have used them for many years, and have never experienced their escape into the pharynx.

At this occasion the remark might not be amiss that an operator with nasal catarrh should either have his nose tamponed or preferably not operate at all; the latter, of course, holds good for bronchial catarrh, too.

Another reform could be the establishment of roof hospitals or sanatoria in use for one or a few patients. The wind should not strike the patient, nor should it be reflected to a strong degree; the bed or the entire cottage should for this purpose be revolving. The wall of the head end, in order to catch up and divide better the wind or breeze, should be semicircular or semielliptic; the other walls should be high, and, like the roof, removable. The entire roof and walls, or parts thereof, could consist of twisted pine—or eucalyptus branches. In short, the cottage should have such a shape and condition that the wind should not exert its strength, would pass above and at the side of the patient, though providing him with plenty of fresh air. Moreover, a wall, when existing on the same or a neighboring house, ought to add essentially to the protection of the cottage and the patient.

One should not be afraid of "roof bacteria" spreading a disease, as fluctuating air does not deposit, but carries them far away and lands them where they seldom can do harm. This was at least my experience in the open-air treatment during the Russian-Turkish wars of 1876 and 1878, and this experience is corroborated by the scarcity of winds moving at an angle to the globe, by the different direction of winds on the top of masts and the deck, and by African dust found and analyzed in Berlin.

Convalescent consumptives have derived great advantage from performing my system of bed calisthenics while still confined to bed. The convalescent while doing exercise in bed is better off than when doing it outside the bed, as he can enjoy open windows and fresh air and still be protected by warm bed covers; later on he can also perform self-massage in bed. This work will take about half an hour a day, and in order not to get tired he ought to extend it over half or a whole day.

It is evident that this treatment will also be beneficial in other diseases, as in nervous cases, in rheumatism, gout, diabetes, and in surgical and other diseases where the circulation and respiration have to be stirred up without interfering, however, with a diseased organ in need of rest. The great importance of bed or horizontal gymnastics is shown in a beginning hernia or after a successful herniotomy, when, however, there is still a tendency to relapse. In both cases the upright position of the body and the downward pressure of the intestines will not permit gymnastics, but let the person exercise in horizontal position with a raised pelvis and the consequence will be an avoidance of the downward pressure of the intestine and a strengthening of the muscles and ligaments.

The question is often raised: When shall we have a reliable remedy for consumption like quinine in malaria? I take the opportunity to call attention to the very good effect of permanganate of potassium in tuberculosis, about which I published reports in the MEDICAL RECORD of 1895 and 1896; since then I have treated some more cases with this drug and have had the satisfaction of curing this dreaded disease in 31 cases out of 37. Half of the uncured patients had relapses by their own negligence.

Permanganate of potassium, the permanent antidote of corps poison, is also an excellent antiseptic remedy which, as well as sulphur preparations, I would like to try in meningitis cerebrospinalis.

454 WEST TWENTY-FOURTH STREET.

Tonsorial Asepsis.—For shaving a customer with a razor that had not been disinfected a barber at Eisenach, Germany, has been sent to prison for a month.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, February 24, 1906.

SYPHILIS IN MONKEYS.

AN experimental study of considerable importance and certainly of more than usual interest is that begun by A. Neisser nearly a year ago relative to the behavior of monkeys when inoculated with the virus of syphilis. It was in last March that Professor Neisser, accompanied by his assistants, Drs. Baermann and Halberstädter, went from Breslau to Batavia in order to prosecute their investigations on simian syphilis under more advantageous circumstances than had been possible in Europe, where monkeys of all sorts, and especially the anthropoid apes, are expensive, difficult to obtain, and hard to keep alive. Neisser returned to Europe some time ago and has now published a report on what has been accomplished in the *Deutsche medizinische Wochenschrift,* January 4, 11, and 18, 1906. His two colleagues are to remain in Java for an indefinite period longer in order to continue the observations, so that Neisser's communication is really only in the nature of a preliminary report. Some idea of the scale on which the work was carried out may be gained from the statement that there were kept constantly under observation ten to twenty orang-utans, twenty to thirty gibbons, and 600 to 800 smaller animals, while the total number of monkeys used in the experiments amounted to about 900. The observer's expectations in regard to the ease of obtaining and maintaining the animals were, however, not altogether realized, and Neisser says that although he had expected that even in the tropics there would be some difficulty in keeping the higher apes alive for any length of time, he was painfully astonished to find that intestinal diseases—dysentery and intestinal parasites—produced an enormous mortality among his stock. As regards the actual results obtained it must be admitted that but little that is going to have an immediate practical bearing on the treatment or prophylaxis of the disease has been ascertained. The entire subject is one that is comparatively new, however, and there is no doubt that the wholesale sacrifice of the Bandar-log carried out under the direction of the German scientist and his associates will result in laying a groundwork of observations that will prove a valuable starting point for further workers.

The report includes the discussion of a very large number of detached observations which do not as yet render any sweeping generalizations possible. The following few points are selected from the mass of material presented by Neisser. Although in general it was found that the virus of human and ape syphilis was more easily inoculable than that of the lower monkeys, this difference was neither pronounced nor constant, but it did seem certain that the more florid the process from which the material was obtained the more prompt and sure was the appearance of characteristic lesions at the site of inoculation. Successful results were obtained from primary glands, secondary lesions such as condylomata and mucous patches, and in some cases from tertiary products. Human blood and serum gave negative results, as did also experiments with simian organs such as spinal cord, liver, lung, kidney, muscle, and adrenals, while positive results were obtained from the spleen, bone marrow, glands, and testicle. Attempts to reduce the virulence of the poison by passage through lower monkeys were not conclusive, though Neisser apparently inclines to the belief that an increase of potency in this way is rather more likely. Out of forty cases in which syphilis virus and vaccine virus were inoculated together only twice did syphilitic infection take place. Attempts to produce infection by subcutaneous injection failed in every case. It was not found possible to devise any method by means of which the virus could be preserved more than a few hours, and it was found that eighteen hours after the death of an animal its virus had become inactive. Excision of the site of inoculation eight hours after the infection did not prevent the development of the disease, and the injection of mercury from the time of inoculation was also ineffectual in aborting the infection. In regard to the all-important question of immunity the results were not very encouraging. Indeed Neisser goes so far as to suggest that possibly what we are accustomed to call immunity in an individual who in consequence of a previous infection has become refractory to subsequent infections may not be immunity at all, and may depend simply on the persistence of a latent syphilis. Owing to lack of time the observers were not able to study the spirochete question very thoroughly, though Neisser favors the view that these organisms do stand in causal relationship to the disease.

While these few selections from the extensive report do not lead very far they indicate the importance of such investigations, and demonstrate the inadvisability of abandoning researches in this direction even though as yet they have not placed any new weapons in the hands of the therapeutist. We wish the expatriated scientists who are continuing the difficult work under what, no doubt, are very trying circumstances, success in their endeavors, and trust that in their next report they may be able to present something that will be of practical as well as of academic importance.

CLINICAL RESEARCHES ON THE VISCOSITY OF THE BLOOD.

THE change in the viscosity of the blood in health and disease has never been satisfactorily investigated, for the lack of a suitable method for estimating the changes which are believed to occur. Hitherto such examinations have been limited to specimens of blood which were either defibrinated or treated with certain oxalates to prevent clotting, and these procedures, although necessary, produced changes which were found to invalidate the final results to a greater or lesser degree. The improve-

ments in technique which have lately been developed in this branch of research work have, however, greatly stimulated the interest in the subject. Among the noteworthy contributions which have lately appeared is one by J. Bence (*Zeitschrift für klinische Medizin,* Vol. 58, No. 3), who has studied the phenomenon in a number of diseases, particularly in those of the circulatory and respiratory apparatus. Bence also extended his investigations to the more practical aspect of the question and studied the effects of various therapeutic agents which were believed to influence this property of the blood; we say believed, for, aside from the effect of venesection and the action of the iodides, we know very little of the latter subject.

It has usually been assumed that the viscosity of the blood remained unchanged and did not require to be considered in estimating circulatory conditions. Bence shows, however, that this assumption is not correct and that certain changes which occur, particularly in cardiac disease, are very well marked. As the result of his observations in a large number of cases, he finds that the viscosity of the blood rises and falls with the quantity of carbonic acid which it contains. This condition is brought about by alterations in the volume and the contour of the red blood cells, produced by the agency of CO_2, which may also be demonstrated in the circulating blood itself. By reason of this increased viscosity, blood overloaded with carbonic acid naturally exerts its effect on the heart. If the overloading is the result of cardiac insufficiency, the latter defect will be further increased. In suitable cases, inhalations of oxygen will reduce the viscosity of blood which contains abnormal quantities of carbonic acid by favoring the elimination of the latter, and in this manner the cardiac insufficiency may likewise be relieved. In nephritis the blood is apparently less viscous than normally, and the explanation of this phenomenon must be sought for in the hydremia which is usually present.

As regards the effect of various articles of food on the viscosity of the blood, Bence was unable to determine by animal experiments with the methods thus far developed any facts which would warrant a satisfactory conclusion, so that as far as any practical advance is concerned, but little has been added to our knowledge. The work constitutes, however, another example of the refinement to which laboratory methods have been extended in an attempt to solve some of the problems connected with modern medicine.

THE ENTRANCE OF AIR INTO THE CIRCULATION.

It is a matter of common belief that the entrance of air into the circulatory system is extremely dangerous, and may rapidly lead to a fatal issue. Most text-books on surgery and physiology have supported this view in their pages, the symptoms are carefully described, and a warning note is usually sounded with regard to the possible direful consequences of this accident. The fatal issue is attributed to the fact that the air finds its way into the right side of the heart, from which it cannot be expelled by the ventricular contractions, and interferes with the circulation to such an extent as to cause acute anemia of the brain, syncope, and death. These views have become so well established that any expressions to the contrary are almost revolutionary in their boldness, although the results of a number of investigations cast great doubt on their truth.

Among the latest investigations in this subject are those made by E. A. Larned (*Surgery, Gynecology, and Obstetrics,* December, 1905), who claims as the result of his animal experiments that air embolism is not necessarily fatal, or even attended with grave results. Some of his most conclusive observations were made in horses. In a number of these, increasing volumes of air, varying from twenty to two thousand cubic centimeters, were deliberately introduced in the veins. The most prominent symptom consisted of labored respiration, the degree of the disturbance depending on the quantity of air injected, but death itself could be brought about only by the continuous introduction of air under pressure, and in this instance it amounted to several liters. Several smaller animals were also experimented upon with similar results, and in only one case, in which twenty cubic centimeters of air were suddenly injected into a rabbit weighing two pounds, did death ensue. This quantity of air would roughly correspond to 450 c.c. in a child weighing forty pounds.

A noteworthy feature in all these experiments was the train of symptoms similar to those associated with dyspnea. The air evidently entered the heart and stopped the circulation, or it passed on into the branches of the pulmonary artery, shutting off the blood supply from some particular part of the lung, in this way producing dyspnea. If sufficient air is injected, the pulmonary circulation may be interfered with to such an extent as to cause death, but the entrance of a number of bubbles can do no more than temporarily close a few small branches and then the absorption of the air by the blood takes place.

These experiments fully confirm the careful observations already made by Senn, Hare, and a number of other investigators in smaller animals, and show quite conclusively that the danger to life from air embolus is largely overestimated. The effects are in direct proportion to the volume of air introduced into the venous circulation, and the large amounts which are referred to in these experiments are not likely to enter into the question in operative work. Less alarm need therefore be felt when, during the course of an operation in the vicinity of a vein, the peculiar hissing sound is heard which has been taken to indicate the entrance of air into the vessel, nor probably need any reproach be felt if a small bubble is accidentally injected with the hypodermic needle into the tissues. It seems to have been sufficiently well demonstrated that the belief that harm can result from such an accident is not well founded.

The Action of Glycerin on Bacteria.

Glycerin has come to be quite universally adopted as a vehicle for the preservation and administration of vaccine virus and similar material. It has been found not only to conserve the activity of the virus for a longer time than any other preservative agent thus far tested, but also to exert a marked influence on its bacterial content. It has been suggested, how-

ever, that other factors might also be concerned in the destruction of the bacteria present in glycerinated virus. With the idea of throwing some additional light on this question, a thorough study of this subject has been made by J. J. Kinyoun (*Journal of Experimental Medicine,* Vol. VII, No. 6), and as a result of this work a number of facts have been accumulated which add not a little to our knowledge of the matter. A closer scrutiny into the effects of glycerin on the bacteria present in vaccines showed that its employment had not been attended by uniform results, both temperature and specific variations in the bacteria exerting a well-marked influence. It was also determined that the bacteria, as a general rule, were destroyed much more rapidly in vaccine emulsions containing glycerin alone than in cultures to which glycerin was added. In another series of experiments it was shown that certain bacteria in pure culture were destroyed more slowly by glycerin than in vaccine or tissue emulsions. Kinyoun was thus led to believe that the tissue fluids or the cell contents might in some way be concerned in producing this sudden reduction in number, and also that this reaction might occur through some combination between the glycerin and the constituents of the emulsion, or by virtue of the glycerin extracting from the cells some peculiarly active bactericidal substance. Other observations also confirmed the fact that glycerin alone will destroy certain pathogenic bacteria only with difficulty, and that while blood serum can effect this same end, the process is in its nature a very slow one. When normal blood serum and glycerin are mixed together, however, they bring about the reduction of the bacteria much more quickly than either fluid alone. Another peculiar fact noted was that immune sera are less effective in this respect than normal sera, or at least in the latter the reduction proceeds with greater celerity. In order to obtain the most striking results with mixtures of serum and glycerin, the latter should be mixed with the serum before being added to the material containing the bacteria. The gradual extension and application of methods of vaccination renders this paper of timely import and interest.

The Tenement House Law.

There are few measures passed in recent years by the Legislature of this State which have been productive of greater good to the community than the Tenement House Law. Designed, as it is, for the protection of the tenants, it is naturally not favored by the owners, who object to anything that reduces the income derived from the rental of their buildings, and it is therefore not surprising that efforts are made every year to nullify the law. This year two amendments have been proposed, both of which are bad. One of these is a proposition to give to the Tenement House Commissioner discretionary power to remit fines for violation of the law; the other would change the definition of a tenement house from a building occupied by more than two families to one occupied by more than three families. The first of these amendments is palpably vicious and would afford such an opportunity for graft to a dishonest commissioner that it is inconceivable that it could be entertained by the Legislature. The second is apparently more innocent, but when it is considered that over 20,000 houses in New York city with more than 300,000 tenants, are occupied by only three families, and that these would then be deprived of sanitary supervision, it is seen to be almost equally bad. The Tenement House Law is an excellent law as it stands, and any attempt to tinker with it in the Legislature should be stoutly resisted.

News of the Week.

Army Medical Corps Examinations.—Preliminary examinations for the appointment of Assistant Surgeons in the Army will be held on May 1 and July 31, 1906, at points to be hereafter designated. Permission to appear for examination can be obtained upon application to the Surgeon General, United States Army, Washington, D. C., from whom full information concerning the examination can be procured. The examinations will be held concurrently throughout the country at points where boards can be convened. In order to perfect all necessary arrangements for the examinations of May 1, applications must be complete and in possession of the Surgeon General on or before April 1. Early attention is therefore enjoined upon all intended applicants. There are at present twenty-five vacancies in the Medical Corps of the Army.

Special Hospital for Dying Consumptives.—The President of the Cook County (Ill.) Board, Mr. Edward J. Brundage, has urged the Commissioners to consider the erection of a special building in the grounds of the County Hospital for dying consumptives. The number of tuberculous cases has increased in Chicago to such an extent that the corridors of the hospital at Dunning, Ill., are filled with patients. Hopeless cases and patients in a dying condition are thrown together and the majority of cases in the later stages prove fatal on account of the rough journey from Chicago to Dunning. President Brundage says that the inhumanity of sending dying patients to Dunning must be apparent. Patients are frequently carried by ambulance over miles of rough road to the hospital there, only to die within a few hours after their arrival. The horror of this procedure demands a prompt remedy. Provision must be made at the County Hospital for the dying consumptives, and such accommodations when established must be reserved exclusively for advanced cases, and the hospital at Dunning continue to be the institution for the treatment of hopeful tuberculous patients. The Building Committee of the County Board has voted to build an emergency hospital for consumptives adjoining the County Hospital.

An Institution to Combat Infantile Mortality.—In an effort to reduce Germany's infantile mortality, which is said to be surpassed only by that of Austria and Russia, an institution is to be founded in Charlottenburg, a suburb of Berlin, under the patronage of the Empress, who has contributed a considerable sum for the purpose. The object of the institution will be largely educational, and departments will be provided in which nursing women with their infants will be received for three months at a time. Others are intended for pregnant women, for labor cases, for artificially nourished children and for children born outside of the institution. A hospital section for sick children, a model dairy, a training school for midwives and nurses, and chemical and bacteriological laboratories will also be included. The records show that of 2,000,000 children born in Germany in 1903, 405,000 died during their first year.

Opposition to a Staten Island Tuberculosis Sanatorium.—If a bill introduced at Albany on February 14 becomes a law the project of establishing an institution for the care of consumptives on Staten Island will have to be abandoned. The bill is intended to accomplish this through an amendment to the New York city charter giving local boards of improvement the power to recommend the establishment of penal institutions and hospitals within their districts, and making further provision that no such insitu-

tion or hospital shall be established in any borough if such local board, by vote of three-fourths of its members, disapprove.

Hospital Policemen.—In order to avoid the unnecessary expense of detailing separate policemen to watch prisoners under treatment in hospitals a special squad, known as the hospital squad, has been created in Brooklyn. This consists of twelve men, six of whom will be assigned to the Brooklyn Hospital and six to the Eastern District Hospital, to which institution all disabled prisoners will be removed. It was found that last month 417 policemen had been detailed to watch prisoners at the hospitals at an estimated cost to the city of $3,389.

Building Operations at State Hospitals.—On February 14 the State Lunacy Commission awarded contracts for work to be done upon State hospitals at Rochester, Poughkeepsie, and Willard. At Rochester the north building of the hospital group is to be remodeled. At the Hudson River State Hospital refrigerating apparatus is to be installed, and at Willard a contract was let for the construction of a new cold storage building.

New Hospital for Oak Park (Ill.)—The new hospital of the Sisters of Misericordia, of Montreal, will be erected in Oak Park this spring. A plot, 170 by 307 feet, in the southern end of Oak Park has been purchased, and on it will be constructed a five-story building. The purchase price was $10,000, and was paid by Dr. J. W. Tope. The building will cost $100,000. The construction will be of brick and stone, and the hospital will contain sixty beds.

Annex to Presbyterian Hospital.—The Presbyterian Hospital of Chicago, is to have an annex, a pavilion, which will cost approximately $400,000. The erection of a strictly modern hospital is assured by E. A. Hamill's announcement that $352,000 already has been contributed to the building fund. Part of the money will pay for repairs and improvements on the old building, but the new structure will be erected exclusively for the accommodation of pay patients.

New Medical Society.—A society to be known as the Eastern Illinois Ophthalmological and Otological Society was organized January 16, at Champaign, Ill. The permanent officers will be elected and the organization perfected at a meeting to be held in Decatur, March 6.

Harvey Society Lectures.—The tenth lecture in the Harvey Society course will be delivered by Professor Charles S. Minot of the Harvard Medical School at the New York Academy of Medicine on Saturday, February 24, at 8:30 P. M. Subject: On the Nature and Cause of Old Age.

The Middleton Goldsmith Lecture of the New York Pathological Society was delivered at the New York Academy of Medicine on February 23 by Dr. Ludvig Hektoen, Professor of Pathology in the University of Chicago. The subject was "Phagocytosis."

Warren Triennial Prize.—Dr. Herbert B. Howard, Resident Physician of the Massachusetts General Hospital announces that competition for this prize will be on some special subject in Physiology, Surgery, or Pathology. Dissertations must be legibly written, and must be suitably bound, so as to be easily handled. The name of the writer must be enclosed in a sealed envelope, on which must be written a motto corresponding with one on the accompanying dissertation. Any clew which reveals the name of the writer before the award of the prize, will disqualify him from receiving the same. In case no dissertation is considered sufficiently meritorious, no award will be made. Dissertations will be received until April 14, 1907. A high value will be placed on original work. The Warren Triennial Prize was founded by the late Dr. J. Mason Warren in memory of his father. The judges are the physicians and surgeons of the Massachusetts General Hospital. The amount of this prize for the year 1907 will be $500.

Congress of the German Roentgen Society.—The second congress of this society will be held in Berlin on April 1 and 2, just preceding the thirty-fifth congress of the German Surgical Society which takes place April 4 to 7. Inquiries, as well as announcements regarding papers to be read before the Roentgen Society should be directed to the President, Professor Eberlein, Berlin N. W. 6, Luisenstrasse 56; or to the Secretary, Dr. Max Immelmann, Berlin, W. 35, Lützowstrasse 72.

Research in Serum Pathology.—The Department of Pathology and Bacteriology of Indiana University, Bloomington, Ind., announces that the position of research assistant in serum pathology in Indiana University for 1906-1907 is open for applicants. Candidates must have completed at least two years' work in a medical school of high grade, and must have a fair knowledge of bacteriology, of general pathology, and of volumetric and gravimetric methods of quantitative chemistry. Preference will be given a medical graduate.

The Fifth Congress of the German Orthopedic Society will be held in Berlin on Tuesday, April 3, 1906, on the day preceding the opening of the thirty-fifth congress of the German Surgical Society. Announcements regarding papers to be read are to be sent to Professor Joachimstahl, Berlin, W., Magdeburger Strasse 36.

New York State Homeopathic Society.—At the annual meeting of the Society held in Albany on February 14 the following were elected as officers: *President,* Dr. Newton W. Collins, Rochester; *First Vice-President,* Dr. T. Drysdall Buchanan, New York; *Second Vice-President,* Dr. Frederick W. Seward, Jr., Goshen; *Third Vice-President,* Dr. O. S. Ritch, Brooklyn; *Secretary,* Dr. H. Worthington Paige, Oneonta; *Treasurer,* Dr. F. M. Dearborn, New York; *Necrologist,* Dr. John L. Moffatt, Brooklyn.

To Stop Smoking by Children in England.—It is expected that there will be little opposition to the passage of a bill to be introduced at this session of Parliament, which is intended to suppress cigarette smoking by children. The draft of a measure has been prepared which prohibits the sale of cigarettes to children under 16, and makes any child under 16 found smoking any kind of tobacco liable to conviction and punishment. Sir William Broadbent is one of the supporters of the measure.

Gifts to Charitable Institutions.—Five charitable institutions in Brooklyn have each received $10,000 from Peter Wyckoff. The institutions are the Eastern District Hospital, the Eastern District Y. M. C. A., the Homeopathic Dispensary and Hospital, the Industrial Home, and the Graham Home for the Aged.

Bad Food Given to Steerage Passengers.—The captain of a transatlantic steamer was arrested on February 15, charged with providing unwholesome food for infants in the steerage. Several other captains of ships in the immigrant transportation trade have also been arrested for failing to obey the statutes relating to the accommodation of steerage passengers.

Stony Wold Sanatorium.—An appeal for funds has been made by the Stony Wold Sanatorium to enable it to accept a conditional gift of $13,500. The amount needed is $1,926.50, to complete a total of $18,500, which the donor of the conditional gift requires shall be raised before his contribution shall be available.

Health Conditions on the Isthmus.—According to a dispatch received at Washington on February 16, health conditions in the canal zone are excellent. During January there were 22,000 employees on the rolls. The average daily number of sick was 503, or 22 per 1,000. Seventy-four deaths occurred among the employees, including 26 from pneumonia, principally among negroes. There was then no quarantinable disease on the Isthmus. The last case of yellow fever at Colon was reported December 11; the last case at Panama, November 11.

Fifteenth International Medical Congress.—At a recent session of the German national committee having charge of the arrangements for the medical congress at Lisbon it was agreed to submit the following two recommendations for adoption at the time of the congress. One suggestion is for the organization of a permanent international bureau, having its headquarters in Paris and authorized to deal with any questions relating to the arrangements for congresses, the selection of speakers and topics for discussion, etc., and the other is to the effect that the international congresses be held only once every five years in future instead of every three years.

An Appropriation for Prof. Neisser.—A number of members of the Reichstag, representing different parties, have united in endeavoring to secure for Prof. Neisser an appropriation of 100,000 marks to enable him to prosecute his researches on the nature of syphilis.

Seasickness.—The Parisian Ligue Contre le Mal de Mer has chartered a steamship which will start from Hamburg and call at Antwerp, Dover, and Cherbourg on its way to Lisbon, which will be reached in time for the beginning of the International Medical Congress. Several hundred medical men have already signified their willingness to travel on the ship and test on their own persons the efficacy of the many remedies that have been suggested for seasickness.

The "Annals of Gynecology and Pediatry."—Dr. E. W. Cushing, after eighteen years of editorial service, has resigned the management of this monthly to Dr. John Van Doren Young, under whose direction the January number has appeared.

Orange Hospital's Name Changed.—The Hospital of the Immaculate Conception at Orange will hereafter be known as St. Mary's Hospital.

Antivivisection at Length.—According to the newspapers a petition measuring seven miles in length and signed by 630,054 persons, is to be presented to the British Parliament next session asking that a bill be passed for the prohibition of the vivisection of dogs.

International Laryngo-Rhinological Congress.—The Viennese Laryngological Society is organizing an international congress of laryngologists and rhinologists to be held in Vienna April 21 to April 25, 1908. The occasion is to commemorate the establishment of laryngology on its present basis by Turck and Czermak fifty years ago, as well as the semi-centennial of the society. The President of the society is Professor O. Chiari, and the Secretary Professor M. Grossmann, IX., Garnisongasse 10, Vienna.

International Food Exhibit.—An international pure food exhibition will be held at Antwerp during April and May of this year. Medical and pharmaceutical exhibits, and particularly those relating to sanitation and hygiene, will form important features. Details may be obtained from the office of the secretary, 26 Rue d'Arenberg, Antwerp, Belgium.

Fox River (Wis.) Medical Society.—At the annual meeting of this society, held at Green Bay, the following officers were elected: *President*, Dr. R. E. Minahan of Green Bay; *Vice-President*, Dr. W. R. Hicks of Menominee, Mich.; *Secretary and Treasurer*, Dr. H. W. Abraham of Appleton.

Officers of the Chicago Laryngological and Otological Society.—At the annual meeting, recently held, Dr. Otto T. Freer was elected *President*, and Dr. Geo. E. Shambaugh, *Secretary*.

New Hospitals to be Erected.—A new hospital to cost $200,000, is to be built by the Chicago Lying-in Hospital and Dispensary. Plans are being made for a nurses' dormitory for the Mary Thompson Hospital for Women and Children, to accommodate thirty-one nurses, and to cost about $20,000. Plans have been prepared for the Cribside Pavilion, to be erected in connection with the Chicago Memorial Hospital, to cost about $40,000.

Obituary Notes.—Dr. Warren Elliott Harrigan of Williamsburg, N. Y., died on February 14, as the result of an attack of heart failure which came on while he was prescribing for a patient. He was forty-two years old and a graduate of New York University.

Dr. Florence De Hartt of Jersey City, died suddenly on February 12, in Trenton, where she was resident physician of the State Home for Girls. She had practised in Connecticut prior to becoming associated with her sister, Dr. Clara De Hart, in Jersey City.

Dr. William V. McKenzie of Metuchen, N. J., died February 14, after a long illness. He had practised in Metuchen for more than seventeen years and was president of the local Board of Education, member of the Board of Health, and president of the Middlesex County Medical Society.

Dr. William L. Shoemaker of Georgetown, D. C., died on February 8, after an illness of over a year, at the age of eighty-three years. Dr. Shoemaker was a graduate of Jefferson College and of the University of Pennsylvania Medical School.

Dr. A. H. Butts of Charleston, W. Va., is dead of pneumonia at the age of seventy-two years. Dr. Butts was born in Louisburg, W. Va., and had practised medicine since 1860, when he was graduated from the Richmond Medical College of Richmond, Va. At the outbreak of the Civil War he enlisted in the Confederate Army and served as surgeon until the cessation of hostilities.

Dr. Benjamin Franklin Grant of Bath, N. Y., died on February 17, at the age of seventy-nine years. He was a member of the United States Board of Pension Examiners for Steuben County. Dr. Grant was graduated from the Homeopathic Hospital College, Cleveland, O., in 1867.

Dr. J. G. Robison of Rogers, Ark., and well known in the northwestern portion of the State, died on January 25, of pneumonia, at the age of forty-six years. He went to Rogers from Kansas City, Kansas.

Dr. C. A. Duval of Houma, La., died on January 23, after an illness of seven weeks. Dr. Duval was born at Gallatin, Tenn., in 1832, and served as a Confederate surgeon during the Civil War, until the surrender at Vicksburg. He was repeatedly elected coroner and health officer of his parish, and was serving in these capacities at the time of his death.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

GENERAL PARALYSIS OF THE INSANE A BACILLARY DISEASE—EVOLUTION OF GYNECOLOGY—UNCONTROLLABLE VOMITING IN PREGNANCY — BOSSI'S DILATOR — CHOLECYSTITIS — HEXAMETHYLENAMIN IN DIAGNOSIS—PHAGOCYTOSIS OF RED CORPUSCLES—EXCESSIVE ZEAL OF SANATORIUMS.

LONDON, February 2, 1906.

THE Morrison lectures at the Edinburgh College of Surgeons were this year intrusted to Dr. W. Ford Robertson, who gave the final lecture on Monday. He has taken the occasion of making an announcement of the greatest interest. As the result of researches carried on at the Royal Edinburgh Asylum, as well as the Scottish Asylum, he regards general paralysis of the insane as a bacillary disease. This is no hasty conclusion, but is offered as the result of investigations extending over five or six years in the institutions above named, and in which Dr. M'Rae participated. Others have conjectured that the disease originated in a bacterial invasion, and work has been done with a view of determining the question.

Dr. Robertson has found the microbe, which he describes as a diphtheroid bacillus, in the blood, in the cerebrospinal fluid, and in the walls of the cerebral arteries. In nine out of twenty-three cases of general paralysis he had made cultures from the bacillus obtained. There was some resistance to staining. It may be confidently expected that Dr. Robertson's conclusions will be speedily confirmed or corrected by other observers; meantime I may summarize his view. He holds that the disease is dependent on the invasion of the tissues by the bacillus, which morphologically closely resembles that of diphtheria. He contends that the previous infection of which the paralysis has been assumed to be a late result is only a predisposing cause which prepares the soil for the reception of the microbe. The organism gains access to the tissues through the mucous membrane. It can always be found in the alimentary canal. Probably sound membranes can prevent its entrance, but inflammation or other injury to the membrane would open the way for the invasion of the bacilli.

There are other predisposing causes, the chief among them being chronic alcoholism, and perhaps excessive indulgence in nitrogenous food. There is some hope that an antiserum might be of use, and Dr. Robertson said he should certainly try it, although in other bacterial diseases the method so far had seemed to him to have been rather disappointing.

Dr. Lloyd Roberts delivered on the 19th inst. his valedictory address to the North of England Obstetrical and Gynecological Society, in which he said that in the early days of gynecology the operator aimed directly at the object to be gained, estimating the dangers and difficulties roughly. Early methods therefore were crude, devoid of niceties of execution. Then improvements were made until simplicity was overlaid with complexity. Next attention was fixed on details, to the surmounting of isolated obstacles, often at the expense of the unities of the operation. Finally reaction set in, complicated methods were abandoned, and a return made to primitive simplicity, but shorn of its crudeness. Crude directness of purpose gave place to elaboration, and that in its turn to effective simplicity, marking the high-water mark of applied knowledge. This thought was illustrated by reference to operations for cancer, vesicovaginal fistulæ, etc. The same thought was applied to the operator who, Dr. Roberts said, had been evolved from the obstetric physician and he from the man-midwife; and there is a tendency to give up his original work of attending labors. But there must still be the skilled obstetrician. To him investigations into prenatal pathology offered a rich field for study.

At the Medical Society's last meeting Dr. Comyns Berkeley read a paper on "Uncontrollable Vomiting in Pregnancy," in which he distinguished that due to the gestation from that only associated with it. In the vomiting due to the pregnant condition he said many cases were neurotic and could be arrested by suggestion. But severe pernicious cases were toxemic. It had been suggested that this symptom, eclampsia, and acute yellow atrophy were all caused by the same toxin. Vomiting associated with pregnancy might be due to displacement (reflex cases), or to some definite disease in other organs, *e. g.* intestinal obstruction. Hyperemesis gravidarum is intimated to be fatal in 50 per cent. of cases treated, but Dr. Berkeley thought if a post mortem were made in every case the percentage would be shown to be less, as some other cause of death would be found in a number of fatalities. He thought premature labor should be induced earlier than was the practice; it was too often done when too late, and the mother died. Moreover, if done earlier it would, when the cause was not pregnancy, lead to a discovery of the concealed disease by the persistence of the vomiting afterwards.

Dr. G. Blacker then read a paper on "Dilatation of the Cervix Uteri by Bossi's Dilator." This, now in use for some fifteen years, he said, enabled the operator in practically all cases to effect dilatation according to the urgency of the case. The method was successful even in primiparæ, in whom the cervix had undergone no shortening or dilatation, and there was no extra risk of septic infection. The average time required when the canal was intact was twenty-four minutes; when partially obliterated, eighteen minutes; it is thus the most rapid method short of incisions. Patients usually pass through a normal puerperium. Dr. Blacker admitted the grave risk of tearing the tissues, and that even in the most favorable conditions lacerations might occur. Therefore the dilator should only be used in the most urgent cases, *i. e.* when grave danger to the life of the mother or child is present and rapid emptying of the uterus is likely to lessen that danger. Indiscriminate use of the instrument might seriously injure the cervix, or even the lower uterine segment.

Two cases of cholecystitis treated with inoculations of *Bacillus coli* were communicated to the Pathological Society on the 16th inst. by Professor A. E. Wright and Staff Surgeon Reid. Both were operated on for calculi, but pyrexia, jaundice, and other symptoms subsequently induced the authors to try inoculations of the bacilli raised from those found in the mucus discharged. The immediate result was to make the patient worse, but the mucus diminished, bile began to pass into the intestines, and complete recovery ensued.

At the same meeting Mr. Dudgeon read a preliminary communication on the use of hexamethylenamin for distinguishing between the *Bacillus typhosus* and *Bacillus coli*. He had obtained constant results. The *Bacillus typhosus* grew well in 0.1 per cent. hexamethylenamin broth, fairly well in 0.5 per cent., though delayed, but in 1.0 per cent. the broth was always sterile. The *Bacillus coli* gave abundant growth in 0.1 per cent., and also in 0.5 per cent., and a fair growth even in 1 per cent. If a tube of 1 per cent. broth were inoculated with *Bacillus typhosus* and incubated at 37° C. for twenty-four hours, then diluted two or three times and reincubated no growth resulted. Some further experiments with paratyphoid bacilli were related and Mr. Dudgeon is continuing his investigations.

Professor Wright read a note on "Phagocytosis of Red Corpuscles," which he had observed incidently in a case of cellulitis and another of cystitis. Both were pneumococcal infections. On examining the blood in these cases it was found that several red corpuscles were within white cells. In a third case the same thing was observed. Dr. Wright remarked that in these cases anemia and cachexia were marked, and he thought that the vitality of some of the red corpuscles was lowered by the toxin in the serum, and that consequently the injured ones were taken up by the leucocytes. Dr. C. J. Martin said he had met with the same thing in examining fibers from the spleen of animals which had died of plague.

Excess of zeal on the part of sanitary officials is leading to opposition to their authority. From various parts of the country strong protests are heard from time to time about their arbitrary proceedings. The same thing occurs in some London districts, and I have heard fierce denunciations of "sanitary tyranny." It seems a pity that useful measures should thus be exposed to the danger of falling into ill-repute. Here is a sample of excessive zeal brought to my notice. A case of scarlet fever was notified, the doctor further certifying that there was no occasion for removal. The sanitary inspector differed and got a magistrate's order, armed with which he terrified the mother into consent, and the child was taken to the hospital and kept at the expense of the ratepayers, although the parents were able and willing to pay their own doctor and nurse. You may think the medical officer of health would support the attending doctor. Not at all. He was rather concerned to exonerate his staff, and suggested that the nurse had thought the surroundings unsuitable. Another parallel case was met in the same way by the same medical officer of health. He is not a bad fellow, though he has rather a high opinion of himself, and I should like to warn him that if he continues thus to connive at unwarranted actions he may be called upon to defend his action in court, in which event he can scarcely expect sympathy from neighboring practitioners who have been treated in this way. There is no doubt that in one case the removal was illegal, and if the parents had prosecuted the connivance of the medical officer of health would have exposed him to an unpleasant experience.

The steady increase of insanity, says the *Hospital*, during the last fifty years is one of the most alarming of all adverse conditions of the public health.

OUR PARIS LETTER.

(From Our Special Correspondent.)

APPOINTMENT OF DR. ROBIN—MEDICOLEGAL ASPECTS OF RADIOTHERAPY—INDEX OF REFRACTION OF BLOOD SERUM—SCHOOL BOOKS AND CONTAGIOUS DISEASES—HYDRONEPHROSIS—CALCIUM CHLORIDE AS A HEMOSTATIC—DEATH FOLLOWING MERCURIAL INJECTIONS — INFANTILE MONGOLISM — TRACHEAL CELLULITIS—HYGIENE OF THE SKIN AND SCALP.

PARIS, February 1, 1906.

THE chair of clinical therapeutics of the Faculté de Médecine of Paris, supported by the generosity of the Duc de Loubat, has been provided with an incumbent in the person of Dr. Albert Robin. At the Académie de Médecine Dr. Chauffard presented a very interesting report on the medicolegal aspects of the therapeutic use of the Roentgen rays. The author first referred to the marvelous discovery now ten years old made by Professor Roentgen of Würtzburg, and traced the development of its application to medicine. First came radiography, then direct examination on the fluorescent screen, or radioscopy, and finally the adaptation of the various facts discovered to the science of radiotherapy. After having recalled the important observations of Sabouraud, who showed that ringworm could be cured by the localized use of Roentgen rays, the author described the application of the rays to the treatment of tumors. Side by side with these conquests the author reviewed the frequently serious injuries that may be produced by radiotherapy, among which are destruction of the leucocytes, atrophy of the ovarian follicles or of the testicle, and consequently azoospermia in man and sterility in woman. Chauffard concluded that the therapeutic use of the rays should be exclusively restricted to physicians. Radiology should form as indisputable a branch of medical science as any other of its departments. The interests of the public even more than those of the physician demand that the application of radiotherapy shall be reserved exclusively to members of the profession. The conclusions suggested by the commission and presented by Dr. Chauffard having been put to a vote were unanimously adopted by the Academy.

Tuffier and Mauté communicated a report on the study of the index of refraction of the blood serum in surgical affections. Their observations were made by means of the Zeiss immersion refractometer, which has the advantage of requiring only a single drop of serum. In the normal state and at the temperature of 17.5° the index of refraction of human serum varies from 1.3491 to 1.35205. The authors' researches conducted on over 200 cases have led them to conclude as follows: The index of refraction of the blood serum decreases after considerable hemorrhages, the fall being proportional to the amount of blood abstracted. Fasting lowers the index of refraction but little during the first twenty-four hours, but if the abstinence from food is protracted it may reduce the figure considerably. In cases of extensive burns this method permits the estimation of the variations of the fluid portion of the blood. In double renal disease the index of refraction is ordinarily lowered, although the results are not always consistent. Excepting in various forms of nephritis and extensive loss of blood the index of refraction has but little relation to the nature of the disease, but its systematic observation in operative cases has shown that it has considerable prognostic value. On this account alone the method should be further investigated, especially as it is simple, rapid, and gives accurate results.

Lop of Marseilles read an interesting paper concerning the transmission of infectious diseases by school books. He paid particular attention to the prophylactic measures necessary to prevent the dissemination of contagious diseases in this way, especially in schools. He pointed out the necessity for disinfecting all the books in common use at the end of each school year, while every book belonging to a pupil who contracted a contagious disease should be disinfected at once. In the author's experience the most satisfactory method of disinfection was found to be that of Micquel, in which formaldehyde is used.

At its first session in December the Société de Chirurgie elected Professor Mauclaire as honorary member. The following officers were elected for 1906: *President*, Dr. Segond; *Vice-President*, Dr. Quénu; *Secretaries*, Dr. Michaux and Dr. Chaput; *Treasurer*, Dr. Arrou; *Registrar*, Dr. Broca.

Dr. Pierre Delbet presented a specimen of hydronephrosis due to kinking of the ureter over an abnormal artery. The specimen very clearly showed the angulation of the ureter over the ectopic vessel. While there was no doubt in regard to the rôle played by this abnormal vessel in causing the hydronephrosis it seems that this structure acquired its etiological significance only through a prolapse of the kidney.

Toubert read an interesting communication on the use of calcium chloride as a prophylactic against hemorrhage. On account of its harmlessness, its efficiency, and simplicity of application the author considered that calcium chloride was an excellent hemostatic, being rather preventive than curative. Toubert gives his patients on one or two evenings before the operation a solution containing three grams of calcium chloride, which is to be taken in small doses two or three times during the day, the last dose preceding the operation by only a few hours. By this means the author believed that the coagulability of the blood was distinctly increased in all his patients, and he never encountered secondary hemorrhage or hematoma even after operations which predisposed to those conditions. Calcium chloride therefore seems destined to serve not only the physician and the specialist, but also the surgeon, in both major and minor surgery.

At the Société Médicale des Hôpitaux Le Noir reported two cases of death in the course of antisyphilitic treatment by subcutaneous injections of gray oil. An interesting discussion followed this paper. Brocq was of the opinion that, in spite of these unhappy results, injections of gray oil should not be discarded, for he believed that this was the best routine method for treating syphilis in workingmen and those whose occupations were confining. The method was efficient, sure, and without pain. It was necessary, however, to take certain precautions before applying it, and never to use it on persons whose teeth were in poor condition or on those having defective kidneys. Thibierge also considered that injections of gray oil were the best method of treatment for syphilis, but he never made use of them in treating patients with poor teeth or having albuminous urine. Legendre said that he had observed accidents indiscriminately after all mercurial injections, most often in using calomel, but also after injections of gray oil, of biniodide, and of cyanide. The complications were observed in cases in which there had been no preliminary analysis of the urine.

Comby demonstrated an interesting case of infantile Mongolism. The patient was a boy of two and a half years who, although of white race, suffered from Mongolian idiocy. His round face, brachycephalous head, and his narrow and slanting eyes gave him the appearance of a Chinese baby. His skin was yellow, dry, and flaccid, the limbs flabby and the penis rudimentary. Although the child was very backward and could not talk, it was able to recognize its parents; it was restless and fretful, and could be quieted only by music. The child presented all the characteristics of Mongolism, a variety of congenital idiocy first segregated by Langdon Down. All idiots of this class presented the same type of Asiatic facies, which was noticeable from birth. The author believed that this anomaly was frequent, and said that in two years he had observed it twelve times. The children were always feeble and predisposed to tuberculosis. It had often been noticed that such children were the latest comers in a numerous family, and maternal old age and exhaustion had been cited as an etiological factor. In the author's cases most of the mothers had been young, but all had suffered great sorrow during their pregnancy. Dupré emphasized the importance of maternal emotion in the etiology of the affection, especially when the period of stress occurred during the later months of pregnancy. Ballet observed that in certain cases myxedema was associated with the symptoms of Mongolian idiocy.

At the Société de Pédiatrie Broca and Dufour reported a case of tracheal cellulitis observed in a nursling that had been intubated in the latter stages of croup. The description of this case gave rise to a lively discussion on the advantages of intubation compared with those of tracheotomy. The conclusions were that although intubation had marked advantages, the method was not to be recommended, for it predisposed to complications, and besides it was impossible to diagnose juxtalaryngeal abscesses before making a tracheotomy incision.

Jacquet delivered an interesting discourse on the hygiene of the skin and hair before the Société de l'Internat. He pointed out the important rôle played by the nervous system in the pathology of the skin and scalp. He explained that falling of the hair, especially, was occasioned by a productive impulse of new hair growth through the functional stimulation of the epithelial follicles. The loss of hair taking place in severe fevers was also due to cutaneous stimulation and formed part of the general functional stimulation which was often manifested under these conditions by unexpected growth of the individual. The rôle of nervous stimulation was well demonstrated in the occurrence of baldness, which was a disease of the intellectual. He indicated that baldness had become more common among women since they had been devoting themselves to a greater degree to mental work. Jacquet insisted that in dermatology the principal etiological rôle was not played by microbes and their toxins, but by an excess of functional stimulation. The hygiene of the skin would therefore involve the hygiene of the body as a whole, especially alimentary hygiene, and the hygiene of the scalp would be hygiene of the brain.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

A MEDICAL SCHOOL IN MANILA—DISCUSSION ON TROPICAL ULCER—THE CHOLERA SITUATION—PERSONAL.

MANILA, P. I., December 30, 1905.

THE first step toward providing a medical education for Filipinos, based upon American ideas, was taken by the Commission when it passed Act 1415, November 25, 1905. The Act is entitled: "An Act Establishing a Medical School and Defining the Manner in Which It Shall Be Controlled and Conducted."

Section one provides that there shall be established in Manila a medical school, to be known as the Philippines Medical School. It is to be organized under the laws governing corporations.

Section two provides that the powers of the corporation shall be vested in a body to be known as the Board of Control for the Philippine Medical School. It shall consist of the Secretary of Public Instruction, the Secretary of the Interior, one member of the Philippine Commission, and one who shall be designated by the Governor-General. The Dean of the faculty shall also be an ex-officio member of the Board of Control.

Section three provides that the Board of Control shall have the power to receive endowments and bequests, and to provide for their disposition; to nominate to the Governor-General for appointment, the faculty of the school, and to fix the duties and responsibilities of its members; to confer the degree of Doctor of Medicine upon such persons as are recommended by the faculty; to make to the Commission recommendations in regard to the condition of the school, and to present estimates for appropriations necessary for its maintenance.

Section four provides that upon the request of the Board of Control, heads of departments and officers of the Insular Government are authorized to furnish apparatus and supplies as they may be required, and to detail employees for duty in the medical school, and employees so designated shall perform these services and the time so employed shall count as part of their prescribed service to the Government.

Some preliminary work has been done with a view to starting the medical school at the beginning of the next school year. The Director of Education has now about twenty Filipino students undergoing a preparatory course in medicine, and it is hoped that they will be able to pass the necessary entrance examinations for the Medical School.

There is porobably no feature with regard to the sanitary condition of the Islands that is fraught with more importance than the supplying of adequately and properly trained Filipino medical men to take positions in the provinces. At the present time there is a woful lack of properly trained physicians for that work.

At the regular December meeting of the Manila Medical Society no formal papers were read, and instead a discussion took place on tropical ulcers, in which Dr. Cook spoke upon their etiology, Dr. McDill, their clinical aspect, and Dr. Woolley, their pathology. No particularly new points were brought out in the discussion.

The cholera situation in Manila still continues to be favorable, and an average of only about one case per week is reported. The disease in the provinces is not spreading very far from Manila, still, it continues to shift its base, and an average of 15 to 20 cases per day are reported.

Dr. J. D. Long, Passed Assistant Surgeon, U.S.P.H. & M.H. Service, who has been on duty in the Quarantine Service, during the past three years, in Manila, has been appointed Assistant Director of Health, in the Bureau of Health, and will assume his duties January 1, 1906.

Assistant Surgeon Snyder, U.S.A., who has been acting as Quarantine officer at the port of Jolo, has been detailed for duty in Manila, and his place will be taken by Major Ewing, U.S.A.

FOOD PRESERVATIVES.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In your esteemed publication of January 27 you have an interesting article on the Pure Food question. This question is certainly a serious one. There is no doubt about much of our food being adulterated with cheap, inferior, and sometimes dangerous adulterants. To regulate such conditions a national pure food law is certainly essential. However, in our immense country we have to ship edibles from the Atlantic to the Pacific, and from the Gulf to the Great Lakes; consequently some method of preserving perishable articles of food must be resorted to. We could dispense with adulterated and artificially colored foods, as adulterating food certainly lessens its food value and coloring matter does not enhance the food value, so why should not both be abolished?

When a substance is used to preserve an article of food it can hardly be deemed an adulterant, as it is not used to lessen the food value, but to maintain the full strength and to keep the article preserved in a comparatively fresh condition. When we use the ordinary methods of preserving food, however, such as salt, sugar, smoke, vinegar, alcohol, etc., we do not keep the food in a fresh condition, and such substances have a tendency to destroy the natural flavor of the article preserved. We could not preserve all of our meats, fish, fowl, and oysters, with the ordinary methods, neither could we preserve them satisfactorily with cold storage, as it has been proven time and time again that cold storage does not entirely prevent the process of decay. Many cases of ptomain poisoning have been traced to articles of food that have been kept in cold storage too long. The practice of shipping fowl, fish, crustaceans, etc., containing their entrails should be prohibited, as articles in such a condition have decomposed matter stored in them that make conditions favorable for the propagation of toxic germs. There is no greater menace to the health of a nation than tainted, partially decomposed articles of food. Conditions favorable for the growth of germs could be overcome by using some method to keep food comparatively fresh and healthful. So if we want to protect the nation from poisonous germs, we cannot do so by enacting laws prohibiting the use of preservatives.

In studying the food question thoroughly and investigating the various kinds of preservatives used, I have already learned that borax and boric acid are used more extensively on fresh meat and fish than any other substances. And I have learned that while they are condemned by Dr. Wiley, Chemist of the Bureau of Agriculture, they are pronounced innocuous by Prof. Chittenden of Yale. Prof. Chittenden made exhaustive experiments to determine the effect of borax and boric acid on the digestive organs, and concludes his report by saying that when borax and boric acid are used to preserve food they have a tendency to accelerate the flow of gastric juices, thereby aiding instead of retarding digestion. England has laws permitting the use of borax and boric acid. She demands that her meats be packed in borax and her butter preserved with boric acid. In looking up statistics, I find we shipped to England during the fiscal year of 1903 and 1904, hams, 169,703,849 pounds; bacon, 196,822,713 lbs., a total of 366,526,562 lbs., all of which were preserved with borax; and during the fiscal year of 1904 and 1905 England imported 407,794,000 pounds of butter, all of which was preserved with boric acid. To preserve the hams it required 6,750,000 pounds of borax; to preserve the butter it required 2,038,970 pounds of boric acid, making a total of 8,788,970 pounds of borax and boric acid practically consumed in England annually. England has been consuming foods preserved with these substances for years, and she has found by practical experience that these preservatives are beneficial to health instead of detrimental. I can see, therefore, no reason why they should be condemned as poisonous preservatives in this country.

H. H. LANGDON.

TICK FEVER.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In the MEDICAL RECORD of January 20 I find mention of "spotted fever," "tick fever," or "mountain typhus." In all cases I have treated during the months of February, March, April, and May (I have not seen it during other months) in the past three years there has been distinct evidence of tick infection. In all cases there has been an inflamed area of about two inches diameter, and some sloughing. In some I found the heads of the ticks. I have had about twelve typical cases.

LOUIS HOWE, M.D.

CODY, WYOMING.

Progress of Medical Science.

Boston Medical and Surgical Journal, February 15, 1906.

Serious Head Injuries and the Indications for Operative Treatment.—The salient points in the conclusions presented by B. Sachs are as follows: (1) If there is extensive skull injury, particularly in the parietotemporal region, evidence of the splintering of the inner table, of foreign body or persistent intracranial hemorrhage, one should operate immediately. (2) In comminuted fracture the surgeon must decide whether or not the danger of infection will be increased by surgical procedure. (3) These questions must all be decided on purely neurological lines. (4) The great point to decide is whether the brain has or has not been tangibly injured, and, if so, whether the injury is accessible or not. Symptoms of increasing intracranial pressure may call for trephining if lumbar puncture or other simpler methods do not afford relief. (5) Conservatism is advisable even in accessible injuries. Hemorrhages are often

absorbed and inflammatory processes often recede. (6) In determining the gravity of brain injury, disturbances of cardiac and respiratory action, of vesical and rectal control, and the condition of consciousness are the most important symptoms. They are the manifestations of increasing intracranial pressure, and of other serious injury. Recovery from coma, however slight, after twenty-four, forty-eight, or seventy-two hours, is encouraging; deepening coma is of grave significance. The behavior of the pupillary reflexes is of no special value in deciding the question of operative interference. (7) If the symptoms point to distinct focal lesion, although years may have elapsed since the initial injury, surgical measures must be adopted, providing only that the lesion be accessible. (8) If the external injury points to one site and the symptoms to another, consider both; attack the site of external injury first, but try to reach the other as well.

Head Injuries.—Morton Privei would decide the question of operative intervention upon the following points of evidence: (1) The nature of the blow. A person may have a severe fall, and yet the head may not be severely injured, while, of course, the reverse may be the case. If a person falls from a height, striking his head, presumably the brain is lacerated; but a fist blow or a fall on the street might merely break an artery without bruising the brain; (2) general symptoms, as coma, stertor, pulse, temperature, etc.; (3) neurological indications; (4) surgical evidence of skull injury. Increasing experience leads the author to advise conservatism in operating.

Indications for Operation in Head Injuries.—Assuming the absence of contraindications such as heart or kidney lesions, etc., W. N. Bullard would advise operation in compound fracture of the outer surface of the cranium. It is safer in adults to operate also in simple fracture of the external surface. All depressed fractures should be operated on. We should operate in (1) all cases with symptoms of middle meningeal bleeding; (2) in adults in whom unconsciousness after injury lasts more than twelve hours, and when we can clearly assign the unconsciousness directly to the injury; (3) when persistent unilateral convulsions (referable directly to the injury) follow in an adult; (4) the question of operation arises in cerebral or meningeal paralysis immediate following a severe head injury. Hemiplegia or monoplegia under such conditions are not absolute contraindications. They may be referable to causes which have produced the fall on the head itself; (5) inequality of the pupils occurring immediately or shortly after injury is an indication in favor of operation; (6) temperature: Immediate and persistent rise of temperature (not otherwise accounted for) occurring after severe head injury suggests contusion or laceration of the brain. Rise of temperature within twenty-four to seventy-two hours after injury, especially if the patient is unconscious, suggests secondary encephalitis or inflammation of the brain; (7) pulse: Slow pulse suggests compression, hence, with other symptoms, is an indication for operation. Rapidity of the pulse in itself does not contraindicate operation. Weakness of the pulse may be a contraindication.

New York Medical Journal, February 10, 1906.

A Case of Cerebrospinal Meningitis Indicating that It May Be of a Contagious Nature.—H. A. Hare records the case of a man of 23 years who was taken suddenly ill with severe headaches and soon developed opisthotonos, violent rigidity of the cervical muscles, and loud cries. Large doses of diphtheria antitoxin and morphine had no effect, and he died of circulatory and respiratory failure forty-four hours after the initial seizure. Forty-eight hours later his attending physician (who had called Dr. Hare in consultation) came down with mild symptoms suggesting the same malady. He grew worse, however, and died eight hours after the development of distinct meningeal symptoms, and nineteen hours after his first symptoms appeared. The original patient had visited, four days before his illness commenced, a territory in another State in which the disease was then present. A medical student who helped to care for him developed a violent tonsillitis with severe constitutional symptoms. Dr. Hare also developed, four days after seeing his patient, chill, fever, and severe pain in the neck, back, and limbs. In his own case he used 4,000 antitoxin units as a prophylactic, knowing that it would probably do not harm, and might act as a preventive.

The Dietetic Treatment of Chronic Diarrhea.—Max Einhorn divides chronic diarrhea into the following forms: (1) Diarrhea due to chronic intestinal obstruction; (2) nervous diarrhea; and (3) chronic diarrhea, due to catarrh of the small intestine principally, sometimes also accompanied by a catarrhal condition of the colon. Most forms of chronic diarrhea principally involve the small intestine; and this group can again be subdivided into (1) primary catarrh; (2) catarrh depending upon abnormalities of gastric secretion; and (3) catarrh accompanying ulceration. In all the dietetic desideratum is the selection of foods which are non-irritating and leave little residue. They must not be cold when ingested. In (1) liquid food is essential (milk, raw eggs, broths, and meat juices). In (2) a generous diet may be allowed, except that all laxatives should be avoided. The patient must be encouraged in his efforts to suppress the constant desire to defecate. In (3) in achylia gastrica proteids should be excluded. A distinctly vegetable diet is called for. Gruels, milk, kumyss; later bread and butter are permissible. Later a little meat may be added. All the solids should be finely divided. If the diarrhea is due to hyperchlorhydria a richly albuminous diet is necessary. Alkalies should be given. It is not essential to give hydrochloric acid in achylia gastrica. In the cases due to trouble in the small intestine, we must exclude such substances as fruits, salads, highly-seasoned dishes, etc., which encourage peristalsis, but see that the patients take enough food. Egg albumin water may suffice for a few days. Then one may go on to eggs, decoctions of barley, oatmeal and rice porridges, bread, butter, and meats. Cold foods must be avoided. If the diarrhea persists tannic acid, or even an opiate, may be necessary.

Some Displeasing Results of the Mastoid Operation.—J. A. Stucky's deductions are based on an experience of 128 operations, fifteen of them being radical. Of the entire number 40 per cent. had nearly all the external evidences of pus. Five of these were of the Bezold variety, and the pus had burrowed down into the neck under the cleidomastoid muscle. In nine others the abscess had ruptured or been opened by the attending physician and sequestrum of the cortex had sloughed out of the wound, leaving the vitality of the soft parts so much impaired that much of it had to be removed, making healing by granulation a necessity. These cases resulted in ugly scars, some of them being remedied by plastic operations. Some atresia of the canal was the result in three cases, due to faulty packing and neglect of after-treatment. Facial paralysis due to neuritis in three cases, one following a second operation for osteomyelitis, one in which the vertical portion of the canal was destroyed by the disease leaving the nerve exposed, and one in which the nerve was injured by too forcible use of the curette during the operation. All of these patients completely recovered in from two to four months. In the fifteen radical or Stacke-Swartze operations the results have been all that could be desired, except that in five cases obstinate granulations and lowered vitality prolonged the after-treatment to a degree annoying and discouraging to both patients and physician. In all of these patients has the hearing been improved by the operations, and the author has had no fatalities. One of the most surprising after-results has been in the improvement in the general health of the patients, especially in the chronic cases. He has operated in only five acute cases, patients who have not had any previous pain or suppuration in the ear, the majority suffering from acute exacerbation upon chronic condition.

The Early Diagnosis of Gastric Cancer.—H. Weinstein comments on the different significations attached to the term "early" diagnosis. He considers it advisable to regard with suspicion all cases of patients above forty wherein with a history of previously healthy digestive organs, dyspeptic symptoms, and persistent loss of appetite, especially of animal food begin to be complained of. All such cases, when coupled with rapid loss of strength, require the most careful analysis, and the physician must not consider his duty performed until he has either proved or disproved the existence of malignant disease. In this connection the family history of the patient with regard to carcinoma must be carefully inquired into. A history of more or less recent traumatism in the region of the stomach must be taken into consideration, as a trauma may give an impetus to the development of a neoplasm in predisposed individuals. The motor and secretory functions of the stomach must be carefully examined. One should test for an absence of hydrochloric acid and the ferments which with the presence of lactic acid and the Oppler-Boas bacillus will speak for carcinoma. The presence of hydrochloric acid and absence of lactic acid fermentation, however, does not exclude malignancy, for in ulcus carcinomatosum we usually find hyperchlorhydria; the history of a preexisting ulcer will lead in the right direction. Occult hemorrhages occur in the stomach even in the early stages of the disease, and it is not unusual to find blood and pus on careful microscopical examination of the stomach contents. If, in addition to these signs, a blood examination shows an absence of digestive leucocytosis, a diminution of the red corpuscles, and a reduction in the proportion of hemoglobin, the diagnosis of cancer is almost certain.

American Medicine, February 10, 1906.

Puerperal Infection.—Ellice McDonald reviews the lesions of puerperal infection and directs attention to the three forms infection may take, toxemia, septicemia, or

pyemia. The frequency of the various infecting organisms is considered and the subject of sapremia reviewed. Six cases illustrative of the more unusual terminal forms of puerperal infection are reported. The cases are discussed separately and general conclusions are deduced that, while streptoccoccus is the most common infecting organism, other types of infection not infrequently cause severe symptoms. The term puerperal infection should be broadened to include infection elsewhere than in the uterus and the nature of location of such lesions should be recognized before any operative measures are undertaken. The harmfulness of curettement is dwelt upon.

Facts About Eating.—John Warren Achron says that where a sick headache (mixed migraine), biliousness, hyperacidity, duodenal ulcer, spastic constipation, chronic rheumatism, bronchitis, asthma, postnasal catarrh, eczema, acne, pruritus, neuralgia, insomnia, cerebral hemorrhage, arteriosclerosis, Riggs' disease, frequent urination, physical weariness (that tired feeling), obesity in some of its forms, and many other ailments and conditions are present there is or has been overeating of some sort, too much eating of one kind of food, meals are taken too near together, there is "nibbling" between meals, the food taken is not being properly insalivated, it is being washed down by liquids in excess taken with it, or after meals independently of the food ingested. The question is not so much one of individual foods as it is one of control in habits of eating, and of restriction of food to the actual physiological needs of the system. If diseases are to be cured or unorganized exudates absorbed, the restriction must be carried to the point where the system lives for a time and in part, at least, on the waste locked in its tissues and carried in the blood. This is simply a matter of "cleaning house," and the food, like the sail of a boat, must be trimmed flat enough to allow the body to weather the conditions present. Starches and sugars are the foods that common experience has shown are the most likely to clog the system. Meats or other foods require to be controlled, depending upon the indications.

Abscess of Antrum Causing Symptoms of Acute Articular Rheumatism.—H. K. Wheelock reports a case of pneumococcic infection of the antrum of Highmore, which developed polyarthritis with general symptoms of acute articular rheumatism. The patient had been suffering from a "cold in the head" with free discharge from the right nostril from the beginning of the attack. The frontal sinus was washed by means of a cannula, and on the following day she had a severe chill which was followed by a rise in temperature and she was confined to her bed for twenty-four hours. Later she had severe pain in right knee, left elbow, and shoulder. This pain and tenderness lasted about forty-eight hours. The second day following the chill, the temperature was 100° F. Pus from the first was to be seen between anterior end of middle turbinate and external wall of right naris. Exploratory probe puncture was made and two teaspoonfuls of thick pus worked out, which showed pneumococci. Following the flushing of the antrum the naris was free from pus. Pain returned on the following day, when the antrum was again flushed and about one teaspoonful of pus brought away. Patient made a rapid recovery following the last lavage and regained the weight which she had lost during her illness.

Cleansing of Milk Vesseis.—A. H. Stewart, in his efforts to obtain clean milk for Philadelphia, has made a thorough investigation of the prevailing methods for cleansing milk vessels. He found that many dealers entirely neglect this important procedure, while a majority of those who have a regard for cleanliness employ methods which fail to accomplish the desired result. He cites the best results obtained from an examination of milk vessels in a number of establishments and commends a method used by a small percentage of dealers. It consists of washing the bottles and cans by a powerful stream of some hot washing powder solution with rapid solvent power pumped into the bottles which are then rinsed with boiling water. This method cleanses 95 per cent. of the bottles perfectly. Tables showing the results obtained from an investigation into the comparative values of washing powders as regards the destruction of germs, rapidity and thoroughness of action, and expense entailed by their use are given. Sodium carbonate would seem best for cleansing purposes, for besides meeting all the requirements it has the advantage of being cheapest in price. Dr. Stewart asserts that the filling of dirty milk bottles on the streets by the men who deliver milk in wagons and the return of cans to the farm without any washing whatever are matters which should receive prompt attention. He makes a strong plea for the establishment, under supervision of the Bureau of Health, of can washing and cleansing buildings where all cans may be sterilized before they are sent to the farms. The advantages of such a scheme would be: (1) Saving of milk which is now destroyed by rapid fermentation due to infection from dirty cans. (2) Saving of ice used to preserve milk which is eventually lost. (3) Saving of time. (4) Abolition of the use of preservatives. (5) Saving of space for the storage of empty cans. (6) Increased sale of milk due to restored confidence in its purity. (7) Saving of the lives of thousands of children who are now fed on fermenting milk, the food value of which has been lost. (8) Prevention of epidemics of dysentery and other milk-borne diseases.

Journal of the American Medical Association, February 17, 1906.

Ulceromembranous Angina and Stomatitis.—This affection, usually occurring in young individuals and due to a peculiar fusiform bacillus, commonly associated with a spirillum, is described in detail by G. H. Weaver. The bacillus is an obligate anaërobe, appearing usually as a long, slender rod, thickened at the middle, and with pointed ends. It stains best with carbolfuchsin, but also with Loeffler's methylene blue and with anilin water solution of gentian violet. It does not stain by Gram's method. It is found most abundantly in the early acute stages of the disease and decreases as recovery advances. The spirillum or spirochete is slender and delicate, presenting usually three or four turns. It stains uniformly but less intensely than the bacillus, does not stain by Gram's method, and is usually actively motile. The association of the two organisms seems fairly constant. Weaver finds no support for the view that the two organisms are identical. The proof that they are the essential etiological factors of the disease, he says, is not complete; further study of pure cultures may be expected to give more light on the subject. There is rarely much, if any, fever. The lesion is sometimes only accidentally discovered, the symptoms are so insignificant. Usually the local condition is observed after from one to five days of premonitory signs, lassitude, throat discomfort, etc. Its chief symptoms are dysphagia, salivation, and fetid breath, but these are not constantly present. With the oral and tonsillar lesions there may be swollen glands, earache, and nasal discharge. Various complications, albuminuria, herpes, gastroenteritis, noma, were observed by Weaver, and many others have been reported by different observers. He thinks that the disease is very prevalent, but often overlooked because of its mildness. Contagion has been observed, but close contact seems to be required. The diagnosis is made by the finding of the organisms, but care must be taken to exclude diphtheria by proper culture methods, as the diphtheria germ may be associated with the fusiform bacillus. The prognosis is usually good, though in severe cases gangrenous processes and noma of the face may develop. According to Vincent and Richardier, the prognosis is bad in children. A tendency to recur has been observed. As regards treatment, some authorities speak highly of the use of potassium chlorate. Various antiseptic solutions have been used and tincture of iodine is spoken of with favor by some. Silver nitrate locally has been employed. Weaver thinks that peroxide of hydrogen applied directly to the seat of the disease is most useful because of the anaërobic nature of the bacillus. At the Memorial Institute for Infectious Diesases it was used successfully followed by a solution of carbolic acid and sulphocarbolate of zinc, 5ss and 5ii respectively, in a six-ounce mixture.

Surgical Treatment of Goiter.—R. W. Hardon advocates the surgical treatment of goiter and reports three cases in which partial thyroidectomy was performed for Graves' disease with good results. His conclusions are, in substance, as follows: 1. Every irregular tumor of the thyroid, no matter how small, should be removed, since in this way only can we save the lives of those having malignant growths. 2. Every regular tumor of the thyroid causing symptoms other than mere deformity, should be resected when after a few months' medical treatment the growth is not checked and no improvement is produced. 3. Avoidance of needless traumatism, care of the stump, free drainage, and salt solution to keep the blood and lymph vessels full and to prevent absorption from the wound are points especially mentioned in connection with the operation.

Mucocele of the Appendix.—A. Stengel reviews the literature of reported cases of cysts of the appendix and remarks on their probably different pathological characters. Some of them are undoubtedly mere inflammatory retention cysts, caused by the occlusion of the intestinal communication of the appendix. He has seen a number of such, all of moderate size and evidently of inflammatory origin. Exceptionally they may be of such size and may have lost the characters of inflammatory retention cysts to such an extent as to be classified as cysts and to cause doubt as to their mode of formation. Mucoid and possibly colloid carcinomatous cysts, however, are comparatively rare; he has met with but one instance—that which he reports—in about 2,000 autopsies. It occurred in a woman, aged fifty, who died of rapidly developing acidosis after prolonged

glycosuria. In this case, while the nature of the process is still somewhat uncertain, closer study led him, contrary to his first impression that it was simply a dilated appendix filled with mucoid material unusual in amount and character, to suspect, from the presence of irregular acini, epithelial tubular structures, and collections of epithelial cells scattered throughout the gelatinous substance that the condition might be allied to colloid cancer.

Acute Abdominal Symptoms in Typhoid Fever from Inflamed Mesenteric Glands.—R. S. Rowland reports two cases of typhoid fever illustrating the occasional difficulties of diagnosis. Both patients had pronounced abdominal symptoms; in one, perforation was suggested by the symptoms of pain, collapse, etc.; in the other, appendicitis and tuberculous peritonitis were both suspected as complicating a possible typhoid fever, the characteristic signs of which had not yet been fully developed. In both cases, operation revealed, not the conditions suspected, but inflamed mesenteric glands. Rowland finds little positively stated in the literature on this complication of typhoid fever. His conclusions are given as follows: 1. "In some of the cases in which exploration showed no cause for the symptoms, these were probably due to changes in the mesenteric glands. 2. Some of the recoveries which have been reported from intestinal perforation without operation probably occurred in cases of this sort in which the symptoms simulated perforation. 3. McCrae's suggestion that pain and acute abdominal symptoms might be due to enlarged mesenteric glands is credible, and further observation and study will probably show that this condition is not, relatively speaking, a rare complication in typhoid fever."

The Lancet, February 3, 1906.

Some Points in the Treatment of Heart Failure in Diphtheria.—C. Bolton lays stress on two points: (1) prevention of cardiac failure, and (2) rest, both mental and physical. The first embraces the earliest possible administration of antitoxin. It leads directly to the neutralization of the toxin. The latter becomes very speedily combined with the particular tissue affected by it and is then neutralized only with great difficulty by the antitoxin. In human diphtheria the toxin is not suddenly poured into the blood as in an experiment, but it is poured slowly, and it is therefore possible to neutralize it by large doses of antitoxin. It must be remembered that extensive fatty degeneration of the heart may occur in the short space of three days. Moreover, the remedy must be given in large doses. Most authorities agree that the initial dose should be from 4,000 to 6,000 units. The author goes so far as to say that in a severe case as high a quantity as from 12,000 to 24,000 units should be given at once, and if on the next day there is no improvement in the nasal discharge or separation of the membrane, or if the latter has extended, the injection should be repeated. He finds no greater liability to rashes, joint symptoms, etc., with large doses than with small ones. The matter of rest is all important. In the acute stage of the disease, when the heart is failing, sudden death may occur at any time as the result of the strain of vomiting or jumping up suddenly in bed. If the acute stage is survived and the patient left with signs of heart failure due to changes not in themselves sufficient to kill him, strain may again determine sudden death. On the other hand, if he have no signs whatever of heart failure, the strain of getting up too early in the progress of the disease often initiates it, thus bringing into evidence the latent heart weakness.

Eucalyptus Oil as a Vermifuge in Ankylostomiasis.—The virtues of this remedy are extolled by L. P. Phillips, who advocates the use of a saline purge in the evening to be followed early the next morning by one-half of the following mixture: Eucalyptus oil, 2.50 grams; chloroform, 3.50 grams; castor oil, 40 grams. In half an hour's time the second half of the mixture is taken. The patient is kept in bed, fasting, until the bowels act. Should any depression occur after the first dose, the second is omitted. In young boys and feeble, anemic patients the dose is divided into thirds and given at intervals of twenty minutes. It can be repeated, an alternate days. As a rule from three to four liquid stools follow. In 44 cases this plan was wholly successful. That the chloroform is essential is shown by the fact that in three cases in which the ova were present chloroform water was given by mistake (instead of the spirits) and the result was negative. In 26 additional cases the results were styled "efficient," while in 33 others the result was either unknown or negative, the treatment being employed in some for diagnosis or else a mixed treatment was adopted. Cardiac depression from the remedy as above described is rare.

Aberrant Vaccinia.—The case of M. E. Paul was that of a woman whose baby had been vaccinated with good effect two weeks before she came under observation. On her own chin, just below the border of the lip, was a large mature vaccine vesicle. The lip was swollen and very painful. Considerable constitutional reaction was present. The sore began its usual course without incident. The author regards the baby's finger-nail as the most probable instrument of inoculation.

Dermoid Tumor of the Mediastinum in a Child of Two Years.—The patient of G. Carpenter presented signs of compressed lung on both sides, and nearly a pint of straw-colored, opalescent fluid was withdrawn from the chest. The latter became quite resonant behind but remained absolutely dull in front. The front bulged considerably and occupied more of the right side than the left. The tapping was repeated with temporary benefit. The child was later brought to the hospital, cyanotic and moribund, and died shortly afterwards. Autopsy gave the following findings: Both pleuræ were healthy. In front of the right lung was a mass of the size of a fist. On incising this from six to eight ounces of clear fluid escaped; inside the cyst was some cheesy material with a few hairs lying at the bottom. The rest of the tumor felt hard. The right lung was much compressed. The mass removed was roughly spherical. In addition to displacing the heart slightly to the left it projected into the anterior mediastinum and reached to the inner surface of the left lung. The right lung was compressed into an airless strip which lay behind; the compressed lung did not occupy more than one-half of the space of the lung on the opposite side. On section the tumor was chiefly composed of a considerable number of cysts, the largest of which was the cyst which had been opened. Between the cysts running from above downwards was a partition composed of fat and fibrous tissue and containing a few calcareous masses. Most of the cysts contained a gelatinous material of a light brownish color. In the large cyst which had been previously opened were sebaceous-looking material and short hairs.

British Medical Journal, February 3, 1906.

At What Age Should a Cleft Palate Be Closed?—R. W. Murray prefers as a general rule to postpone operation until the child is between two and three years of age, and advocates complete closure at one operation. He reasons as follows: In order to obtain a well-formed and freely movable soft palate, excess of cicatricial tissue must be avoided. If the cleft of the soft palate is closed during infancy, this can only be done by means of a turnover flap, which of necessity leaves a raw surface to granulate, and will ultimately cause some contraction and stiffening of the parts. If, on the other hand, the operation upon the soft palate is postponed until the child is about two years of age, there is more tissue to work with, and it is generally possible to fashion a good soft palate and uvula by paring the edges of the cleft and uniting them in the middle line. Excess of cicatricial tissue is thus obviated, for union takes place by first intention. Though he has of recent years operated upon the hard palate during infancy and closed the cleft of the soft palate later, he is not convinced that the subsequent powers of articulation in these children have been better than in those in whom the complete operation has been postponed until the second or third year.

Preliminary Note on the Cytorrhyctes Luis (Siegel) and the Spirochæta Pallida.—A. MacLennan found that in two cases of primary syphilis the serum from the cleaned sore and that sucked up from an enlarged inguinal sore, failed to reveal a single spirochete. The preparations from the chancres were, however, crowded with minute organisms of uniform shape and character. Such an organism might be described as a somewhat thick, irregular band bent upon itself more or less so as to almost make a circle. The films from the gland (in one of the cases) showed equally numerous bodies, but in a further stage of development. In them the band had opened out and the "head" had enlarged. The proportion between "head" and "tail" varied in different cases, but various gradations were present in the same film. In another preparation from a hard chancre the same forms were seen, together with a set still further developed. Between these latter and some of the *Spirachæta pallida* there was not much difference, and the inference from the consideration of these various forms has given rise to the opinion that the *Spirochæta pallida* was merely a development of the more minute series. Further, a number of round, deeply-stained bodies were noted in considerable numbers, and some of these had invaded the red corpuscles. These bodies were filled with small granules, and when a red cell containing such an organism had been burst the débris thrown out was very like a collection of the small organisms seen in the preparations from the chancres and glands of the cases referred to. Other forms seemed to show the breaking up of the spirochetes. Their bodies are similar to those figured by Siegel, who claims specificity for them, declaring that the spirochete was merely saprophytic. MacLennan believes that one is merely the development of the other the *Spirochæta pallida* being merely one phase in the life history or perhaps a part only of the organism during one stage of its development.

The X-Ray in the Treatment of Ringworm.—G. Sichel records his results in the ray treatment of ringworm and

parasitic alopecia. He has had in all 102 cases. Of these 67 are still under observation, and no therapeutic claim is made concerning them. Of the remaining 35 cases, 30 were ringworm and 5 alopecia areata. Of the alopecia areata cases 4 are recorded as cures and 1 case was just beginning to grow but did not attend again to be seen. Of the 30 ringworm cases, 11 were cured, 10 were failures, and 9 ceased to attend before a definite result could be pronounced. Out of the whole 102, the author saw one case of ray dermatitis which he fears will result in permanent baldness. Disadvantages of the method are, the necessity of a specially trained nurse, danger of burnig, and the difficulty of regulating the ray dosage. Full details of treatment are given in its paper. Most of the failures belonged to the following type of case. There is no burn and the patient suffers no harm, but has all the bother and expense of the treatment, and still suffers from ringworm. These are cases in which the hair comes out patchily, and small scattered islets of infected hairs are still left dotted about all over the scalp. One is afraid to repeat the treatment for fear of inducing dermatitis, and when the hair grows again on the denuded areas it becomes reinfected from the older spots. When the new hair has grown considerably it is often of a different color from the old.

Aural Cases in General Practice.—Stephen Paget details some of the clinical methods he has found of service in examining ear cases. He discusses the various topics, from the standpoint of the general practitioner, and points out the fallacies of some of the conventional text-book statements. Nothing essentially new is brought forward, but the tone of the article is practical and sensible.

Berliner klinische Wochenschrift, January 29, 1906.

The X-Ray Examination of the Stomach and Its Application to the Diagnosis of Carcinoma.—Holzknecht describes observations on healthy and diseased stomachs by means of *x*-ray examinations made after the ingestion of food containing considerable quantities of subnitrate of bismuth. It was found that much more satisfactory results were obtained if the observations were made directly by means of the fluoroscope than if photography was resorted to, because the phenomena produced were so varied in nature that continued inspection was necessary in order to obtain any insight into their import. One conclusion reached was that a stomach normal in size and position is very rarely seen. The normal type of stomach is rather small and is so placed that the pylorus forms its lowest point. The form most often observed, on the other hand, is much larger and through descent of the greater curvature exhibits a rise at the pylorus. The author explains the formation of this type of stomach by the almost universal relaxation and atrophy of the anterior abdominal muscles, induced by the habits of muscular inactivity of the present age. In this way the lower part of the abdomen becomes protuberant and the pad of intestines on which the stomach normally rests drops down a considerable distance. The extremities of the stomach being fixed, while it is to a certain extent deprived of its natural support, the organ, which was not constituted for the purpose of standing a strain of this sort, undergoes gradual dilatation in the direction of its long axis. In other words, this is the beginning of gastroptosis, a condition which usually receives attention only when present to a marked degree, whereas naturally all intermediate stages must also exist. The author describes the phenomena attending the filling of the stomach with food as visible on the fluoroscopic screen, and explains the manner in which observations of this sort may be used for the detection of nonpalpable carcinomata. Owing to the infiltration of the gastric wall with the tumor masses, easily recognizable abnormalities in the behavior of the stomach when bismuth food is poured into it can readily be detected. Its functional efficiency can also be tested by inclosing bismuth in tiny bags of goldbeater's skin, which are swallowed by the patient. As soon as the bag is digested by the gastric secretions the bismuth escapes, an act which is readily discernible with the fluoroscope. The author considers that this method is superior to the somewhat similar one of Sahli.

Clinical Observations on Anemia.—Rollin has made an extensive series of parallel observations on the blood and stomach contents in various gastric disorders, and has reached the conclusion that a certain relationship exists between gastric efficiency and the condition of the blood. In cases of hyperacidity there is a reduction in the nutrition of the blood, and clinical experience has shown that the administration of dog's gastric juice was of great advantage in cases of severe anemia, probably owing to the high acidity and bactericidal power of the secretion thus introduced into the stomach.

Münchener medizinische Wochenschrift, January 30, 1906.

Intraperitoneal Shortening of the Round Ligaments.—Steinbüchel is a warm advocate of the operation devised by Menge for the correction of retrodisplacements of the uterus. The operation consists in forming a loop in the round ligament of each side and suturing the apposed surfaces of the round ligament with a continuous stitch of catgut, taking care to pass the needle only superficially, so as to avoid constriction of the main artery of the ligament. The folded portion of each ligament is stitched to the front of the uterus, as is also the fold formed in the broad ligament. Steinbüchel reports six cases treated in this way with excellent results. Most of the patients were also suffering from some other abdominal condition, which rendered a laparotomy necessary, and in one instance the patient had been suffering so severely from pain as the result of a previous ventrofixation that the laparotomy was undertaken in order to liberate the uterus from its adhesion to the abdominal wall. Menge's operation was performed and the patient completely restored to health. Steinbüchel also speaks well of the modified Alexander-Adams operation, in which the abdomen is opened by a transverse suprapubic incision, for the purpose of freeing the uterus from any adhesions, and the round ligaments are made accessible in the inguinal canal from within. Menge's operation, however, does not require any particular type of incision, can be quickly performed, and does not divert the line of traction of the round ligaments from its normal direction.

The Excretion of Uric Acid and the Xanthin Bases in the Treatment of Leukemia with the Roentgen Rays.—Rosenberger made a series of analyses of the urine in two cases of leukemia and one of pseudoleukemia that were treated by means of the *x*-ray. His observations led him to conclude that exposure to the Roentgen rays alters the amount of uric acid excreted, but a similar effect has not yet been observed in other diseases. At the beginning of the treatment the exposure to the rays increases the amount of uric acid excreted. A decrease in the amount of uric acid excreted in the course of the treatment is a favorable prognostic omen, but in relapses the amount of uric acid rises again. The excretion of the xanthin bases is increased during the treatment and its after-effects. In the case of pseudoleukemia treated, the *x*-rays apparently were not without effect on the spleen, though no curative tendency was noted and the uric acid excretion was not modified.

A Fistula Between Stomach and Lung.—Loeb's patient was a man of twenty-eight years, who for twelve years had complained of severe paroxysms of coughing, coming on usually after meals. Large amounts of expectoration containing food particles were coughed up. Examination of the expectoration showed that it was of an intensely acid reaction, and that it contained lactic acid and large numbers of long bacilli of the varjety common in the stomach in retention. After taking a meal followed by a capsule of methylene blue, the patient coughed up large amounts of blue-stained food. The author says that this is the only case on record in which a patient has survived such a condition for any considerable length of time. *X*-ray examination showed the existence of a cavity of considerable size in the right lung, which is also a rarity, as in practically all of the other reported cases the communicating opening has been situated on the left side. In the present case it is difficult to arrive at a satisfactory conclusion in regard to the etiology of the condition. One presumption is that a more or less latent ulcer at the duodenal end of the stomach perforated, and escaping material found its way between adhesions around the free edge of the liver along the anterior abdominal wall to the diaphragm, which it perforated and so gained access to the lung. On the other hand, the process may have traveled the other way, and have started in the lung either as a gangrenous destruction of tissue or as the result of a congenital malformation, though there is not a great deal of evidence in favor of either of these views. The patient's general condition was fairly good, and he was able to work, so that for the present at least no attempt at treatment, which would of necessity be surgical, was made.

Deutsche medizinische Wochenschrift, February 1, 1906.

Vaginal Cesarean Section and the Surgical Era in Gynecology.—Hofmeier deprecates the present tendency to resort to radical surgical measures in midwifery on the slightest excuse. He criticises Dührssen's operation of vaginal cesarean section both on the score of its name and of its advisability as a more or less routine measure, and suggests that it would more correctly be called colpohysterotomy. The modern trend of obstetric authorities toward what they term the surgical era in obstetrics is considered inexpedient by the author because the procedures advocated by this school are, as they themselves admit, unsuited to the usage of the general practitioner. The results obtained by the newer operative methods of delivery are not so vastly superior to those attending the older, more conservative measures as the obstetric surgeons would have us believe, and it is unwise to teach students a system which they will not be able to employ in practice. The guiding principle of the older obstetricians "first the mother, then

the child" is in danger of being reversed by these surgical enthusiasts who are almost on the point of exclaiming "first the child, then the mother." The difficulty is that the ethical considerations involved have been formulated by men, and it is more than doubtful whether if there were any likelihood of these rules being applied to their own persons it would not seem to them more desirable to save the life of the mother, even at the risk of the child's death, with the expectation that at a future period she would again be in a position to pass through the ordeal of labor more successfully.

Sahli's Desmoid Reaction.—Kaliski describes a series of observations undertaken to test the reliability of Sahli's new method of investigating gastric efficiency by the use of small bags of rubber tissue containing a small amount of potassium iodide or methylene blue and tied with a strand of fine catgut. Pills of this sort were given to thirty-nine healthy individuals, seven of whom were subsequently subjected to an examination of the stomach contents after a test breakfast. Six cases of hyperacidity, six of anacidity, two of suspected carcinoma, and three of subacidity were all tested by Sahli's method and by the chemical examination of a test breakfast. The results showed that the simple method of Sahli was perfectly reliable, and furthermore that certain diagnostic conclusions could be drawn from the length of time required for the reaction to be completed. In cases of hyperacidity a deep blue coloration of the urine appears in four to seven hours; if the acidity is normal the reaction appears in from seven to twelve hours and the urine first passed is faintly blue. In subacidity or motor insufficiency the reaction does not appear until the next day.

Acute Goiter as a Result of Seasickness.—Rosenfeld says that although the occurrence of acute goiter is not mentioned as a possible consequence of seasickness in monographs devoted to this subject, he believes that it is not a very rare complication. He describes one instance occurring in a woman of forty-five in whom in the course of about ten days the tumor reached the size of the fist and then, as the seasickness was overcome, decreased gradually in size until, at the end of three weeks, it had almost entirely disappeared. On the same voyage a much slighter degree of the same manifestation was observed in an older woman, and the author speaks of having had a similar experience related to him by another patient as having occurred on a previous voyage. Rosenfeld assumes that owing to the local hyperemia occasioned by the seasickness a true parenchymatous hyperplasia of the gland took place in the first patient. The slow subsidence of the swelling showed that it could not have been due merely to congestion or distention of the follicles with secretion.

French and Italian Journals.

Pityriasis Versicolor, Tuberculous Dermatomycosis.—Piéry and Renoux have carefully performed various experiments on animals by inoculation with scales taken from human beings. They conclude that the inoculation of the guinea-pig with the scales of pityriasis versicolor is capable of determining tuberculosis in this animal. Inoculation, however, either with the products of the scrapings of the skin of phthisical patients (whose expectoration swarms with Koch's bacilli), or with the scales of any other dermatosis occurring in the course of phthisis, does not cause tuberculosis in the guinea-pig. Pityriasis versicolor which is observed the most often in tuberculous patients does not occur without distinction in the course of various clinical forms of pulmonary tuberculosis, but almost always in the case of abortive pulmonary tuberculosis only. The writers think that the results of their work justify the conclusion that pityriasis versicolor ought to be considered as a probable tuberculous dermatomycosis. This theory constitutes an argument in favor of the saprophytic nature of the hacillus of Koch, and the mycotic nature of tuberculosis.—*Lyon Médical*, January 21, 1906.

Syphilitic Pseudorheumatism.—M. L. Galliard refers to work done a few years ago in his clinic on syphilitic pseudorheumatism. Three patients who had not suffered from rheumatism before the syphilitic infection had polyarticular disturbances coincident with mucous and cutaneous lesions of secondary syphilis. These three patients recovered quite rapidly under specific treatment. More recently, Galliard has had under his care a young man twenty-five years old who had had, before the appearance of a syphilitic chancre, a severe and prolonged acute attack of polyarticular rheumatism and gonorrhea, with no signs of pseudorheumatism. Afterwards, when pseudorheumatism developed, it presented the symptoms of a serious illness. The writer gave intramuscular injections of benzoate of mercury, and from the third day the fever subsided; on the fourth day the joints became so much better that no further anxiety was felt. On the ninth day, after eight injections of the benzoate of mercury the rheumatism being completely cured, and the syphilitic cutaneous lesions being improved, the patient insisted upon leaving the hospital. The writer has no knowledge of any recurrence of the trouble.—*La Tribune Médicale*, January 20, 1906.

Hnntington's Chorea.—Anglade recently cited the case of a patient suffering from Huntington's chorea. This infection developed at the age of thirty-five years after violent emotion. Both the mother and grandmother suffered from the same disease. The patient herself died in dementia ten years after the beginning of her illness from meningeal hemorrhage. Examination of the nervous system showed nothing of interest below the brain. There may have been slight sclerosis but it was not distinct. The dura mater and pia mater were abnormal. The nerve cells appeared intact but there was a decrease in the number of cells. The most interesting point of this examination, however, was the presence of nuclei surrounded by protoplasm which was scarcely visible. Anglade believes these to be the elements of neuroglia, and by his investigations he has been able to establish the fact very distinctly. The most important lesion in this case was noted at the knee of the internal capsule with very intense reaction in the ventricular region. —*Journal de Médecine de Bordeaux*, January 21, 1906.

Nervous Sequelæ of Epidemic Cerebrospinal Meningitis.—Chailly, in his recent thesis, has given the results of his observations of three cases of epidemic cerebrospinal meningitis which terminated in recovery. This recovery, however, was not complete, since the patients all suffered from nervous troubles after their departure from the hospital. One became maniacal, believing that he was persecuted; another was afflicted with hemiplegia; the third suffered from spasmodic paraplegia. Lumbar puncture had revealed the presence in each case of the meningococcus. Chailly is convinced that it would be a matter of interest to follow up the history of such patients, apparently cured for several years.—*La Presse Médicale*, January 20, 1906.

Clinical Studies of Raw Milk for Infants.—Concetti finds that he is able to preserve uncooked milk for a long time in the laboratory, provided it is obtained under aseptic precautions. It is not necessary that it shall be absolutely free from germs, since there are many non-pathogenic germs which cause no change in the milk. Valgussa has invented an apparatus by which the milk may be taken asceptically from the cow and preserved at a low temperature up to the time that it is bottled. It has been found that carbonic anhydride, while not destroying the bacteria, serves to keep the milk in a condition of relative asepsis, retarding the development of the germs contained in it. Syphons have been made that are easily sterilizable, in which the milk is placed, and then they are charged with carbonic acid gas, like seltzer bottles. The milk will keep at least five days under this method of preparation. The gas soon disappears and leaves the milk with its ordinary taste and consistency. The small amount of carbonic anhydride remaining keeps the phosphates in solution, and the casein is more digestible than when the milk is untreated. The milk need not be divided into feedings in separate bottles, and none need be thrown away because it has been open to the air, as it may be discharged from the syphon as needed; thus it is an economical method of preservation. The chemical, physiological, and physical properties of the milk remain unchanged.—*Rivista di Clinica Pediatrica*, December, 1905.

Use of Gloves in Obstetrical and Gynecological Work.—Vincenzo Caliri discusses the advisability of the use of gloves in surgical and obstetrical, as well as gynecological work. He has made careful experiments as to the value of the different methods of sterilization that may be used in preparing the gloves, and he gives us the information that nearly all disinfectants, corrosive sublimate excepted, do not so thoroughly disinfect that broth cultures of various microorganisms may not be obtained from them. Two methods are successful: that of washing the gloves for a few minutes in soap and water, and then using a one to one hundred solution of corrosive sublimate, and that of live steam in the autoclave. Alcohol is not successful, and at the same time the gloves are injured. He also experimented as to the injury to the gloves by the disinfection, and found that all except the soap-and-water method rendered the gloves softer and made them permeable to bacteria. Sensibility is very much diminished by the use of gloves, whether thin or thick, and hence they are a disadvantage in fine manipulations. His conclusions from all his work are that, notwithstanding their disadvantages, gloves should be used by all assistants at an operation except the surgeon-in-chief, these gloves covering the entire hand and forearm. Those of the surgeon may leave the last two phalanges uncovered to aid him in feeling the parts operated on.—*Annali di Ostetricia e Ginecologia*, November, 1905.

Book Reviews.

Stoffwechsel und Stoffwechsel Krankheiten. Einführung in das Studium der Physiologie und Pathologie des Stoffwechsels für Aerzte und Studierende. Von Dr. Paul Friedrich Richter, Privatdozent und Laboritoriums-vorstrand am Poliklinischen Institut an der Universität Berlin: August Hirschwald, 1906.

Medicine has made such extensive inroads into the several provinces of chemistry that it is almost impossible for the average practitioner to follow the reasoning of some of the advanced workers in the departments of metabolism, nutrition, excretion, etc., and their perversions. The present volume of almost 400 pages is regarded by the author as an introduction to the study of these complex problems, and though it is rather more thorough-going than its subtitle might lead one to believe, the subject is dealt with from the standpoint of the beginner and with sufficient simplicity to be really helpful to the average reader. The first 130 pages are devoted to the metabolic process of the healthy body, and in the remainder of the book the disorders of assimilation and excretion that attend disease are discussed. The volume closes with a short outline of the various technical methods used in determining nitrogen, uric acid, ammonia, etc. The only criticism that suggests itself is that the author might easily have made his work of much greater value to the class for whose benefit it was ostensibly written by introducing a little more of the clinical element and suggesting some of the practical deductions in regard to treatment that may be drawn from the more or less theoretical material set forth at such length.

A Text-Book of Physiology for Medical Students and Physicians. By William H. Howell, Ph.D., M.D., LL.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Illustrated. Philadelphia and London: W. B. Saunders & Company, 1905.

In writing a textbook of physiology at the present day, an author is confronted with a bewildering number of researches, many of which are contradictory in their conclusions. One of the guiding principles, therefore, which must be borne in mind while planning a work of this character, is the need of judicious elimination. It would be simpler, perhaps, to present all the facts and theories on a given subject and permit the reader to draw his own conclusions. This would add greatly to the bulk of the volume, however, without affording a satisfactory presentation of the subject to the medical student. It is preferable to sift the evidence at hand and then to emphasize those conclusions which seem to be most justified by experiment and observation. In following out this method, a certain amount of trust must necessarily be reposed in the author, and in the present instance it does not seem to be misplaced. Dr. Howell's presentations of the fundamental facts of physiology is characterized by a simple lucid style and good judgment, which is especially noteworthy from the complexity of the subject. The arrangement of the matter is as we usually find it in the other text-books, but in addition to the older and more established views, the more modern aspects, even if still unsettled, are incorporated. This is fortunate, as the advances made in certain allied branches, especially in chemistry, have quite upset some of the theories formerly held to be incontrovertible. The student is made to realize that the subject of physiology is constantly expanding, and in order to accentuate this growth, historical résumés are introduced at suitable intervals throughout the book, which add greatly to its general interest. Dr. Howell's work can be safely recommended as a complete, well-written, modern book on an important subject.

Manual of Pathology, Including Bacteriology, the Technic of Postmortems, and Methods of Pathological Research. By W. M. Late Coplin, M.D., Professor of Pathology and Bacteriology, Jefferson Medical College, Philadelphia, etc. Fourth Edition, Rewritten and Enlarged. Philadelphia: P. Blakiston's Son & Co., 1905.

This book presents a somewhat interesting history of growth, it having been developed from a series of abstracts of the author's lectures in pathology. Part I of the book is devoted to technic and is sufficiently complete for all practical purposes, while in the appendix there are additional chapters on bateriological manipulations, and on the microscopical examination of urine and of sputum. The remaining parts of the work are given up to general and special pathology. Its scope is quite extensive and many topics are included which are not ordinarily found in books of this class. The style is concise, pleasing, and easily read. The new matter presented in accordance with the progress made by pathological science is stated to have enlarged the text one-third, and corresponding to this there has also been an increase in the number of illustrations, most of which are new and original. Another innovation consists of references in foot notes to other articles, which will afford additional information to the reader on the subject under discussion. The author intends the book neither as a treatise, nor a work of reference, but as a manual for the laboratory and post-mortem room.

Gallstones and Their Surgical Treatment. By B. G. A Moynihan, M.S. (Lond.), F.R.C.S. Second Edition, Revised and Enlarged. Philadelphia and London: W. B. Saunders & Company, 1905.

It is but recently that we reviewed the first edition of this authoritative work, dealing with a subject which only a few years ago was accorded a short chapter in works on general surgery—and a rather larger one in treatises on internal medicine. The patient with gallstones was, within the memory of even the younger practitioners of medicine, purely a "medical case." He was treated with alkalies or olive oil, or sent to Vichy, with the hope that his recurrent attacks of colic would be relieved, and a suggestion that he was a legitimate subject for the operating table would have been accredited to unwarranted surgical pretensions. Now, largely through the influence of the author of this work, the Mayos, and others, gallstone disease is recognized as a surgical affection. That Mr. Moynihan's treatise has met with ready appreciation is shown by the fact that the first edition was exhausted in a year. This has given the author the opportunity to revise his work and to add to it a review of the extensive literature that has sprung up in this brief period. This second edition does not differ materially from the first in essentials. The general principles remain the same, but the necessity of a new edition has given the author an opportunity to review what is new in his subject and to include in his work a section on the congenital abnormalities of the bile-ducts and gall-bladder.

The Management of a Nerve Patient. By Alfred T. Schofield, M.D., Author of "The Unconscious Mind," "The Force of Mind," "Unconscious Therapeutics," etc. Philadelphia: P. Blakiston's Son & Co., 1906.

There is much in this book—the whole book, in fact—that can be read with profit by the practitioners of medicine, not only the one who has to deal with the subject of functional nervous or mental disease, but the general practitioner as well. The subject matter of the monograph is the power of the unconscious mind, which the author regards as the same as our familiar old *vis medicatrix naturæ*. He complains bitterly of "the waves of psychic nonsense that flood this country [Great Britain] from America," by which we suppose he means Eddyotism, but urges his readers not on that account to reject the great fact of the influence of the unconscious mind upon the body. He shows how the physician may stimulate the unconscious mind to action and so bring into play this potent aid in the cure of functional nerve disorders. It is not only in functional troubles, however, that the mind is potent in its influence upon the body, for Zola was on the right track, in his tiresome "Lourdes," in surmising that the unconscious mind could influence for good the reparative processes even in such a purely physical disease as lupus. To the broad-minded physician, who is only anxious to cure his patient by any means, whether recognized as "legitimate" or on the confines of the illegitimate, because indefinite and not yet clearly understood, this book contains many suggestions which may be acted upon with benefit to patient and physician alike.

Vorträge und Aufsätze über Entwicklungsmechanik der Organismen. Herausgegeben von Wilhelm Roux, Heft 1. Leipzig: W. Engelmann; New York: Paul B. Hoeber, 1905.

It is Roux's intention to issue in collaboration with other investigators a series of treatises under the above title, each of which shall present in complete form certain aspects of organic development of which the essential facts have been fully established. The first issue is by the editor of the series, and deals with the "mechanism of development as a new branch of biological science." Roux believes that most works on embryology do not pay sufficient attention to this subject, and this book may serve as an addition to their text. The writer may be in reality regarded as the originator of this branch of biological investigation, which endeavors to ascertain the cause of morphological development by experimental methods. He claims, moreover, that physical and chemical laws are in themselves sufficient to account for all vital processes. The book is divided into two parts, the first of which presents a general discussion of the subject, and the second, the larger, includes a more detailed exposition of the various items, and is intended for those more especially interested in the subject. The book is intended for the biologist, and yet there are many suggestive points in the author's conclusions, which, although somewhat startling, may prove of value to those interested in the problems connected with human embryology.

Society Reports.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Twenty-ninth Annual Meeting, Held at the Academy of Medicine, New York City, December 28, 29, and 30, 1905.

(Special Report to the MEDICAL RECORD.)

THE PRESIDENT, DR. WILLIAM T. CORLETT OF CLEVELAND, OHIO, IN THE CHAIR.

Address of the President.—Dr. CORLETT, in his opening address, said that while the study of dermatology in this country was awakening keener interest and was better taught than ever before, yet the character of the teaching in many schools left much to be desired. To become efficient in dermatology the concentration of clinical material was important. What a veritable Mecca of dermatology might be built up in New York City if the various diversified interests were concentrated under one well-organized institution. This applied with even greater force to clinical material in the lesser centers of population. To make these desirable changes, wise and liberal endowments were necessary. Their effect was already apparent in certain quarters, and there were hopeful signs in others. The almost general recognition of dermatology in the curriculum was an epoch in the evolution of American medical education.

Additional Observations on the Roentgen Rays in Dermatology.—Dr. HENRY W. STELWAGON of Philadelphia, Pa., said that at a meeting of the Association two years ago he gave a résumé of his experience with the Roentgen-ray treatment of various cutaneous diseases. Practically repeating, to some extent, his former conclusions, he could say now, in the light of wider experience, that we had in the *x*-rays a valuable addition to our therapeutic resources, but it was by no means a measure that should be used indiscriminately, or be permitted to supplant other methods equally useful but without possible deleterious effects; that its application should be extremely cautious and conservative in non-malignant dermatoses, and excepting in extremely obstinate cases it should be used more as an adjunct than as the sole remedy; that in malignant diseases it could be used somewhat boldly and often with the prospect of cure, or at least distinct amelioration; but that even in such diseases it might often be more advantageously employed as a helpful and supplementary measure than as the sole method of treatment.

Dr. CHARLES W. ALLEN of New York City said that, in order to learn what the *x*-rays would do in dermatology, it was necessary to rely very largely upon personal experience. He employed the *x*-ray as a therapeutic agent more than ever before, and he liked it better for certain things, but he had become convinced that it must be used with greater care than hitherto. In the treatment of acne the effect of the rays should be expended on the deep follicles and glands, and no effect on the superficial tissues was necessary. The latter could be taken care of with antiseptic washes, etc., but for the deeper structures the rays were necessary. In the treatment of skin diseases and cancers he now tried to combine different methods, so as to get the best results from all.

Dr. L. A. DUHRING of Philadelphia, Pa., said he had employed the *x*-ray treatment in psoriasis for a number of years, and, on the whole, his experience with it had been very unsatisfactory. He agreed with Dr. Allen that in order to obtain the good effects of the rays, it was not necessary nor advantageous to produce a determatis. His experience with the rays had led him to fear the superficial changes in the skin produced by that agent.

Dr. JOHN A. FORDYCE of New York City said that in the treatment of malignant disease of the face he would emphasize the value of curetting the lesion before using the *x*-rays. This was especially true in dealing with the fungating forms of epithelioma. The curettage in these cases was not done as thoroughly as it was when that measure was relied upon without the use of the rays.

Dr. EDWARD B. BRONSON of New York City said that some of the best results he had seen produced by the *x*-rays had been in acne, not of the simple type, but in cases where other methods had been unsuccessfully tried. In such cases that would not stay cured it was essential to produce a decided modification of the follicles, and that he had seen done by the *x*-rays. The proper method was to produce just the necessary degree of atrophy; a degree that would not destroy the integrity of the skin, and yet would check its morbid activity. In such cases he knew of no remedy that would compare with the *x*-rays.

Dr. JAY F. SCHAMBERG of Philadelphia, Pa., said that in the treatment of superficial epitheliomata the application of the *x*-rays was almost universally successful, and in dealing with deep, rodent ulcers about the canthus of the eye, with an excavation of tissue, it was the treatment *par excellence*, and would often effect a cure where nothing short of an extensive surgical operation would have achieved the same result.

Dr. THOMAS C. GILCRIST of Baltimore, Md., said that, as the *x*-rays possessed no bactericidal powers, we had to depend upon their destructive action for a cure of the disease to which they were applied. In acne his results had been good, although some relapses had occurred. In lichen planus he had seen cures effected very much quicker by this method than by any other with which he was acquainted. In dealing with rodent ulcer and various other forms of malignant tumors he was in favor of doing a preliminary curettage, as the *x*-ray did not have much effect upon the growth until the hard edge was broken down.

Dr. S. POLLITZER of New York City said sufficient evidence had been adduced to prove that the *x*-ray was a valuable addition to our therapeutical resources, and the discussion regarding it was in general harmonious as to its indications and advantages. The speaker briefly reported two cases of epitheliomatous growths of the mucous membrane, both of which did very badly under the *x*-ray treatment.

Dr. FRANK H. MONTGOMERY of Chicago, Ill., said that after a considerable experience with the *x*-ray he had never had any bad results from it in the way of troublesome dermatites or burns.

Dr. Stelwagon, in closing, said that in his *x*-ray work he always tried to employ the lowest current that would answer the purpose.

A Case of Tropical Ulceration Involving the Nose, Pharynx, and Larynx, with Histological Findings.—Dr. JOHN A. FORDYCE of New York City and Dr. W. F. ARNOLD, Surgeon U. S. Navy (Retired), reported this case. The lesion was a chronic ulceration of six years' duration, involving the upper lip, nares, lacrymal duct, nasopharynx, and larynx, in a negro, a native of Panama. The condition, at first thought to be syphilitic, was influenced in no manner by large doses of iodide of potassium or of mercury, given internally, hypodermically, or by inunctions. Tuberculin injections caused no reactions, nor could tubercle bacilli be found in the secretions. An inoculated guinea pig developed a folliculitis with secondary ulceration, but showed no signs of tuberculous infection. Histologically, the condition in the patient was a granuloma resembling tuberculosis.

A Case of Meralgia Paræsthetica.—Dr. JAMES C. WHITE of Boston, Mass., reported a case of a man, 55 years old, who became aware in July, 1905, of abnormal sensations in the skin of the outer lower two-thirds of the right thigh after an ordinary walk of four or five miles. The feelings were of a tingling nature. From that date, on standing or walking, this region became the seat of a variety of perverted sensations, described as tingling, tenseness, and tearing of formication. Sometimes there were darting sensations, like the bursting of a bubble; some-

times a dull, deep pain or ache when the leg was tired. They often began as a glowing sensation in the part. They generally ceased on sitting or lying down, but might recur in such attitudes on overstretching or violently twisting the leg. Deep pressure with the hand over the part might bring them on, and the patient was always aware of something wrong there on standing or walking. The sensations were felt every day, and interfered with his habits of exercise. They were somewhat on the increase. There was no pruritus nor feeling of constriction in the affected surface. On inspection it was apparent that the area complained of corresponded strictly to the distribution of the cutaneous filaments of the external cutaneous femoral nerve. The skin presented to the eye no marked differences from the corresponding region of the opposite thigh. The patient was of good habits, and had shown no indications of a faulty nervous system previously, and there had been no manifestations of organic or functional disorder, with the exception of a feeble digestion. Meralgia paræsthetica, Dr. White said, was the condition always confined to the position occupied in this case. It was first described some ten years ago by Bernhardt and Roth, and now found a recognized places in the works on nervous affections, although, apparently, of rare occurrence. We had little definite knowledge of the causation of this well-defined affection. The morbid conditions with which it was said to be often associated, namely, neuritis, tabes, rheumatism, gout, and alcoholism, were absent in the case reported by the speaker. The condition seemed to be outside the control of remedies, although massage had given partial and temporary relief in some cases.

The Incubation Period of Syphilis—Dr. Abner Post of Boston, Mass., read this paper. He stated that our knowledge of the incubation period of syphilis depended upon clinical observation, and the results of experimental and accidental inoculation. Clinical observation in this matter had the peculiarity that it was based not upon what the observer saw, but entirely upon the statement of the patient. Very few patients were at all reliable as observers: they forgot exact dates and were influenced by their own preconceived ideas. After reviewing the sources of our knowledge on this subject from accidental and experimental inoculations, Dr. Post said that the recent inoculation of the anthroid apes with syphilitic virus has opened up a new field of study. Metchnikoff and Roux had reported twelve successful inoculations, seven from human syphilis, upon chimpanzees. In these cases, the incubation period was reported in six as 22, 22, 26, 33, 35, and 37 days, an average of between 29 and 30 days, and none below 22 days. These inoculations of the human virus on chimpanzees were recognized as successful by Fournier and other competent authorities. So far as experimental inoculations were concerned, we were justified in believing that the true chancre always had a period of incubation; that the period varied within rather wide limits; that it never fell below 15 or possibly 13 days, and that 42 days was the widest limit.

Dr. J. Nevins Hyde of Chicago, Ill., said that with the aid of his colleague he had recorded more than 200 cases of physicians and nurses who had been the victims of extragenital chancres, and the period of incubation in those cases coincided very closely with the conclusions reached by Dr. Post.

Dr. Ravogli said that the incubation period probably depended to some extent upon the quality of the virus or germ with which the patient became inoculated.

Dr. Robert W. Taylor of New York City said that the cases on record in which the incubation period of syphilis was given as ten days or less were perhaps based upon the presence of broken down herpetic vesicles, which were mistaken for beginning chancre. At all events, the question would probably soon be definitely settled by the results of the experiments that were now being carried on with the anthropoid apes.

Notes on the Treatment of Epithelioma by Means of Caustic Potash.—Dr. Arthur Van Harlingen of Philadelphia, Pa., presented his communication in which he said that: (1) A certain number of cases of epitheliomata of the skin were best treated by means of caustic potash. (2) These cases comprised the small, well defined, pearly lesions, from one-half to one or even two centimeters in diameter, chiefly found upon the face and adjacent parts. (3) Larger lesions were best treated by the *x*-rays, but here caustic potash might be used to soften and dissolve the horny epithelium, and perhaps in some cases as an adjuvant. (4) In cases treated by caustic potash the use of the *x*-rays did not appear to hasten the process of reparation or to modify the cicatrix resulting from cauterization.

Dr. M. B. Hartzell referred to the beneficial effect of caustic potash and pyrogallol in the treatment of epithelioma. He first applied the caustic potash, removing it as soon as it began to smart, and then applied a 40 to 50 per cent. solution of pyrogallol.

Dr. Stelwagon said that one great advantage of the caustic potash in these cases was the rapidity of its action.

The Life History of a Case of Mycosis Fungoides.—Dr. George T. Jackson of New York City said that through the courtesy of Dr. F. S. Hope of Portsmouth, Va., he had had the privilege of noting the clinical course of a case of mycosis fungoides from its beginning to its lethal ending. The patient was an unmarried woman, 33 years old, a native of the United States, and a person in easy circumstances. Her father had an epithelioma of the face, and many of his family were rheumatic. When Dr. Jackson first saw the patient, on November 27, 1901, she was spare of flesh but in general good health. The only organic disease of which she complained was an irritability of the bladder. The duration of the mycosis was exactly five years. The disease first showed itself in August, 1900, and the patient died in August, 1905. The eruption was muscular and scaly, with but slight tendency to tumor formation. Pruritus was a marked feature of the case. The application of the *x*-rays controlled the pruritus and caused a disappearance of the lesions, but produced excessive hyperpigmentation of the skin and possibly an exfoliative dermatitis. A chronic enteritis caused death by exhaustion.

The Evolution of a Case of Mycosis Fungoides Under the Influence of Roentgen Rays.—Drs. Charles J. White and Frederick S. Burns of Boston, Mass., in this paper gave the clinical details of a case of mycosis fungoides in a man 52 years old, a farmer by occupation, and a native of the United States. The patient had always enjoyed the best of health until the onset of his present illness, in March, 1902. He was admitted to the Skin Ward of the Massachusetts General Hospital on June 26, 1905, and three days later, *x*-ray treatment was begun. The treatment was repeated at intervals of two or three days, until August 21, twenty-three exposures being given in the course of fifty-four days. The total time of the exposures was eight hours and twenty minutes. Under this treatment, in addition to local and internal remedies, the skin lesions rapidly disappeared, but coincident with their disappearance the patient suddenly developed severe toxic symptoms. He gradually lost flesh and strength, and died on September 7, 1905, apparently of toxemia. The autopsy showed a fibrina-purulent bronchitis and pleuritis; hyperplasia of the spleen and dilatation of the heart, with evidences of streptococcus septicemia, which was attributed to the formation of bed sores in the terminal stage.

Dr. George T. Elliot of New York City said he could recall several cases of mycosis in which, as in Dr Jackson's case, the fatal result was due to a chronic enteritis. In one instance, where he secured a post-mortem examination and examined sections of the various organs microscopically, he found metastases in the liver, spleen, and lungs. The question naturally arose whether the terminal diarrhea was due to a metastasis or not.

Dr. George H. Fox of New York City said the consensus of opinion was that cases of mycosis fungoides were greatly presented by the author and his colleague, Dr Ernest L.

method of treatment, he had seen the itching disappear in an incredulously short space of time, and the same was true of the tumor formation.

Dr. Charles W. Allen mentioned a case in which the treatment was begun in the premycotic stage, and the patient was now entirely well.

Dr. L. Duncan Bulkley of New York City reported several cases of mycosis fungoides that were much benefited by the *x*-ray treatment. He expressed the conviction that while this treatment relieved the symptoms, the disease steadily progressed toward its unfavorable outcome.

The Egg-Shell Nail.—Dr. J. Nevins Hyde of Chicago, Ill., said his paper was an additional contribution to the one presented by the author and his colleague, Dr. Ernest L. McEwen, at the preceding meeting of the Association, entitled, "On the Relation of Certain Dermatoses to Each Other and to Changes in Vascular Equilibrium." The title selected did not refer to any brittleness of the nail tissue, but was chosen because of the exact presentation in the nail-plates of the purplish-white hue visible on the inner face of the shell of a hen's egg. Four cases were reported as illustrative of this modification of the nutrition of the nails. The following features were common to all: The patients were all young women, below the standard of sound health. In none was there any distinct affection of the circulatory system. All exhibited marked interference with the stability of the vascular equilibrium, and all suffered from hyperidrosis of the hands and feet. In some of the cases there were distinct changes in the hue, not of the nails only, but also of the skin of the hands and feet, the bluish and purplish shades being recognized in the integument of those organs at some distance from the nails, and also in the nail-beds. The nails were thin, but never coarse in structure. There was a distinct tendency in all to curving of the nail-plate away from the axis of the bed. The changes in the nail were thought without question to be intimately associated with the hyperidorsis.

A Case of Pityriasis Rubra of Hebra's Type.—Dr. F. H. Montgomery and Dr. Peter Bassoe of Chicago, Ill., reported the case of a man, 46 years old, a farmer, whose family history was unimportant with the exception of the fact that one sister had died of tuberculosis. The patient had typhoid fever seven years ago, and for twenty-seven years had suffered more or less from asthma. For fifteen years—with the exception of six years during which he had abstained wholly—he had used alcoholic stimulants periodically to excess, indulging in sprees of three or four days duration on an average of once in ten days or two weeks. His skin disease began in February, 1904, as a large blister on the plantar surface of the right foot. This spread to almost the entire sole of the foot, and in a few days an erythematous and slightly vesicular eruption appeared on the left foot, then on the buttock, and ultimately almost the entire surface of the body was covered with a red and slightly scaling rash. For the first few weeks this gave rise to severe itching and burning. Soon after the exanthem became generalized, exfoliation was pronounced, and for the past sixteen months the skin had remained simply red and scaly, showing no other type of lesion. Two months after the eruption became generalized, the pubic hairs fell out. Those of the eyebrows were also lost, but returned. The plantar and palmar surfaces showed a markedly thickened skin. The patient died on August 22, 1905. This case, in common with others, in its clinical history and in the autopsy findings, suggested that a primary infection of the skin was the cause of, first, the cutaneous disorder; and, second, the general marasmus. It had to be admitted, however, that the etiology and patholgy of pityriasis rubra were as yet unsolved problems. The relation of the disorder to tuberculosis, suggested by Jadassohn, was not at all clear. It was highly improbable that this cutaneous affection was a rare manifestation of so common a disorder as tuberculosis, but it was quite conceivable that the marasmus accompanying the skin disease might render the patient more liable to tubercular infection. The necropsy finding did not throw much light on the nature of the skin affection, and also left doubt as to the cause of death. The conditions found suggested a terminal infection, either uremic or toxic, secondary to the skin disease.

Dr. John T. Bowen of Boston, Mass., reported a typical case of pityriasis rubra of the Hebra type coming under his observation, in which all the classical symptoms were present, up to the final stage of atrophy, which lasted for a number of years. This entire subject, he said, was still much confused.

Dr. Charles J. White of Boston, Mass., said he was present at the autopsy in the case of pityriasis rubra referred to by Dr. Bowen, and in the lung a small abscess was found which the pathologist thought was possibly tubercular.

Dr. William A. Pusey said that while many cases of generalized exfoliative dermatitis were very similar clinically, we were hopelessly confused so far as their etiology was concerned.

Dr. George T. Elliot thought that an absolute distinction should be made between cases of primary exfoliative dermatitis, and those clinical, diffuse, exfoliative processes which were secondary to other diseases. The latter had nothing in common with the pityriasis rubra of Hebra. The speaker said he was unaware, either in literature or in his personal experience, of any case of true pityriasis rubra of the Hebra type that did not result fatally, and most of them of some form of tuberculosis.

(*To be continued.*)

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held January 22, 1906.

Dr. Floyd M. Crandall in the Chair.

The Cold Fresh Treatment of Pneumonia.—Dr. W. P. Northrup read this paper, reporting in detail the case of a boy, aged 13 years, who developed a pneumonia, clinically of the grip type, wandering and prolonged, resolving without sputum. It began in the left lower lobe, spreading gradually to the root, advanced to the upper posterior portion, then to the apex, spreading around in front; in short it involved the entire left side. The symptoms that marked its severity were restlessness, nausea, and vomiting, delirium described as muttering, or active, nearly all the time for twelve days, incessant talking. There was also a dry tongue, moaning in sleep, picking the bedclothes, risus sardonicus, irregular respiration, irregular pulse, at times dicrotic, flushed face, and distended abdomen. The temperature touched 104° and 105° F. every day for nine days, fell a little from the ninth to the eleventh, mounted again on the twelfth, and remained normal after the thirteenth. The respirations averaged 35 to 40, by exception reached 50 or more. The pulse was seldom above 120 and usually of good character. His condition remained one of the post-typhoidal state associated with exhaustion of the cells and anemia, after the acuteness of his attack had subsided. He had illusions, delusions, etc, The boy's head was placed between two open windows, the lower sashes being opened to their utmost, the month being March. On account of the active delirium it was necessary to pass a canton flannel bandage around one ankle and fasten it to the iron bedstead. The working rule was, "Nothing between the nose and the North Pole." The room was cold, perhaps 40° F. The nurses wore heavy wraps night and day. The hot, dry skin, dry tongue, muttering delirium, limited lung capacity, called loudly for two aids, water and air. Any person looking on that boy could be easily convinced that a hot constricting poultice and vitiated air were not indicated; these would possibly have killed the child. The parents, under the influence of much explanation and observation of

the case, were convinced that the treatment fitted the indications. Dr. Northrup believed the time had come to give fresh, cool, flowing air and fresh, cool draughts of water to the stricken fevered child. It was time to cool and dilute the blood stream, aid it to unload its toxic material, to drain it from the system. It was time to lend a hand to steady the nervous regulator, to cool and bathe, soothe and refresh. In such a treatment there were no dangers; there were all advantages.

Some Problems in the Treatment of Pneumonia.—Dr. Egbert Le Fevre read this paper (see page 285).

Dr. Frank Van Fleet, father of the boy whom Dr. Northrup treated, said that whatever was done met with his approval, and he was much impressed with the treatment employed because it coincided with his own views. The recovery of the patient depended upon the condition of the heart, and when the pulse became dicrotic he said that it was a young heart and one that stood the boy in good stead. Anyone who went into the room was impressed at once with the fact that he was receiving God's oxygen and not the so-called "canned" oxygen. The boy practically received no medication.

Dr. Henry Koplik said that after listening to Dr. Le Fevre's paper he was impressed with the fact that the treatment of pneumonia was an individual one; when one treatment was proposed to be employed in all cases an error was committed, and in order to prove this he asked that the prognosis of pneumonia be considered under the so-called expectant plan. Pneumonia was more fatal in the extremes of life, whereas in midlife, between the ages of five and twenty-five years, pneumonia was one of the most favorable of diseases one had to deal with, the mortality being about 1 per cent. Dr. Koplik then referred to his continuous hospital service of four years, cases running from the ages of three months to fifteen years, altogether 83 cases with 10 deaths, a mortality of 12 per cent., all receiving the expectant plan of treatment. Among 25 cases below the age of two and a half years nine deaths occurred, a mortality of 36 per cent. There were 57 cases between the ages of two and a half years and fifteen, with only a 1 per cent. mortality. Dr. Koplik believed in fresh air, but he did not believe in chilling the patient. Children below two and a half years, especially below one year, acted badly when cold air was admitted to the room, and if a child had such a treatment as advocated he believed it would be rather heroic. The treatment was for the individual, watching the heart, conserving the patient's strength, supplying the patient with fresh, but not cold, air; by following such a method of procedure he believed we would get the best results.

Dr. Northrup said that if he was asked if he considered cold an essential part of the fresh-air treatment, he would answer yes. Cold quieted the maniacal activity. With regard to placing children under two and a half years of age in the cold, he said that Dr. Le Fevre was talking about a different kind of pneumonia. The pneumonia of children was a different thing, with a different prognosis and different behavior. They had new hearts. Take any child with a fever, if too hot, cool him; let cool air on him. At the Presbyterian Hospital all patients with pneumonia were sent to the roof and remained in the open for from four to six hours a day.

Dr. Egbert Le Fevre said he had experience with the open-air treatment of pneumonia, and he saw bad effects result only when the temperature of the air was low, as below 50°. If a stove was introduced into the room and the temperature of the room kept above 50°, the patients did better. He believed in fresh air, but not in cold air. The latter he did not believe to be an essential part of the fresh-air treatment. Experience in the treatment of tuberculosis had proven that. Dr. Le Fevre said there seemed to be a general tendency to consider that the expectant plan of treatment was the do-nothing treatment in the early stages of the disease. The older practitioners overtreated pneumonia, and yet many of their cases were carried through the disease successfully and the mortality in the earlier days compared favorably with the so-called ultra-expectant plan of treatment.

The Very Early Diagnosis of Tuberculosis by the Direct Skiagraphic Ray (X-Ray) with Stereopticon Demonstration.—Dr. Lewis G. Cole said that various attempts had been made to use the *x*-rays in the diagnosis of pulmonary lesions with more or less success. Dr. Williams of Boston had done more than any one else in fluoroscopy of the chest, making charts of the size and position of the heart, enlarged glands, and more advanced tubercular lesions; and Dr. Hultz and others had done some very good work in the diagnosis of tuberculous lesions by skiagraphs or *x*-ray pictures, and some time ago he made some skiagraphs of the more advanced tuberculous lesions. This was only partially successful, as there were other ways of diagnosing these conditions when they reached the more advanced stages. It was not until he had separated the rays into two distinct varieties, direct and indirect rays, that they were able to get the definition of the soft parts that enabled one to make the very early diagnosis of pulmonary tuberculosis. This he described in full in the May, 1895, issue of the *Archives of the Röntgen Ray,* and with this ray, which he described very briefly, they were able to show not only the bones, but the muscles, fat, connective tissue, kidney, and even the blod in the veins, and with this ray the lung, bronchi, and blood-vessels showed very distinctly. When so much detail was shown it was difficult to interpret the findings, and to aid in doing this he had made skiagraphs of a number of lungs post mortem, detected the tubercles, cut down upon them, and had them examined. Apparently from the plates the lesions began at the root, *i.e.* there were usually a number of old tubercles along the bronchi leading to the point of consolidation. A large percentage of the cases examined showed tubercles in one stage or another, a fact which he believed to have been verified by pathological findings. The principal difficulty was then in determining whether they were in an active stage or not. This could be partially determined by a single skiagraph, and when they had had more experience in reading the plates it might be determined quite accurately. In the cases where this could not be determined by a single skiagraph, a second might be made later, and if the individual tubercles had increased in size or number, one knew the process was in an active stage. Dr. Cole then proceeded to show the slides and demonstrated the direct, the indirect, and secondary rays upon the screen.

Dr. Lewis Fox Frissell said that the cases had been sent to Dr. Cole after the most careful physical examinations had been made of them, and afterwards they had compared the results. In general all of the advanced cases the physical examination and the skiagraphic findings agreed. In the early stages a large number, about 75 per cent., of the physical examinations agreed with the skiagraph, but there were other tuberculous lesions that they were unable to locate. He said he was very much impressed with the interpretations of the skiagraph, but it should be remembered that only men of experience in *x*-ray work should conduct the examinations, or else they might be misleading.

Proposed Amendments to the By-Laws to Conform with the Medical Society of the State of New York.—Dr. Egbert Le Fevre moved that the amended By-Laws, as presented, printed copies of which were in the hands of all members, be accepted. This was unanimously carried.

Warts.—Morison recommends:

℞ Hydrarg. chlorid. corrosiv.....gr. v.
Acid salicyl.....℥i
Collodion,.....℥i.

Sig.—Apply once a day, the crust formed by the previous layer being first removed. If necessary the mercurial salt may be increased up to 30 grains.—*Clinical Journal.*

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held January 18, 1906.

DR. CHARLES L. DANA, PRESIDENT, IN THE CHAIR.

The Treatment of Graves' Disease by a Specific Serum,—Dr. JOHN ROGERS read this paper. He said the most generally accepted theory of the direct causation of the symptoms of exophthalmic goiter was over-activity of the thyroid gland, and the active portion of its secretion was similarly believed to be a globulin containing iodine, called thyreoglobulin. In the attempt to neutralize this secretion, or check its production, several schemes for serum or allied methods of treatment had been tried. Among those might be mentioned the serum of thyroidectomized dogs, drawn after the animal had been operated upon and had developed symptoms of thyroidism; the serum of a patient suffering from fully developed myxedema; the serum and the fresh and dried blood and the fresh and dried milk of the thyroidectomized goat, commonly known as Möbius's serum; the serum of herbivorous animals which had been fed for varying lengths of time upon the thyroid glands of animals of another species; and the serum of animals into which emulsions of the thyroid glands of another species had been injected. Conflicting results had been reported for all these, but they generally agreed in a failure to cure. While assisting last year on the clinical side of the work in some experiments for the production of cytotoxins, conducted by Dr. Beebe in the laboratories of the Cornell University Medical College, he said he was greatly impressed with the specific symptoms of a nephrotoxin which he had made from dogs' kidneys. The principle seemed directly applicable to the treatment of exophthalmic goiter, and as he obtained at this time two of what were clinically and in the gross the large, soft, cellular thyroids of Graves' disease, he induced Dr. Beebe to make from this material a thyroid cytotoxin for man in the same manner as he had already made the kidney cytotoxin for the dog. The glands were ground to a pulp, extracted with normal salt solution, and the coarse fibers strained off The rather thick, cloudy filtrate was then made frankly acid with acetic acid, and a heavy precipitate of nucleoproteids resulted. The supernatant liquid was then siphoned off and half saturated with ammonium sulphate, which carried down the remaining nucleoproteids and the globulins, including the thyreoglobulin, or supposed active secretion of the thyroid gland. These precipitates were combined, and after removing the normal salt by dialysis, were to some extent injected while fresh into rabbits. The major part of the precipitate was, however, dried for preservation. The rabbits showed a severe reaction to those injections, and some died. After about five weeks of this treatment the rabbits were bled to death from the carotid and the serum thus obtained from these first inoculations he called Serum A. Serum B was made from the dried precipitate, then four months old, of nucleoproteids and thyreoglobulin combined from these diseased glands. The powder was dissolved in normal salt solution and injected as before into rabbits, but the demand for the finished product was urgent and somewhat more haste was employed than in the preparation of Serum A. The preparation of Serum C in a similar manner was begun a month later, or when the dried powder was about five months old, and when the animal inoculations were conducted with care and slowly, but with as little of the original material as would produce a reaction, as by this time its value was becoming apparent and the quantity of the dried precipitate very much decreased. Serum D was made from the normal human thyroid gland as obtained at autopsy, and had not proven satisfactory. The glands were removed several days after death, were ground to a pulp, extracted with normal salt solution, and the liquid strained through gauze. The filtrate was then made acid with acetic acid, and as very little precipitate resulted, dilute alcohol was added. The precipitate thus finally obtained was suspended while fresh in normal salt solution and injected into rabbits at intervals of about five days for some four weeks. The animals showed little or no reaction to the treatment with this material, and thus presented a noticeable difference from the previous experience. He then reported ten cases treated with Sera A, B, and C, with the result of three apparently perfect cures, three rescued from a critical condition and now approaching a cure, and the others more or less improved. After briefly summarizing the present knowledge of, and experience with, this remarkable serum, he said the experiments were admittedly very incomplete and unsatisfactory. It required weeks to prepare the serum and months to observe its effect, and as the subjects all had to be human and the medicament was evidently dangerous, its administration had to be conducted very carefully and slowly.

Preparation of a Serum for Treatment of Exophthalmic Goitre.—Dr. S. P. BEEBE presented this communication. He said that the fundamental ideas for serum therapy in this disease were, first, that the symptoms were caused by a hyperactivity of the thryoid gland, and, second, that the physiological action of the thyroid secretion was to neutralize some toxin arising in the course of metabolism. With our present knowledge the thyroid origin of the disease seemed to be the most rational of any thus far proposed. It was found that thyroid extract aggravated the symptoms in nearly every case, and attempts had been made to neutralize the products of the excessive activity of the gland by providing an oversupply of the toxin with which it was supposed the thyroid secretion normally combined. Theoretically the blood of animals which had been deprived of the thyroid gland should contain an excess of the metabolic toxin, ready for combination with the thyroid secretion, consequently the serum of thyroidectomized dogs was used both orally and by hypodermic injection, and this seemed to give beneficial results. More recently a serum obtained from thyroidectomized sheep had come into general use, and was now a commercial product sold under various names. Some favorable results had been reported from its use, but in the hands of most observers the treatment had not been of marked benefit. However, the nature of the toxin and its presence in the serum of thyroidectomized animals had not been satisfactorily investigated. A summary of the more important experimental studies of thyroid cytolysins gave an uncertain basis for clinical application. Attempts had been made, however, to produce cytolytic serum having therapeutic value in the treatment of exophthalmic goiter. The reader of the paper said that the serum with which his experiments were made was developed by injecting the nucleoproteids of some organ, such as the liver or kidney, instead of the whole organ ground to a pulp. The reasons for selecting the nucleoproteids for this purpose were obvious. The nucleus was the most important morphological and physiological part of the cell. If its specificity was a function of any of the cell constituents, the nucleus must be the most intimately concerned therein. He thought that by using only the neucleoproteids in the development of the serum, a considerable amount of extraneous material had been excluded. Because of the biological differences in proteids it was necessary to develop the serum from the proteids of the same species of animal as were used later for testing its activity; that is, nucleoproteids from the dog organs were injected into rabbits at seven-day intervals until five injections had been made, and the serum from these rabbits was then tested on dogs. Such a serum could not be expected to have much effect upon cats or guinea pigs. Test-tube reactions showed that serum made from nucleoproteids was much more specific than that made from the full cells. The results obtained by the biological test showed that such a serum was highly specific in its action. If the serum had been developed by injecting nucleoproteids from the dog's liver, it was found that its administration made the animal very sick, and if the dose had been as much as 2 c.c. per kilo, the result was fatal. On post mortem the liver was found badly damaged, while the other viscera

had not been injured. Observers had found that a serum made from liver pulp invariably caused lesions in the kidney, with albuminuria. The serum made from the nucleoproteid had not produced renal lesions, and at no time had there been albuminuria following its use. If the serum had been developed by the injection of kidney nucleoproteids, its administration caused an acute nephritis which might be quickly fatal. In some cases the nephrotoxin was given in small repeated doses intraperitoneally, and in others in one large dose intravenously. In the latter case the animal showed an immediate reaction, but in ten hours had completely recovered and remained normal for from three to five days. At the end of this time a slight amount of albumin appeared in the urine, and by the eighth or tenth day the animal had a severe nephritis. The days which elapsed between the administration of the serum and the appearance of the albumin formed the latent period. Antisera made by the injection of nucleoproteids were not absolutely specific, for they had a weak hemolytic and hemagglutinative action. He next determined to work on the preparation of a serum which would have cytolytic action on the human thyroid gland and therefore be of therapeutive value in Graves' disease. He isolated in pure form the nucleoproteids and thyreoglobulin from two glands in Graves' disease, obtained at autopsy. The method of isolating the nucleoproteids was the same as that followed in the work upon the organs of dogs. The globulin was precipitated by half-saturation with ammonium sulphate and, after filtration and washing, the excess of salt was removed by dialysis. Some injections were made from the fresh proteids, but the larger portion was dried at low temperature for preservation. A mixture of the two proteids was injected into rabbits. The nucleoproteids were included in this mixture for the purpose of producing cytolytic effect on the thyroid gland and the globulin, with the hope of developing an antitoxin to counteract the toxic symptoms. He thought it not unreasonable to conclude that the nucleoproteids were as intimately concerned in the production of thyreotoxin as they were of hepatotoxin and nephrotoxin. He thought that the results of the therapeutic application of the serum were more than coincidence, and that an impartial consideration of the clinical evidence must lead to the conclusion that improvement and recovery had been caused by the administration of the serum. The physiology and pathology of the thyroid gland were so obscure that such a means of treatment as the employment of a cytolytic serum could not be applied, as yet, with a high degree of intelligence. An active antiserum made from human tissues was capable of doing a great deal of harm, and had to be applied with a great deal of caution. The therapeutic dose was a very small one. He did not claim that the serum was absolutely specific, for he had only the clinical evidence, backed by the analogy with the hepatotoxin and nephrotoxin, which was imperfect because those were developed from nucleoproteids alone, while the thyreotoxin had come partly from the globulin injected.

Dr. W. Gilman Thompson said that he was familiar with the experimental work and brilliant results that Dr. Rogers had obtained, and he regarded the whole work as belonging to the highest type of scientific research. Personally he had seen eight or nine of Dr. Rogers's cases, several of whom had been under his general personal care. Dr. Rogers referred more to the method of preparation of the sera, and therefore he wished to speak on the clinical side. One patient, now in the Presbyterian Hospital, was expected to die within twenty-four or forty-eight hours, and they did not believe the use of the serum would be of any benefit. The patient was given three doses. The temperature was 104°, the pulse 140, and respirations 44. She was in such a toxic or septic state that the condition resembled very strongly one of malignant endocarditis. Within forty-eight hours, after two injections of the serum, she improved so rapidly that it resembled the improvement which came in a pneumonia during defervescence. She made almost a complete recovery and was now up and about the wards. Another patient with an enormously dilated heart, with a variety of murmurs depending upon this dilatation, bradycardia was produced by the initial dose given.

Symposium on the Sale and Use of Secret Medicines and on the Impure Drugs of the Shops, with Presentation of Resolutions.—Dr. Geo. L. Peabody first introduced this resolution.

Whereas, The evil caused by the widespread use of preparations of drugs of unknown and deleterious constituents inflicts a very great and growing injury upon a large portion of the public; and

Whereas, It is impossible to overcome this evil by individual effort alone because the preposterous and extravagant claims made by their purveyors are convincing to the uninformed by reason of the media of their advertisement, which include periodical literature of all descriptions, not only the daily press and magazines, but also religious and otherwise reputable medical journals and many counterfeit imitations of the latter, to some of which an income practically amounting to a subsidy is plain; and

Whereas, Physicians frequently aid in the propagation of the evil by prescribing secret medicines and by writing testimonials in favor of them, or indirectly by their failure to prescribe according to the needs of their individual patients; therefore be it

Resolved, That this Academy urge most strenuously upon its Fellows and upon all other physicians, never, under any circumstances, to sanction the use of any preparation the nature and quantity of whose ingredients are unknown to them, whether it appear in the guise of a medicine, a food, or as application for external use; and to this end to prescribe definitely, exactly, and in writing for every patient who needs any drug or combination of drugs; to diffuse among the laity as widely as possible a knowledge of the potential evil residing in preparations of drugs of unknown constituents; to second as far as therein lies the efforts of the American Medical Association in its attempt to combat this evil through the agency of its Council on Pharmacy and Chemistry, whose duty it is to investigate unofficial preparations and to publish the truth about them; and to use all proper influence to have advertisements of them removed from medical journals.

Resolved, That pending repressive legislation, which is likely soon to take place in many State legislatures and also in Congress, the attention of the State Board of Health be respectfully directed to the admirable chemical work which has been conducted for years by the Massachusetts State Board of Health and which has resulted in the filing in the Massachusetts State House of a long list of conspicuous fraudulent preparations, with a statement of the exact amount of their noxious ingredients; and that the Health Department of this city be respectfully urged to exercise its powers to protect the public against the dangers of secret preparations of all sorts which are known to be noxious or which can by chemical analysis be shown to be so, by absolutely prohibiting their sale within the limits of its jurisdiction.

Resolved, That wide publicity be given to these preambles and resolutions under the direction of the Council, and that attested copies of them be sent to the boards of health of this State and of this city.

Dr. Peabody then moved that this resolution be referred to the Council for action and report. This was seconded. Dr. Peabody thought it wise to refer briefly to the harm that came from continuing the sale of certain secret preparations and the consumption of them by the community, and he quoted the findings in the analyses of patent medicines, rather startling in nature, as reported by the State Board of Health, Public Document No. 34, Commonwealth of Massachusetts. Dr. Peabody thought the Academy had been somewhat remiss in not throwing more light on the drug subject before, and he hoped that the State and City Health Boards would help in this work. An enormous amount of capital expended in advertising would make

the work a very difficult one. One wholesale drug house told him that it spent yearly $300,000 in advertising. It was high time that knowledge be diffused upon a question which was so vital to the public.

Dr. W. Gilman Thompson said that similar resolutions had been offered in different parts of the country, and he hoped for some restrictive legislation, and if the resolutions as offered were passed practical results would accrue. If legislation at Albany was needed it should be brought there very soon.

Dr. E. Eliot Harris said that the general public, and the medical profession in particular, were more alive to-day than at any time in the past, to the injury of the health and the consequent suffering of the individual produced by the enormous consumption of nostrums or quack medicines. The ideas expressed in the resolutions should be carried out by all physicians in the interest of the general public and to further scientific medication as applied to the patient. Nostrums, secret proprietary remedies, and quack medicines were the synonyms of all the preparations presenting false statements as to their composition and fraudulent claims as to their efficacy or therapeutic value. Such were the many secret proprietary mixtures or synthetics offered to the general public and also to the medical profession, and both should beware of them in whatever guise they might be exploited, even to the disgracing of many honored names in their advertised testimonials. These nostrums were often spoken of as so-called patent medicines, which had led to considerable confusion, as was evidenced in the literature upon the subject. All samples of secret medicines should be deposited in the trash-basket, as every scientific physician should know the quantity of the ingredients in internal and external mixtures which he used, and should beware of secret synthetics.

Dr. Herman M. Biggs said that the Health Department began three years ago to take up the investigation of the character of the drugs dispensed, their activity, substitutions, and accuracy as to weight. About two years ago the Health Department had established a general drug department for the supply of their own hospitals, and in connection with it they took up the analysis of the various preparations, especially the crude drugs as sold by the large drug houses of the city.

Messrs. Hirschman and Atkinson, chemists of the Health Department, described the work done by the Department of Health in analyzing crude drugs and various preparations, such as aconite, belladonna, digitalis, and many of the coaltar preparations.

Dr. Charles L. Dana then put the resolutions to the Academy for action, and they were unanimously carried.

Dr. W. Gilman Thompson then offered the following resolution, which was unanimously carried:

Resolved, That the Council of the Academy be directed to maintain familiarity with the subject of the legislative control by the State of New York of the sale of patent medicines and proprietary medicines and nostrums, and to exercise its judgment regarding the lending the influence of the Academy to any proper measure which may be directed toward securing such control.

Phenol Camphor.—The mixture of equal parts of pure carbolic acid and gum camphor produces a clear, colorless, cily fluid, non-caustic, apparently non-irritating, miscible with alcohol but not with water, and possessing strongly the odors of its components. Chlumsky has been using the mixture of phenol and camphor for five years, in a wide variety of accessible surgical infections. Thus, he employs it freely as a surface dressing in erysipelas, lymphangitis, furunculosis, and after incisions of panaritia, phlegmons, pustules, etc. Abscess cavities and sinuses may be freely packed with gauze soaked in phenol-camphor. Chlumsky claims that suppuration is rapidly cut short, only a mucoid discharge remaining, and that there are no symptoms of poisoning.—*American Journal of Surgery.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending February 17, 1906.

	Cases	Deaths
Measles	1674	37
Diphtheria and Croup	371	62
Scarlet Fever	198	11
Smallpox	1	.....
Chickenpox	100	1
Tuberculosis	328	176
Typhoid Fever	30	10
Cerebrospinal Meningitis	30	21
Typhus Fever	.....	.....
Yellow Fever	.....	.....
Cholera	.....	.....
Totals	2,732	318

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending February 17, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, San Francisco	Jan. 27–Feb. 3	21	2
District of Columbia, Washington	Feb. 3–10	..	1
Florida, Jacksonville	Feb. 3–10	2	1
Cynthiana	Feb 3–10	2	..
Espanola	Feb. 3–10	3	..
Georgia, Augusta	Feb. 6–12	5	..
Indiana, Allen County	Dec. 1–31	..	1
Kentucky, Covington	Feb. 3–10	1	..
Louisiana, New Orleans	Feb. 3–10	4	..
Maryland, Baltimore	Feb. 3–10	6	..
Missouri, St. Louis	Feb. 3–10	6	..
Ohio, Cincinnati	Feb. 2–9	7	..
South Carolina, Georgetown	Feb. 15	1	Imported.
Tennessee, Memphis	Jan. 24–Feb. 7	5	1
Wisconsin, Appleton	Feb. 3–10	1	..
La Crosse	Feb. 3–10	1	..

SMALLPOX—FOREIGN.

Brazil, Pernambuco	Dec. 15–31	..	39
New Brunswick, Kings County	Feb. 4	..	Present.
Queens County	Feb. 4	..	"
Sunbury County	Feb. 4	..	"
York County	Feb. 4	..	
Canada, Toronto	Jan. 27–Feb. 3	1	..
China, Shanghai	Dec. 23–30	..	1
France, Paris	Jan. 27–Feb. 2	13	2
Gibraltar	Jan. 1–Feb. 4	5	..
Greece, Athens	Jan. 8–15	..	1
India, Bombay	Jan. 9–16	..	2
Calcutta	Dec. 30–Jan. 6	..	61
Karachi	Jan. 7–14	4	4
Madras	Jan. 6–12	..	19
Rangoon	Dec. 30–Jan. 6	..	10
Italy, General	Jan. 18–25	..	66
Japan, Formosa	Dec. 1–31	3	..
Russia, Moscow	Dec. 23–Jan. 13	5	3
Odessa	Jan. 13–27	38	4
St. Petersburg	Dec. 30–Jan. 20	19	7
Spain, Barcelona	Jan 21–31	..	7

YELLOW FEVER—FOREIGN.

Cuba, Habana	Feb. 11	1	..
Honduras, El Paraiso	Jan. 19	..	1
Mexico, Merida	Jan. 28–Feb. 3	2	2
Vera Cruz	Jan. 21–27	2	2
Nicaragua, Managua	Dec. 23–30	..	1

CHOLERA.

India, Calcutta	Dec. 30–Jan. 6	..	72
Madras	Jan. 6–12	..	1
Rangoon	Dec. 30–Jan. 6	..	3
Russia, Government of Lomza	Jan. 4–14	6	2
Government of Plock	Dec. 18–29	21	13

PLAGUE—INSULAR.

Hawaii, Kauai	Feb. 13	..	2

PLAGUE—FOREIGN.

Africa, Mozambique	Nov. 19–Dec. 6	..	3
Total to	Dec. 6	58	28
India, Bombay	Jan. 9–16	..	24
Calcutta	Dec. 30–Jan. 6	..	25
Karachi	Jan. 7–14	9	8
Madras	Jan. 6–12	..	1
Rangoon	Dec. 30–Jan. 6	..	30
Japan, Formosa	Dec. 1–31	..	12
Kagawa Ken	To Jan. 10	2	..
Kobe	To Jan. 10	94	..
Naraken	To Jan. 10	2	..
Osaka	To Jan. 10	140	..
Yamaguchi Ken (Shimonoseki)	To Jan. 10	8	1
Mauritius	Dec. 14–28	7	5
Persia, Geistan	Jan. 18	..	200

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 9.
Whole No. 1843.

New York, March 3, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

EPIDEMIC CEREBROSPINAL MENINGITIS.*

CLINICAL REPORT AND ANALYSIS OF SPECIAL SYMPTOMS IN THIRTY CASES, WITH REMARKS ON THE TREATMENT.

By WILLIAM M. LESZYNSKY, M.D.,

NEW YORK.

VISITING NEUROLOGIST TO THE LEBANON HOSPITAL; CONSULTING NEUROLOGIST TO THE MANHATTAN EYE AND EAR HOSPITAL AND THE HARLEM HOSPITAL.

During the recent epidemic, upwards of fifty patients were admitted to my service in the Lebanon Hospital as cases of cerebrospinal meningitis. Twenty or more of these cases are omitted from this report, as they were either of the tubercular type of meningitis, or chronic cases of cerebrospinal meningitis admitted in a moribund condition at an advanced stage of the disease. The histories and charts of others were unfortunately lost or destroyed in transportation. I am enabled, however, to present the complete records of thirty patients. In all but one the diagnosis was confirmed by the demonstration of the diplococcus intracellularis meningitidis in the cerebrospinal fluid. In the exceptional instance (Case 8) lumbar puncture resulted in a "dry tap," but in this case more than the usual array of symptoms were present.

In this series of cases nearly all types of the disease are represented, and some unusual features are noted. Of the thirty patients, 17 were males and 13 females. Fifteen recovered and fifteen died, making a mortality of 50 per cent. Three children were of one family (two died, 10, 15), and two sisters of another (one died, 3). A boy seven years of age (Case 7) during the chronic stage of the disease developed measles and bronochopneumonia, from which he recovered; but the meningitis continued and he died on the three hundred and seventh day. A boy thirteen years of age (11) recovered and was discharged. Six weeks later he was readmitted with another attack from which he made a complete recovery. (Patient exhibited.) But few such cases are on record. In the report of the Massachusetts epidemic, there was no history of a previous attack. The ages ranged from 16 months to 27 years, the average age being over 11 years. Two were infants 16 and 18 months old, respectively. Both died. The average duration at the time of admission of those who recovered was three days. One was admitted on the twenty-eighth day. Five of these patients (4, 9, 10, 12, 23) developed during the course of the disease a mild type of acute nephritis lasting from three days to several weeks.

In the fatal cases, the duration of the disease at the time of admission averaged about five days. Several were admitted on the first, second, or third day. The time from the onset of the attack until death ranged from five to forty-five days. One patient (7) was admitted on the forty-second day and died on the three hundred and seventh day. Autopsies were not permitted. The only fatal visceral complication was pulmonary edema, which was the immediate cause of death in three cases (24, 25, 26). In one (24) the edema was preceded by bronchopneumonia. The others died from exhaustion.

It has been erroneously assumed that cerebrospinal meningitis does not come within the domain of the neurologist, as it is an acute, infectious disease. It seems to me that to any unprejudiced mind, such a *noli me tangere* assumption is altogether unwarranted, for, of all diseases (regardless of etiology) it is definitely and almost exclusively a process primarily involving the cerebral and spinal meninges, in most instances producing a meningoencephalitis or meningomyelitis, increased intracranial pressure, and frequent implication of the cranial and spinal nerves. It is thus, par excellence, a disease of the nervous system. Whatever sequelæ arise, they are usually secondary to the alterations in the nerve structures. As compared with other acute infections, it is surprising that the infectious process so rarely attacks the viscera, and, as Councilman has shown, "the diplococcus does not produce a general septicemia."

All of these facts have been abundantly demonstrated by clinical and post-mortem evidence.

The following histories are classified in two groups, Recoveries and Deaths. They are numbered in reference to the date of admission to the hospital.

I also take pleasure in exhibiting eight patients who have made a complete recovery.

RECOVERIES.

Case II.—Annie G., age eleven years. Admitted April 6, 1905. Discharged, recovered, May 18, 1904. One week ago, headache and vomiting; chilly sensation alternating with fever; rigidity of neck and muscular twitching. On admission, in stuporous condition, with general prostration and involuntary urination. T. 104°; P. 120; R. 28. Pupils equal, slow reaction to light, ocular fundi normal. Tongue brown and dry; neck rigid; Kernig and tâche present; knee-jerks absent; no Babinski. Thoracic and abdominal organs normal. Urine examination negative; cerebrospinal fluid, 30 c.c., diplococcus meningitidis present. No blood examination made. Two days later, 30 c.c. of a one per cent. lysol solution was injected into the spinal canal without result. The above-mentioned symptoms continued unabated for three weeks, the temperature ranging from 100 to 103.5°, P. 100 to 130. Improvement then began, and she made a complete recovery. On the 27th of April the temperature became subnormal, and remained between 97° and 98° until the day of her discharge.

Case IV.—Rosaline D., age 17 years, clerk, single. Admitted May 2, 1904. Discharged, recovered, July 17, 1904. One brother died of c. s. m. several years

*Read before the New York Neurological Society, January 2, 1906.

ago, and her sister, admitted at the same time as patient, also died of the same disease. Five days ago, severe headache, incessant vomiting, and prostration, followed in twenty-four hours by diplopia, ptosis of right eye, stiffness and pain in neck, anorexia, and constipation. On admission, fairly well nourished, restless, and irritable; pupils equal, reaction normal; incomplete paralysis of right third nerve, as shown by partial ptosis and divergence; ocular fundi normal; cervical rigidity and retraction of head; rigidity of all extremities; knee-jerks feeble; Kernig present; Babinski absent. Heart, lungs, and abdominal organs showed nothing abnormal. T. 100.8°; P. 100; R. 24. Blood, hmg. 80 to 90 per cent. Leucocytosis, 23,000. Urine, normal. C. s. fluid, diploc. meningit. present. The above-described symptoms remained unchanged for four days, excepting rapid fluctuations in the temperature (from 99 to 103°) and the appearance of an erythematous rash on the anterior surface of the chest, abdomen, and the left arm, which lasted twenty-four hours. All symptoms then became less marked, and subsided by the fifteenth day, the temperature returning to normal. She then complained

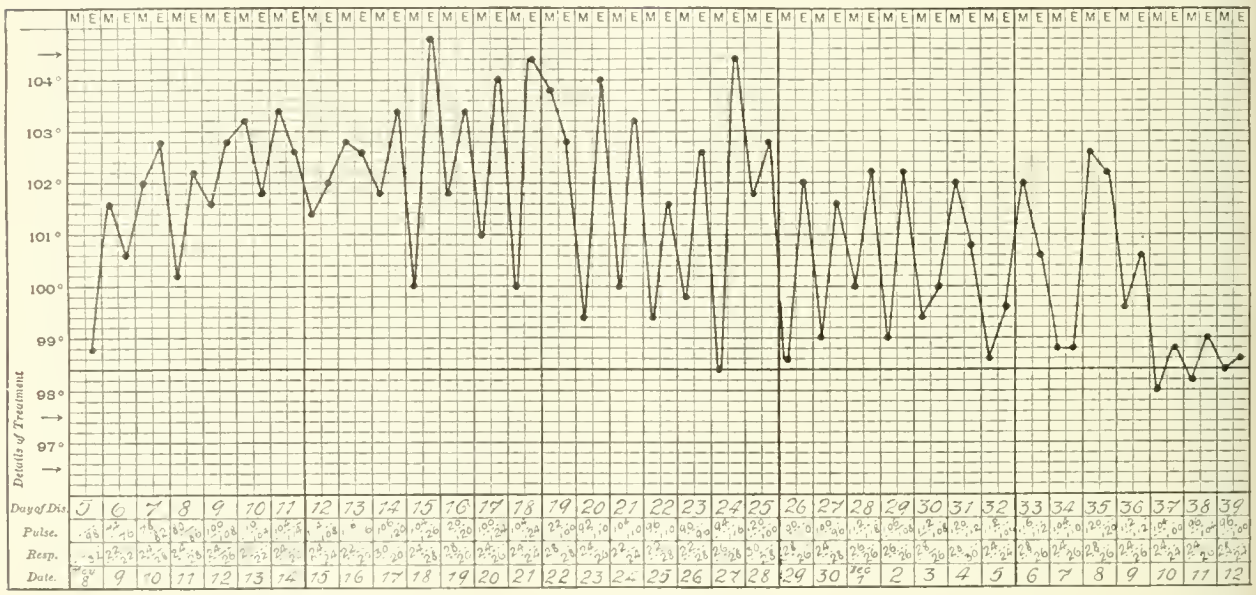

Chart 1.—Case X.

of left earache (but there was no apparent involvement of the drum) soon followed by complete deafness on the same side, which still persists. Six weeks after the onset of the disease, the urine showed all of the characteristics of an acute nephritis, without disturbance of her general health other than occasional nausea and slight vomiting. At the end of two weeks this had entirely disappeared. She made a complete recovery. The only sequel was unilateral deafness. She is otherwise in good health.

Case V.—Annie E., age 6 years. Admitted May 22, 1904. Discharged, recovered, July 6, 1904. Five days ago weakness and cardiac palpitation, anorexia, high fever, and restlessness. On admission, screams frequently; delirium, alternating with stupor; pupils equal, reaction normal; ocular fundi normal; herpes labialis; rigidity of neck; knee-jerks absent; Kernig present; no Babinski. T. 103°; P. 120; R. 30. Heart, lungs, and abdominal organs normal. Urine, negative. No blood examination. C. s. fluid (11 c.c.), diploc. meningit. present. During the following three weeks her condition remained about the same, with occasional general convulsions and delirium, and frequent exacerbations of temperature from 99° to 104° or 105°, and rapid pulse. From time to time, urine was passed involuntarily. Gradual improvement then began, and she made a complete recovery.

Case VIII.—Annie K., U. S., age 16½ years, shopgirl. Admitted September 22, 1904. Discharged, recovered, October 13, 1904. Three days ago, headache and pains all over the body, especially in the lumbar region; acute constipation; vomiting continued for two days. Twelve hours later she became very restless, then stuporous and delirious, and did not recognize her mother or her surroundings.

On admission, semicomatose, but could be aroused; nutrition good; menstruating; herpes labialis; dysphagia. Heart, systolic hemic murmur at base; lungs normal; spleen slightly enlarged; T. 104.6°; P. 116; R. 24; loss of vesical and rectal control; pupils equal, moderately dilated, reaction normal; ocular fundi normal; tongue coated and moist; pronounced rigidity of neck and retraction of head; knee-jerks absent; Kernig present; plantar reflex normal; petechial eruption about both knees. Urine, normal. Leucocytosis, 20,400. Lumbar puncture, "dry tap." Two days later consciousness returned and she was able to swallow. The temperature continued between 100° and 104°. Pulse from 94 to 144. At the end of a week improvement began, there was restoration of bladder and rectal control, the knee-jerks returned, and the temperature was practically normal on the fourteenth day of the disease. Recovery was rapid, uninterrupted, and complete.

Case IX.—John P., U. S., age 19, plumber. Admitted October 28, 1904. Discharged, recovered, January 16, 1905. Two days ago, chill and severe headache; vomited twice; was restless and delirious, and at times violent, mumbled continuously, and rapidly lapsed into stupor. On admission, semicomatose, very restless, calls out and screams at intervals; has visual and aural hallucinations; loss of vesical and rectal control; rigidity of neck and retraction of head; pupils equal, reaction normal; ocular fundi normal; tongue moist, brown, and coated; herpes labialis; knee-jerks normal; Kernig and Babinski present; petechiæ over elbows, knees, and epigastrium; T. 98°; P. 90; R. 30; heart, lungs, and abdominal viscera normal. Urine contains albumin 30 per cent. by volume, hyaline, and granular casts.

Leucocytosis, 42,000. C. s. fluid, diploc. meningit. present. At varying intervals during the following four weeks complete return to consciousness occurred for several days at a time, when rigidity of the neck would disappear. At other times, he complained of severe frontal headache, had violent de-

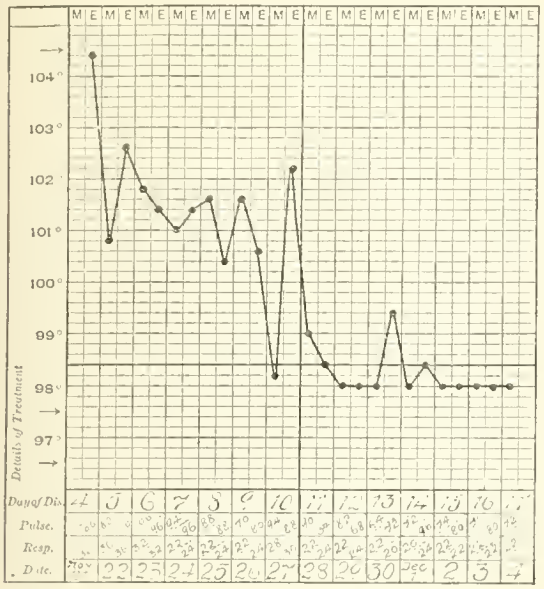
M E M E M E M E M E M E M E M E M E M E M E M E M E M E
104°
103°
102°
101°
100°
99°
98°
97°
Details of Treatment
Day of Dis. 4 5 6 7 8 9 10 11 12 13 14 15 16 17
Pulse.
Resp.
Date. 21 22 23 24 25 26 27 28 29 30 Dec 2 3 4

Chart 2.—Case XI. First Attack.

lirium, in which he screamed and sang, and had visual and aural hallucinations; rectal and vesical incontinence; twitching of facial muscles and extremities; occasional vomiting; horizontal and vertical nystagmus, and rapid emaciation. The temperature fluctuated between 99 and 102.6°. Pulse rapid. All of these symptoms subsided at the end of four weeks, but Kernig's sign persisted for several weeks longer. The nephritis gradually disappeared, and the urine was normal December 10. Three times from 30 to 50 c. c. of cerebrospinal fluid were withdrawn without relief. On November 19, 20 c. c. of 10 per cent. lysol solution was injected into the spinal canal, and improvement soon followed.

Case X.—Mollie S., U. S., age 27, stenographer. Admitted November 8, 1904. Discharged, recovered, January 24, 1905. Five days ago, chill, followed by frontal headache. The next day, headache, and vomited several times; anorexia; constipation; general hyperesthesia; fever; irritability; prostration; apathy; rigidity of neck, and stiffness of both hip-joints. On admission, semicomatose, mild delirium; sighing respiration; menstruating. Pupils equal, no reaction to light, ocular fundi normal; neck rigid; knee-jerks absent; Kernig's sign could not be satisfactorily determined on account of pain on movement of knee-joints; plantar reflex absent. T. 98.8°; P. 98; R. 32. Heart and lungs showed no evidence of disease. Leucocytosis, 32,000. C. s. fluid (20 c.c.), diploc. meningit. present. November 10. Herpes labialis; slight horizontal nystagmus; neck very rigid; Kernig present; petechiæ and erythema about elbows and knees; occasional transient rigidity of extensors in right upper extremity; both knee-jerks active, right pseudoclonus. Condition otherwise unchanged. Urine, acid, sp. gr. 1035, albumin, 8 per cent. by volume, hyaline, and granular casts, red blood-cells and leucocytes. November 11. Both lower extremities were held rigidly extended, and a slight arthritis developed in both knee-joints. Involuntary urination. November 12. Sensorium clearing. Pupils equal; no reaction to light; hyperesthesia in lower extremities; petechiæ well-marked at ankles, knees, and elbows; swelling of knee-joints has subsided. After this she was delirious from time to time, was very restless, and urine was discharged involuntarily; at other times she was rational and complained of headache. November 21. Severe chill. T. 104°; P. 136; R. 36; followed by active delirium. November 26. Chill, headache and vomiting. December 12. Condition much improved; mind clear; general emaciation; very little rigidity of neck; pupils normal; knee-jerks have returned; Kernig present. All symptoms gradually subsided. The urine contained albumin and casts for nearly three weeks, but became normal on and after December 7. During the course of the disease she had two mild attacks of epistaxis. Lumbar puncture was done three times, and from 30 to 50 c.c. of fluid withdrawn. All specimens contained the diplococcus intracellularis meningitidis. She made a complete recovery, and has remained in perfect health to the present date, nearly one year since attack.

Case XI.—Emil S., German, age 13, butcher's boy. Admitted November 21, 1904. Discharged, recovered, December 25, 1904. Three days ago severe frontal headache, fever, and vomited several times. Restless; irritable; refused food and moaned continuously. Subsequently, chill, lasting ten minutes, followed by high fever, delirium, stupor, and great prostration. On admission, well nourished; face pale; active delirium most of the time, with occasional moments of clear consciousness; general hyperesthesia; pupils contracted, equal, no reaction to light; tongue moist and coated; marked rigidity of neck, with retraction of head; knee-jerks absent; Kernig, Babinski, and tâche pres-

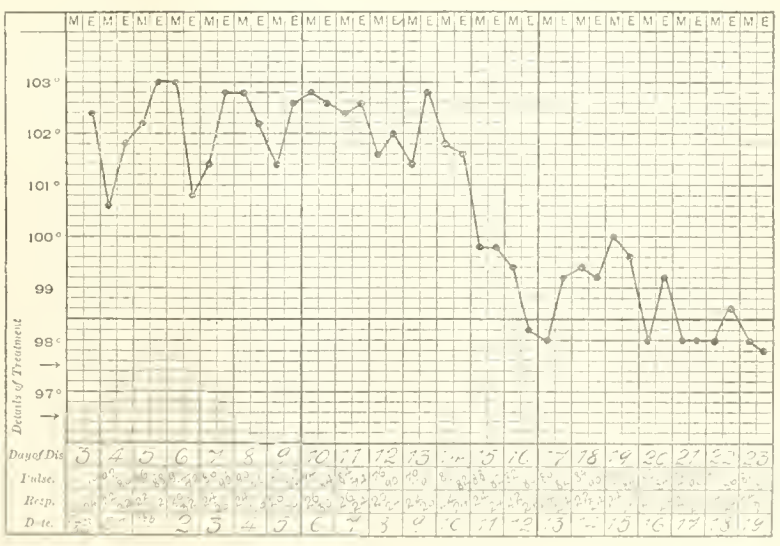

Chart 3.—Case XI. Second Attack.

ent. T. 104.2°; P. 106; R. 30. Heart, lungs, and abdominal viscera normal. Urine, negative. Blood, w. b. c. 14,000. C. s. fluid (25 c.c.), diploc. meningit. present. The symptoms continued unabated, but with less frequent delirium. On the eighth day he complained of severe pain in both knee-joints,

which was aggravated by movement, but there were no other signs of arthritis. This subsided in a few days. In attempts to demonstrate Kernig's sign, it was found that both sciatic nerves and the muscles over the loins were very sensitive to pressure, a phenomenon which continued throughout the attack.

All symptoms gradually disappeared, the temperature became normal on the fourteenth day, and he made a complete recovery. He was kept in the hospital until December 25, when he was discharged. He returned at once to his customary work as a butcher's boy, carrying heavy baskets and doing rough work in general, and remained perfectly well until January 28, 1905 (forty-five days after recovery from the first attack), when he was suddenly seized with severe headache, fever, delirium, and general hyperesthesia. He was readmitted to the hospital on the third day (January 30, 1905) with the following symptoms: Delirium; face flushed; pupils normal, eye-grounds normal; tongue coated; neck rigid; knee-jerks active; Kernig, Babinski, and tâche present; T. 102.2°; P. 110; R. 24. Examination otherwise negative. Urine, normal. Hmg. 80 to 90 per cent., w. b. c., 14,000. C. s. fluid, diploc. meningit. present. For four weeks the same symptoms continued and then gradually disappeared, excepting Kernig's sign, which was of the same type as in the first attack. The temperature became subnormal on the twenty-third day and remained so for several weeks during convalescence. For a week he complained of left abdominal neuralgia, which also affected the leg and foot. Lumbar puncture was performed five times. At the first examination, January 30 (as stated), the diplococcus was found. The same result February 3, March 16 and April 5 were negative. April 9 the diplococcus was absent in the smear but found in the culture. Convalescence was slow, but he made a complete recovery and has remained well since.

Case XII.—William H., U. S., age 13 years, schoolboy. Admitted December 27, 1904. Discharged, improved, January 14, 1905. Two days ago, pains in arms, back, and head; fever; vomiting; restless, talkative, and slight delirium. Next day, retraction of head, occasional strabismus, active delirium, and apparently deaf. On admission, in delirium; face flushed; pupils equal, slightly contracted; no reaction to light; neck rigid and head retracted; bilateral total deafness; scaphoid abdomen; kneejerks present; Kernig well marked on both sides (attempts at passive extension of leg upon thigh results in his shrieking and strong contraction of flexors over thigh). Babinski absent. T. 101°; P. 90; R. 28. Heart, lungs, and other viscera normal. Urine, acid, 1018, trace of albumin, hyaline cases. Blood, hmg., 80 to 90 per cent. W. b. c., 15,000. C. S. fluid, diplococcus meningitidis present. The urine was normal three days later. During the first week, there was a mild degree of optic neuritis which soon subsided. By the thirteenth day, most of the symptoms had disappeared, but the fever continued, reaching 105° on the eighteenth day. He was then taken home at the request of his family, and when seen, December 10, 1905, his gait was slightly ataxic, deafness persisted, but otherwise his health was good. He is now, January, 1906, deaf, but in good health.

Case XIV.—Maurice J., U. S., age 10 years, schoolboy. Admitted, February 27, 1905. Discharged, recovered, May 12, 1905. Three days ago, headache, vomiting, stiffness of neck, and pains in legs. Delirium followed. One brother and a sister were attacked at the same time and all were admitted together. The others died. On admission, well nourished; apathetic; face flushed; pupils and eye-grounds normal; lips dry and fissured; tongue moist and coated; rigidity of neck and lower extremities; knee-jerks normal; Kernig present; Babinski absent; T. 100.8°; P. 100; R. 36. Heart and lungs normal; abdomen distended and tympanitic. Urine normal. Hmg., 80 to 90 per cent.; W. b. c., 21,200. C. s. fluid (15 c.c.), diploc. meningit. present. The course of the disease was acute but mild, the temperature remaining high (103.2°), with slight remissions for four days, and soon becoming normal. After the eighth day, all symptoms abated and recovery was rapid. January, 1906, he was in good health and attending school.

Case XVIII.—William S., U. S., age 11 years, schoolboy. Admitted March 16, 1905. Discharged, recovered, June 9, 1905. Three days ago, headache, vomiting, stiffness of neck, and delirium. On admission, sensorium clear; body well-nourished; herpes labialis; pupils normal; tongue dry and thickly coated; neck rigid; knee-jerks, Achilles, cremasteric and abdominal reflexes exaggerated; plantar diminished, Babinski absent; Kernig present. Thoracic and abdominal organs negative. T. 101.2°; P. 88; R. 24. Urine normal. Hmg. 80 to 90 per cent., w. b. c., 22,200. C.s. fluid (20 c.c.), diploc. not found in smear or culture. The temperature was intermittent, showing daily fluctuations of four to five degrees, the morning remissions touching normal, the evening rise reaching 103° to 104°. This continued four weeks when it became normal. During the first two weeks, in addition to the symptoms enumerated, there occurred retraction of the head; Babinski sign; rigidity of the lower extremities; feeble, rapid, and irregular pulse, and extreme emaciation. Eye-grounds normal. Simultaneous with the fall in temperature in the fourth week, there was an abatement of all symptoms, excepting Kernig and Babinski sign, and rigidity of the lower extremities which persisted during the seventh week, Kernig's sign being the last to disappear. Convalescence was protracted, but he ultimately made a complete recovery. During the course of the disease, lumbar puncture was done four times, the diplococcus being absent at the first examination, but present on March 23 and April 13. The urine was always normal. In January, 1906, he was in good health and attending school.

Case XXI.—Jacob L., Russia, age 10 years, schoolboy. Admitted April 2, 1905. Discharged, recovered, June 9, 1905. Two days ago, chill followed by convulsions; temperature 102°; pain in head and neck; frequent vomiting; delirium, and photophobia. On admission, well nourished, pale and apathetic; general hyperesthesia; pupils equally dilated, reaction normal, ocular fundi normal; tongue coated and moist; herpes labialis; neck and back rigid; extremities cyanotic. Thoracic and abdominal organs normal; pulse and respiration irregular. T. 101.2; P. 100; R. 28. Knee-jerks absent; Kernig present; plantar, cremasteric, and abdominal reflexes exaggerated. Urine negative. Hg. 80 to 90 per cent., w. b. c., 18,400. C. s. fluid (15 c. c.), diploc. meningit. present. The symptoms were not influenced by the temperature fluctuations (from 99 to 103.8°). After the ninth day, all of the meningeal signs disappeared, save rigidity of the neck and Kernig's sign, which persisted until the fall of temperature on the twenty-second day. Convalescence was protracted, but he made a complete recovery. In January 1906, he was in perfect health and attending school.

Case XXII.—Robert L., U. S., age, 5 years. Admitted April 5, 1905. Discharged, recovered, August 3, 1905. Four weeks ago, vomiting and convulsions, followed by rigidity of the neck and stupor.

During the last week, pain in neck and back. Has lost in weight and strength. On admission apathetic; general hyperesthesia; head retracted, neck and spine rigid; pupils dilated, left > right, slow reaction to light, ocular fundi normal; remains of herpetic eruption on lower lip; tongue dry and coated; hearing normal. Thoracic and abdominal viscera normal. T. 102.2°; P. 120; R. 36. Knee-jerks feeble; Kernig present; plantar, cremasteric and abdominal reflexes active; muscular twitching in all extremities; involuntary discharge of urine and feces. Urine normal. Hmg. 80 to 90 per cent. W. b. c., 19,600. C. s. fluid (25 c. c.). Meningococci absent in smear; no culture made. For nearly six weeks he remained in about the same condition, occasionally being delirious, restless and noisy, the morning and evening temperature being from 99 to 103°. At times he became bright and talkative. At the end of the first week (April 12), c. s. fluid (30 c.c., meningococci absent in smear and culture. On the 41st day, there was a sudden rise in temperature to 105°; P. 130; R. 30; with exacerbation of all symptoms, which subsided in a few days. Occasionally he would have a prolonged chill, followed by fever and vomiting. He became very much emaciated and was always apathetic, and most of the time the neck and all extremities were rigid, and there was loss of bladder and rectal control. On the forty-seventh day (April 27) the diploc. meningit. were found in a smear from the fresh fluid. Frequently, during the further course of the disease, the upper extremities were completely relaxed while the lower extremities were rigid in extension. On May 19 (seventy-second day), examination of cerebrospinal fluid negative. Improvement was very slow, but gradually all symptoms subsided, and he was discharged completely recovered. In January, 1906, he was in good health and attending school.

Case XXIII.—Lillian S., U. S., age 15, clerk. Admitted April 7, 1905. Discharged, recovered, May 7, 1905. Three days ago, chill, fever, headache, pain in neck, back, and limbs, and repeated vomiting. Slight hebetude, but sensorium has been clear. Temperature ranged from 99° to 102°. On admission, large well-nourished girl; face flushed; sensorium clear, occasional convergent strabismus, pupils dilated r. > l., reaction normal, ocular fundi normal; hearing normal; tongue moist and slightly coated; rigidity of neck; both knee-jerks active; Kernig present; plantar reflex exaggerated; no Babinski. Heart, lungs, and abdominal organs normal. T. 102°; P. 110; R. 30. Urine, acid, sp. gr. 1025, albumin one per cent. by volume, no casts. Blood, Hmg. 80 to 90 per cent., leucocytosis, 24,400. Cerebrospinal fluid (25 c.c.) diploc. meningit. present. The following day she began to menstruate and continued four days. On the sixth day, chill, T. 104°; P. 142; R. 46; marked apathy, opisthotonus and retraction of head; eyes normal; herpes on upper and lower lips; petechiæ over arms and forearms; but more at elbows, also over buttocks, slightly on thighs, but more marked about knees and legs; slight epistaxis. These symptoms continued with mild delirium until the thirteenth day, when the temperature became normal and convalescence began. The urine was normal at the end of the first week. She made an uninterrupted and complete recovery.

Case XXVII.—William D., U. S., age 15. Admitted May 8, 1905. Discharged, recovered, August 27, 1905. Three days ago, headache, fever, and vomiting, followed by delirium and coma. On admission, semi-comatose; face pale; body well-nourished; general hyperesthesia; pupils equally dilated and react slowly to light, ocular fundi normal; tongue dry and coated; sordes over teeth; general muscular rigidity; opisthotonus and retraction of head with rigidity of neck; knee-jerks and plantar reflexes normal; Kernig well-marked; tâche present; loss of control of bladder and rectum. Heart and lungs normal; abdomen rigid and distended. T. 101°; P. 118; R. 28. Urine normal. Blood, Hmg., 80 to 90 per cent., w. b. c., 15,800. C. s. fluid (20 c.c.), diploc. meningit. present. On the tenth day deafness affecting both sides, but complete on the right. Eight days later, slight right optic neuritis and left irido-cyclitis. All of the symptoms above described continued with a slight fluctuation for two months, the temperature during the first three weeks ranging between 100° and 103°. Dysphagia was occasionally present, and there was frequent noisy delirium and progressive emaciation. The hearing improved but remained subnormal. The right eye recovered, but the irido-cyclitis continued, and by August 9 posterior synechiæ and vitreous opacities resulted and the pupil was contracted and distorted. The tension of the globe was diminished and vision equaled fingers at one foot. Lumbar puncture was performed four times, and the diplococcus was usually found. At one time, the fluid was thick and purulent, and at another no fluid could be obtained although five punctures were made at different levels. General improvement was slow, and when discharged, although he had gained in weight and strength, his gait remained unsteady for several months. January, 1906. General health good. Static ataxia (falls when eyes are closed). Spastic and titubating gait. *Lower extremities.*—No atrophy; muscular power and resistance good on right side; adductor spasm slight on both sides, but more on left. Left, paresis of iliopsoas and posterior thigh group; foot-drop with commencing contracture; and spontaneous dorsal flexion of great toe. Both knee-jerks exaggerated; left ankle-clonus and Babinski; pseudoclonus and slight Babinski right; Kernig absent; Achilles reflex, R. + L. +, cremasteric, feeble; abdominal reflex absent; no objective sensory disturbance. Upper extremities and face normal. Left eye, perception of light; right eye normal. Ears (report by Dr. P. D. Kerrison). Deafness on right side, due to lesion of auditory nerve; hearing normal on left side.

Case XXX.—Roman W., U. S., age 7 years; schoolboy. Admitted June 22, 1905. Discharged, recovered, August 10, 1905. Four days ago headache, followed by chills and fever, pain in neck, and vomiting. On admission, stuporous; rigidity of neck and spine, with retraction of head; pupils equally contracted, reaction to light normal, ocular fundi normal; general hyperesthesia; tongue coated and moist; herpes labialis. Thoracic and abdominal organs normal. T. 102.6°; P. 90; R. 32. Knee-jerks absent; plantar reflex normal; Kernig well marked. Urine, 1010, acid, no albumin, a few hyaline and granular casts. Hmg., 80 to 90 per cent., W. b. c., 19,600. C. s. fluid, diplococcus meningitidis present. A few days later the urine was normal, and within three weeks all symptoms gradually disappeared and complete recovery followed. The temperature during the first week ranged from 99 to 102.6°.

FATAL CASES.

Case I.—Henry S., U. S., age 4½ years. Admitted April 2, 1904. Died May 10, 1904. Seven days ago chill, fever, headache, pains in legs and back, vomiting, and retraction of head. Next day delirium, stupor, involuntary urination and defecation. In same condition on admission, with marked prostration. T. 103°; P. 124; R. 28. Thoracic and ab-

dominal viscera normal. Knee-jerks absent; Kernig and Babinski present. Urine normal. Hmg., 80 per cent. Leucocytosis, 36,000. C. s. fluid (18 c.c.), diplococcus meningitidis present. The temperature fluctuated between 99 and 104°, but remained subnormal after the third week, and the general condition was unchanged. The child was taken home and died of exhaustion two days later.

Case III.—Mary D., U. S., age 14; schoolgirl. Admitted May 2, 1904. Died July 5, 1904. One brother died of cerebrospinal meningitis seven years ago. Mother and uncles died of tuberculosis. Four days ago headache, fever, and vomiting for twenty-four hours. This was soon followed by rigidity of the neck and lower extremities, restlessness, and delirium. On admission, general nutrition good; face pale; left facial paralysis, with slight lagophthalmos; pupils and ocular fundi normal. T. 102°; P. 102; R. 36; heart, lungs, and abdominal viscera normal; rigidity of neck and lower extremities; knee-jerks absent; Kernig present. Urine normal. Blood, Hmg., 90 per cent., W. b. c., 20,000. C. s. fluid (15 c.c.), thick, yellow, and fibrinous; diplococcus meningitidis present. Three days later there was bilateral deafness (hearing returned on the left side). Bronchopneumonia developed during the second week, but gradually subsided. She remained delirious most of the time, with incontinence of urine and feces. Emaciation was rapid and extreme, so that in the course of a few weeks the skin ulcerated over both iliac spines, and bed sores formed over the sacrum, buttocks, and malleoli. Prostration was always pronounced. Acute exacerbations and sudden remissions of temperature were frequent, ranging from 98½ to 102 or 104°. In the third week left keratitis developed and rapidly progressed to ulceration, perforation, and destruction of the eye. The right eye remained normal. All of the meningeal symptoms as at first described continued throughout the course of the disease. She died from exhaustion on the sixty-seventh day.

Case VI.—Adolph S., U. S., 11 years of age; schoolboy. Admitted June 17, 1904. Died June 23, 1904. Ten days ago he began to complain of diplopia and severe frontal headache. Vomited once. Frequent mild epistaxis; anorexia and general weakness. No disturbance of consciousness. No convulsions or rigidity. On admission he was in a stuporous condition, with a blank, expressionless face. He was easily aroused, slowly answered questions, and yawned frequently, then relapsed into stupor. At times he recognized familiar objects and named them correctly. T. 99°; P. 52; R. 18. No rigidity of neck; flaccidity of entire muscular system; pupils equal, normal in size, no reaction to light, ocular fundi normal; knee-jerks, Achilles reflex, and Kernig absent; Babinski present on both sides; cremasteric and abdominal reflex present on both sides; tâche well marked. Heart, lungs, and abdominal organs showed nothing abnormal. Urine, acid; 1010; albumin, trace; glucose, trace; urea normal; microscopically negative. Blood, hmg. 90 per cent., R. b. c., 4,750,000; W. b. c., 12,200. C. s. fluid (15 c.c.), diplococcus meningitidis present in smear and culture. No tubercle bacilli present. Shortly after admission he had several attacks of generalized tremors, but no convulsive movements. Later the urine was passed involuntarily. His condition remained unchanged, and he died from exhaustion six days after admission, on the sixteenth day of the disease. The rectal temperature ranged from 99° to 96.6°; pulse from 64 to 44; respiration from 20 to 16. No autopsy.

Case VII.—Abraham F., U. S., age 7 years, schoolboy. Admitted July 29, 1904. Died April 20, 1905. Six weeks ago, suddenly attacked with general convulsions; stupor and opisthotonus for eight days. Temperature 105°. All symptoms gradually diminished in severity. On admission he looked anemic and was slightly emaciated. Sensorium clear; pupils dilated, equal, reaction normal; ocular fundi normal; slight right internal strabismus; tongue coated and tremulous; neck rigid; tâche present; T. 102.8°; P. 140; R. 28. Thoracic and abdominal organs normal; knee-jerks active; Kernig present; Babinski absent. Urine normal. No blood examination. C. s. fluid, diploc. meningit. present. Irregular temperature persisted for several months, being remittent the first six weeks and later intermittent in type, with periods of normal temperature for five or six days. The meningeal symptoms soon disappeared, and he gained slowly in weight and strength. He was discharged from the hospital in a fair condition, being able to walk, and having had no fever for three weeks. He returned one month later, with a sudden rise of temperature, to 103°, accompanied by delirium and rigidity of the neck, all of which subsided in twenty-four hours. He was perfectly well for a week, when another similar attack occurred, and subsided as before. Otherwise, he seemed to be improving, and was gaining slowly. These attacks recurred, however, for four successive weeks. During the fourth attack he developed measles, and was transferred to the "Hospital for Contagious Diseases," where he passed through a severe attack of measles complicated by bronchopneumonia. He was then taken home, remaining for one month, and was readmitted to the hospital (February 13, 1905), with the symptoms of chronic meningitis and internal hydrocephalus; general emaciation; rigidity of the neck, opisthotonus; rapid irregular breathing; scaphoid abdomen; rigidly flexed upper and lower extremities; involuntary evacuation of bladder and rectum; frequent active delirium with intervals in which he as bright and rational. Emaciation became extreme, bedsores formed, and on the three hundred and seventh day he died of exhaustion. No autopsy. During the attacks of delirium and stupor, cerebrospinal fluid was withdrawn, which resulted invariably in relief of these symptoms for several days. Four weeks before death meningococci were found in the fluid, and the blood examination showed hmg. 80 per cent., W. b. c., 11,600. The urine was always normal.

Case XIII.—Florence J., age 16 months. Admitted February 27, 1905, died April 6, 1905. Two days ago, very irritable and hyperesthetic; slight rigidity of the neck, and the extremities twitched occasionally. On admission, pupils equal, reaction normal, convergence of both eyes; constant grinding of teeth; lips dry; tongue coated and moist; mild bronchitis and irregular respiration and heart's action. T. 102°; P. 130; R. 40. Rigidity of neck and abdomen; knee-jerks exaggerated; Kernig and Babinski present. Urine normal. Hmg., 80 per cent., W. b. c. 18,000. C.s. fluid, diploc. meningit. present. The symptoms continued unchanged during the first three weeks, the temperature ranging from 99° to 104°. The meningeal symptoms then became intensified, emaciation progressed rapidly, and right suppurative otitis developed. Later, she became comatose with rapid noisy respiration, feeble, irregular pulse; conjugate deviation of the eyes to the right side; pupils dilated and irresponsive to light; marked dilation of veins of head and face; intense rigidity of the neck and opisthotonus; extremities rigidly extended, and a purpuric eruption over the

left side of the body. General clonic convulsions for twenty-four hours before death. Lumbar puncture was done four times without relief.

Case XV.—Daniel J., U. S., age 8 years, schoolboy. Admitted February 27, 1905, died March 7, 1905. One brother and sister with c. s. m. were admitted with patient. Two days ago, headache, vomiting, pains in lower extremities, fever, squinting, and delirium followed by stupor. On admission, delirium; semicomatose; high fever; pupils normal; rigidity of neck; knee-jerks and Babinski absent; Kernig present. Thoracic and abdominal organs normal. Urine normal. Leucocytosis. C. s. fluid, thick, fibrinous, and purulent, diploc. meningit. present. All symptoms became rapidly worse, and profound coma supervened. Several lumbar punctures failed to obtain any fluid. Death from exhaustion on the eleventh day. Temperature chart lost.

Case XVI.—George G., U. S., aged 20 years; telegraph operator. Admitted March 7, 1905; died April 17, 1905. Two days ago sore throat, soon followed by severe headache, vomiting, backache, rigidity and tenderness of the neck, photophobia and diplopia. In the evening he became violently delirious. On admission, well nourished; active noisy delirium; pupils dilated, equal; reaction normal; paralysis of right external rectus; frequent twitching of facial muscles; lips swollen; tongue moist, coated, and tremulous; heart and lungs normal; abdomen rigid and tender; loss of rectal and vesical control; rigidity of the neck and opisthotonus; knee-jerks feeble; Kernig well marked; Babinski absent; tâche present. T. 102°; P. 90; R. 30. Urine normal. Hmg., 80 per cent.; W. b. c., 24,000. C. s. fluid, diploc. meningit. present. At the end of the first week deafness developed on the right side. During the next few weeks the temperature was remittent (from 99 to 103°), reaching normal twice during that period, when there was a corresponding amelioration of all symptoms. But Kernig's sign and the absence of knee-jerks persisted, together with marked prostration and progressive emaciation. In the third week a petechial eruption appeared about both knees, and later all of the acute meningeal symptoms reappeared with sudden exacerbations of temperature to 103°, and equally rapid decline, with periods of normal temperature of four to six days. At the beginning of the sixth week he passed into a typhoid state with delirium and stupor, rapid feeble pulse, rapid respiration and cyanosis, extreme rigidity of the neck and extremities, and involuntary urination and defecation. Death from exhaustion. The urine was always normal. Lumbar puncture was performed five times, and from 30 to 40 c.c. withdrawn, with temporary relief. Meningococci were found in every specimen.

Case XVII.—Harry K., U. S., age 16 years; salesman. Admitted March 8, 1905. Died March 31, 1905. Ten days ago chill, followed by headache, fever, and repeated vomiting. Next day rigidity of the neck, delirium, hyperesthesia, and loss of control of bladder and rectum. On admission, delirium and prostration; general hyperesthesia; frequent twitching of fingers and hands; neck rigid and extreme opisthotonus; involuntary urination and defecation. Both pupils dilated, l. > r., reaction normal, slight hyperemia of optic papillæ. Herpes labialis; tongue dry and fissured; sordes on teeth and gums; mouth full of mucous and saliva. T. 103°; P. 118; R. 32. Heart and lungs normal. Abdomen rigid, tender, and tympanitic. Bed sores over both buttocks, right shoulder, and elbow. Tâche well marked; knee-jerks exaggerated; Kernig present; Babinski absent. Urine normal. Hmg., 80 per cent., W. b. c., 22,000. C. s. fluid, diploc. meningit. absent in smear and culture. Five days later meningococci present in c. s. fluid. The above-mentioned symptoms became more pronounced, the temperature ranging from 99 to 102.5°, with increasing emaciation and prostration. Death from exhaustion on the thirty-fourth day. Lumbar puncture three times; meningococci found in last two specimens. Urine was always normal.

Case XIX.—Paul T., U. S., age 16; clerk. Admitted March 30, 1905. Died April 2, 1905. In good health until yesterday, then had sudden chill, severe headache, pain in back and extremities, repeated vomiting, followed in a few hours by delirium and coma. On admission, semicomatose; moaning constantly; involuntary micturition and defecation; face flushed; neck rigid, and general muscular rigidity; bilateral exophthalmos and intense conjunctival injection; paralysis of left external rectus; pupils widely dilated and rigid; ocular fundi normal; no increase of intraocular tension; tongue coated and moist; driveling; dysphagia; heart, lungs, and abdominal viscera showed nothing abnormal. T. 101; P. 88; R. 24. Both knee-jerks exaggerated; Kernig well marked; Babinski absent; plantar, cremasteric, and abdominal reflexes feeble. Urine, sp.g. 1030, contained a small amount of albumin; otherwise negative. Blood not examined. C. s. fluid (30 c.c.) under very high pressure; diploc. meningit. present. He remained in the same condition, with a rise of temperature to 104.8°, and died from exhaustion on the fifth day.

Case XX.—Mamie S., U. S., age 6 years. Admitted March 31, 1905. Died April 10, 1905. Previous history lost. Attack began seven days ago. On admission, stuporous; bilateral exophthalmos more marked on the left side; increased intraocular tension (T 2); partial ptosis on both sides; pupils widely dilated; very feeble reaction to light; ocular fundi normal. Left facial paralysis (lower branches) with loss of faradic irritability. Tongue clean and moist; neck rigid, head retracted; upper extremities flaccid, lower extremities rigid in extension; scaphoid abdomen; knee-jerks absent; plantar reflex R. absent, L. normal; Kernig present. Involuntary urination. Heart, lungs, and abdominal organs normal. T. 101.8; P. 96; R. 28. Urine negative. Blood, hmg., 80 to 90 per cent., W. b. c., 18,000. C.s. fluid (15 c.c.), diploc. meningit. present. The symptoms became more pronounced. There were irregular exacerbations of temperature (from 97 to 102°), complete paralysis of the left third nerve, and increased exophthalmos. The upper extremities remained relaxed, while the lower were in rigid extension, with frequent clonic spasm. She died from exhaustion on the seventeenth day. Lumbar puncture was performed twice. Lysol sol. 2 per cent. 8.5 c.c. was injected into spinal canal without benefit.

Case XXIV.—Arnold M., United States, age 18 months. Admitted April 15, 1905. Died May 22, 1905. Three days ago he became listless and irritable, with fever, and had two general convulsions within three hours. On admission, well nourished; very irritable; general hyperesthesia; pupils equal, reaction normal, convergence of both eyes; thoracic and abdominal organs normal. T. 100.8°; P. 120; R. 48. Slight rigidity of the neck; knee-jerks and Kernig absent; Babinski present (normal in infant). Urine normal. Hmg., 80 to 90 per cent., W. b. c., 14,000. C. s. fluid (30 c.c.), diploc. meningit. present. The temperature continued of a remittent type, showing fluctuations of three degrees daily (from 100 to 103°). He got progressively worse, and at the end of the third week was in a semicomatose condition. There was pronounced rigidity of the

neck with retraction of the head, and tenderness on pressure over the neck and occiput. The pupils failed to react to light, and there was complete immobility of the right eye, and right facial paralysis. Ocular fundi normal. This was accompanied by rigidity of all extremities, exaggerated knee-jerks and plantar reflex, rapid feeble pulse, and extreme emaciation. Ten days before death bronchopneumonia developed, and was soon followed by pulmonary edema, which was the immediate cause of death on the fortieth day of the disease. Lumbar puncture was done four times and from 25 to 30 c.c. withdrawn. Meningococci were found in every specimen.

Case XXV.—Gabrielle M., Algeria, age 20 years, single; clerk. Admitted April 19, 1905. Died April 23, 1905. Eight days ago chill, headache, vomiting, fever, and pain in the abdomen. Five days later rigidity of the neck, soon followed by delirium and coma. On admission, comatose; general nutrition good; face pale; opisthotonus and rigidity of the neck with retraction of the head; bilateral exophthalmos, more marked on the left side; left ptosis, intense conjunctival injection, pupils widely dilated and rigid; no ophthalmoscopic examination. Dysphagia; upper extremities flaccid, lower extremities rigid in extension; abdominal muscles rigid; involuntary urination; knee-jerks exaggerated; pseudoclonus; Kernig and Babinski present. Coarse moist râles over entire chest; abdominal organs normal. T. 101°; P. 70; R. 24. Urine negative. Leucocytosis, 30,000, hmg., 80 to 90 per cent. C. s. fluid, diploc. meningit. present. A few days after admission she began to menstruate. The above described symptoms persisted, with increasing dysphagia, and rise of temperature to 104°. Pulmonary edema developed, and death took place on the twelfth day of the disease.

Case XXVI.—Minnie S., Russia, age 8 years; schoolgirl. Admitted April 27, 1905. Died May 1, 1905. Eleven days ago chill, fever, and general convulsion. Delirious for twenty-four hours. Then had severe headache, pain in the neck and abdomen, and retraction of the head. Symptoms subsided for four days and then returned with increased intensity. On admission, well nourished; face pale; semicomatose; general hyperesthesia; slight rigidity of the neck; tâche present; eyes kept closed from spasm of orbiculares (due to photophobia); both eyeballs divergent, conjunctival hyperemia, pupils equal and contracted, no reaction to light. No ophthalmoscopic examination. Nasal discharge (contained diplococci). Tongue dry and coated; heart, lungs, liver, and spleen normal; abdomen tense and distended. T. 103°; P. 126; R. 38. Knee-jerks feeble; Kernig and Babinski present. Urine negative. Blood not examined. C. s. fluid (30 c.c.), diplococcus meningitidis present in abundance. She rapidly became worse, and two days after admission was semicomatose, with pulmonary edema, clonic spasms of the right upper extremity, pronounced bilateral exophthalmos, dilated rigid pupils, and ptosis of right eye. Upper extremities flaccid, lower, in extensor rigidity; knee-jerks absent; Kernig's sign well marked. (In obtaining this symptom, spontaneous dorsal flexion of the great toe, and also of the other toes, was produced.) Loss of control of bladder and rectum, and gradual rise of temperature to 105°. She died of pulmonary edema on the fifteenth day of the disease, and five days after admission to the hospital.

Case XXVIII.—Charles W., U. S., age 2 years and 2 months. Admitted May 11, 1905. Died June 20, 1905. Three days ago convulsions, vomiting, restlessness, high fever, and slight cough. On admission, well nourished; expression dull; general hyperesthesia; pupils contracted, equal, reaction normal; tongue dry and coated. T. 100°; P. 140; R. 36. Heart's action rapid and feeble, pulse irregular; lungs normal; abdomen distended and tympanitic; rigidity of the neck; knee-jerks and Kernig absent; plantar reflex active; tâche marked. Urine normal. Blood not examined. C. s. fluid, diplococcus meningitidis present. Five days later herpes labialis; ptosis of the left eye; and petechial rash about the neck, soon followed by marked rigidity of the neck and retraction of the head, inequality of the pupils, presence of Kernig's sign, and progressive emaciation. The temperature began to fluctuate, varying from 98° to 105° within twenty-four hours. This condition continued unchanged, and at the end of the fifth week the child was taken home by his mother, and died three days later from exhaustion. Lumbar puncture was done four times without relief of symptoms. The fluid always contained diplococcus meningitidis.

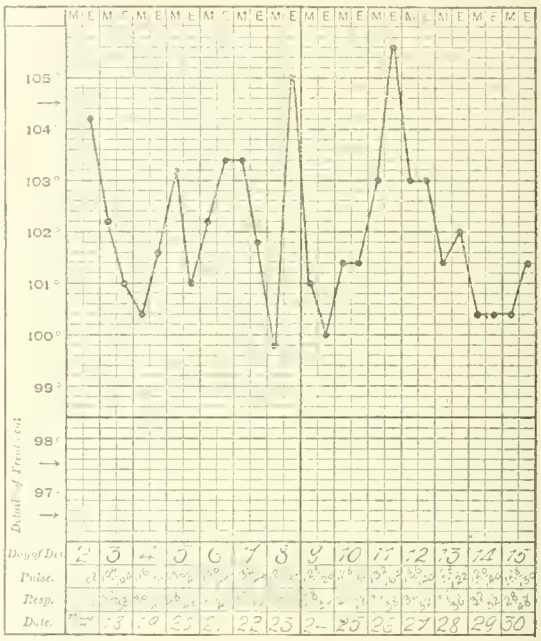

Chart 4.—Case XXIX.

Case XXIX.—Bertha F., U. S., age 6 years. Admitted May 17, 1905. Died May 31, 1905. In good health until last night, when she suddenly complained of severe headache and pain in the back of the neck; had high fever and delirium. This morning vomited several times, and became unconscious. On admission, well nourished; face flushed; comatose; conjunctivæ congested, persistent conjugate deviation of the eyes to the right and downward, pupils dilated equally, slow reaction to light, ocular fundi normal; tongue moist and clean; no herpes; no rigidity of the neck, but child evinces pain when head is flexed; general hyperesthesia; tâche present; knee-jerks and plantar reflex exaggerated; Kernig and Babinski absent; heart rapid and irregular, respirations very rapid; liver and spleen normal. T. 104°; P. 108; R. 76. Urine, 1025, glucose present. Hmg., 90 to 100 per cent., W. b. c., 17,000. C. s. fluid (15 c.c.), diplococcus meningitidis present. The temperature became irregular and remittent, reaching 105.6°. She rapidly became worse, with delirium, stupor, and loss of control of bladder and rectum; clonic spasms of lower extremities, and later clonic general convulsions, ptosis of left eye. Conjugate deviation continued, with paralysis of left

external rectus, right facial paralysis (and loss of faradic response). Rigidity of the neck was never present. Death from exhaustion on the fifteenth day of the disease.

Analysis of Special Symptoms.—The following will be here mentioned: Herpetic and petechial eruptions; muscular rigidity; loss of control of the bladder and rectum; the condition of the knee-jerks; Kernig's sign; the Babinski plantar reflex; facial paralysis; deafness; and eye symptoms.

Herpes and Petechiæ.—The presence of herpetic or petechial eruption seemed to have no particular influence in the prognosis. At least it could not be looked upon as being of unfavorable significance, although the herpes is due to inflammatory lesions in the corresponding ganglia of the fifth nerve, or of the posterior roots of the cervical nerves. In eight of the recovered cases (5, 8, 9, 18, 21, 22, 23, 30) herpes was present, three being associated with a petechial eruption (8, 9, 23). In two cases (4, 10) petechiæ were present alone. In three of the fatal cases a petechial eruption was present in one (16), herpes in another (17), and both herpes and petechiæ in the third (28).

Muscular Rigidity.—Rigidity of the neck was present in twenty-eight and absent in two (fatal cases 6, 29). General rigidity with opisthotonus occurred in three recoveries (4, 22, 29) and in one fatal case (19). A peculiar feature in five cases, three fatal (20, 25, 26) and two recovered (22, 23), was extreme extensor rigidity of both lower extremities, while the upper extremities remained flaccid. I was inclined to attribute this to irritation of the anterior nerve roots in the dorso-lumbar cord.

Bladder and Rectum.—The loss of bladder and rectal control was evidently not occasioned by the spinal meningitis *per se*, but was entirely due to the condition of the sensorium. It occurred only in the presence of delirium or stupor. During the intervals in which the mind was clear, the bladder and rectal functions were normal, and, during convalescence, restitution of function was complete and permanent in every case.

Knee-jerks.—The knee-jerks were absent in fourteen cases, seven (1, 3, 6, 20, 24, 15, 28) fatal and seven (2, 5, 8, 11, 21, 23, 30) recovered. In those who recovered, the knee-jerks returned during convalescence and became slightly exaggerated. In at least six of these cases the knee-jerks did not return after the withdrawal of cerebrospinal fluid, several examinations being made immediately after lumbar puncture and during the following twenty-four hours. I was led to make these observations through a statement made at the last meeting of the American Neurological Association, that when the knee-jerks were absent in cases of cerebellar tumor, they returned after withdrawal of cerebrospinal fluid, thus showing that this symptom was the result of intracranial pressure.

For many years I have noted the condition of the knee-jerks in all cases of acute meningitis, both in children and adults. In the early period of the disease they have usually been absent, to gradually return and become exaggerated, particularly if intracranial pressure symptoms supervened.

Kernig's Sign.—Kernig's sign was present in twenty-seven cases (in twelve fatal cases, and in fifteen who recovered). In three of the fatal cases it was absent (6, 24, 29). In two of these (6, 29) there was no rigidity of the neck; in the other (24) it was very slight. This objective symptom, which is supposed to be essential to a correct diagnosis of meningitis, is, in my opinion, usually the result of the patient's resistance to extension of the leg upon the thigh, in order to avoid painful stretching of the sciatic nerve or the spinal roots which are involved in the exudative process. From numerous observations I have reached this conclusion, for, in many of these cases (excluding the element of general hyperesthesia or arthritis) attempt to elicit this symptom, even while the patient was semicomatose, frequently resulted in expressions of exquisite pain, and often patients would become apprehensive at subsequent visits and beg to have such examination omitted. In several cases tenderness was present over the sciatic foramen and in the course of the nerve trunk in the thigh.

This explanation of the mechanism of Kernig's sign has also been given by Hassan of Chicago (MEDICAL RECORD, September 9, 1905), and it is quite plausible, when we consider that pathologists have demonstrated that all cases of meningitis are more or less cerebrospinal.

The Babinski plantar reflex was present in ten cases. (In infants this is not pathological.) In several patients attempts to elicit Kernig's sign resulted in well-marked dorsi-flexion of the great toe, and in milder degree of the other toes, on the same side. This phenomenon is somewhat similar to the dorsi-flexion of the foot occurring when the thigh is flexed on the abdomen in hemiplegics with secondary degeneration of the pyramidal tracts.

Facial Paralysis.—Facial paralysis was present in four of the fatal cases (3, 20, 24, 29). In one (3) there was slight lagophthalmos. In the others only the lower branches were evidently involved, the orbicularis palpebrarum escaping. This condition is of unusual interest, inasmuch as the faradic irritability was completely lost in the facial nerve and affected muscles. (No electrical examination was made in Case 3.) This was repeatedly demonstrated, and we must assume that the paralysis was the result of pressure upon the nerve trunk from exudation at the base.

In Case 20 the lagophthalmos may have been neutralized by the partial ptosis on the same side, which soon advanced to complete third nerve paralysis. In Case 24 the right facial paralysis was associated with complete right ophthalmoplegia. In Case 29, however, there was right facial paralysis and left ptosis.

Deafness.—The auditory nerve became involved in five cases (recovered, 4, 12, 27; fatal, 3, 16): Case 4. On the fifteenth day, left earache and deafness, permanent; Case 12. On the first day, bilateral, complete and permanent deafness; Case 27. On the tenth day, bilateral deafness, complete and permanent on right; left, recovered; Case 3. On the seventh day, bilateral deafness; recovered in left, permanent right; Case 16. On the seventh day, deafness right.

The permanent deafness was no doubt due to infiltration and destruction of the auditory nerve, as has been demonstrated at autopsy in published cases.

Eye-symptoms.—Eye-symptoms were present in twelve of the fatal cases (3, 6, 7, 13, 16, 17, 19, 20, 24, 25, 26, 29) and in four of the patients who recovered (4, 9, 10, 27). Ophthalmoscopic examination was made once or several times in twenty cases. For obvious reasons it was omitted in the others. In two (17, 27) slight optic neuritis was present. In all others the eye-grounds were normal.

The eye-symptoms occurring in those who recovered were: Absence of pupillary light reflex; horizontal and vertical nystagmus; incomplete paralysis of the right third nerve (partial ptosis and divergence); mild optic neuritis. All of these conditions gradually disappeared. In one case (27) irido-

cyclitis and choroiditis developed and terminated in permanent unilateral blindness.

Among the fatal cases: Intense conjunctival hyperemia; dilated pupils with retardation or loss of reaction to light; convergence of both eyes; divergence of both eyes; pronounced bilateral exophthalmos; persistent conjugate deviation to the right and downward; partial or complete third-nerve paralysis; paralysis of external rectus; complete right ophthalmoplegia. In one case (3), during the third week, left keratitis developed, with subsequent ulceration, perforation, and destruction of the eye.

Let me direct your special attention to cases 19, 20, 25, and 26. In all of these fatal cases bilateral exophthalmos was a prominent symptom. In all probability it was due to hyperemia of the retrobulbar orbital tissues. In none of the early or recent reports of epidemic cerebrospinal meningitis have I found this symptom mentioned, and personal inquiry among physicians in this city who have had charge of many cases has failed to elicit information of similar instances. Hence, this symptom must be either quite unusual, or it has escaped observation. The protrusion of the eyeballs was more pronounced than is ordinarily observed in patients with Graves' disease. It was usually accompanied by intense conjunctival hyperemia and widely dilated rigid pupils. In several of these patients the pupils were dilated *ad maximum*, a condition which is never the result of paralysis of the sphincter alone, therefore the extreme dilation must be ascribed to superadded irritation of the sympathetic fibers.

The intraocular tension was increased to T.2 in one case (20); in the others it was apparently normal. In two (19, 20) the eyegrounds were normal. The others were not examined. In one of these cases (20) the exophthalmos was associated with complete oculomotor paralysis on one side. In two others (25, 26) complete ptosis was present on one side, without involvement of other external muscles supplied by the third nerve. In another (19), the left external rectus was paralyzed. It will be noted that the severe eye-symptoms in the fatal cases were in consonance with the other manifestations of the disease. In the four cases just enumerated, all of the patients were comatose or semi-comatose when admitted on the first, seventh, eighth, and eleventh days of the disease, and died on the fifth, eighteenth, twelfth, and sixteenth day respectively. The withdrawal of cerebrospinal fluid proved ineffectual in reducing the exophthalmos. From a careful study of these cases, I would lay great stress on the importance of such eye-symptoms and their grave prognostic significance. In a report of forty cases with special reference to the eye-symptoms, Randolph states (Bulletin Johns Hopkins Hospital, Vol. IV, 32, 1893) "patients with 'enormously' dilated pupils died." Among the 111 cases of cerebrospinal meningitis reported by Councilman, Mallory, and Wright (Mass. State Board of Health Report, 1898, p. 143) "various abnormal conditions of the eyes were noted in sixty-seven cases." They state that no systematic examination of the eyes was made in all cases. In one case "bulging of the eyes was noted." After a review of the literature we must conclude that the eye-symptoms vary with the type of the epidemic and the degree of infection.

Prognosis.—The prognosis in cases of cerebrospinal meningitis is often an extremely perplexing problem, particularly during the early period of the disease. Apparently mild cases may die, while those presenting a serious and alarming aspect have often been known to recover. In infants and young children the mortality is high. Careful observation of the patients whose histories are here recorded, has led me to the conclusion that the following symptoms are of grave significance and indicative of a fatal termination:—exophthalmos and widely dilated rigid pupils; prolonged stupor or coma with slow pulse, subnormal temperature and general muscular flaccidity; persistent coma with high fever and extreme rigidity after the first week.

Treatment.—Good nursing and proper feeding are the most important features in the treatment. When the weather permitted, the patient was kept in the open air the greater part of the day. Several improved more rapidly on a mixed diet during and after the second week. The ice-bag was applied to the head and neck in every case, but in my opinion its utility is doubtful. Hot saline rectal irrigation or hypodermoclysis often proved extremely valuable in improving the vitality. The hot bath at a temperature of 105° for 15 or 20 minutes given several times a day, usually allayed excessive irritability and delirium and temporarily improved the patient's general condition. Whiskey, strychnine, digitalis, etc., were given when indicated.

Morphine was given hypodermatically for the relief of pain, restlessness, and delirium in the earlier cases. In one case vomiting resulted, and recurred after every dose, and it was therefore discontinued.

Ergot was then resorted to, and it not only relieved the pain, restlessness, and delirium, but also improved the condition of the pulse. In all of the succeeding cases, ergot was used as a routine measure with the most gratifying result. In only one or two instances morphine was administered when the patient became uncontrollable. While I consider ergot the most valuable drug in this disease, it must be understood that it is comparatively useless when given by the mouth in the customary way. Hence, the familiar statement of various writers that "ergot proved useless." It was administered in the form of an aseptic solution subcutaneously over the buttocks every three or four hours. No abscesses followed. The preparation used was Squibb's solid extract of ergot (aseptic) one dram, in distilled sterile water one ounce. Children received from 10 to 15 minims, and adults, from 15 to 30 minims at a dose. This was continued in some cases for five or six weeks. In the majority of instances the dosage was gradually diminished and the drug discontinued at the end of the second or third week.

In several acute cases, salicylate of sodium was administered per rectum (a method suggested by Dr. Seibert of this city), but without benefit.

Lumbar Puncture.—Lumbar puncture was performed once or several times in every case, either for diagnostic or therapeutic purposes. It was never followed by unpleasant results. In restless and noisy patients chloroform was used. A Quincke needle was usually employed. (Exhibition of instruments.) After some practice, one can soon decide whether or not the needle has entered the spinal canal without watching for the appearance of fluid. It is the consensus of opinion among those familiar with this procedure, that the number of "dry taps" decreases in proportion to one's skill in the technique, but the fact is now well-established that instances often occur in which fluid cannot be obtained.

On one occasion, when the members of the house-staff doubted that the needle had entered the canal, as no fluid escaped, it was left *in situ*, and another introduced through the lowest lumbar space. Sterile water was then injected through one needle and it promptly flowed out through the other. I have repeatedly observed, that several days after a successful puncture, a "dry tap" may result, if the puncture is made in the same location. This must

be due to the formation of inflammatory adhesions at the site of the previous traumatism. If the needle be inserted in another space, fluid may then be obtained. The diagnosis of this type of cerebrospinal meningitis can usually be made from the clinical phenomena alone. Nevertheless, in doubtful cases lumbar puncture is essential. Even in pronounced cases, the meningococcus may be absent at one examination, but be found at a subsequent puncture. Therefore, when uncertainty in diagnosis still exists, it is unwise to exclude the disease after one negative examination. In some of the cases herein reported, even during the period of exacerbation (when the diplococci are usually present) they have not been found in either the smear or culture. In Case 6, in which there was complete muscular flaccidity and subnormal temperature, a correct diagnosis would have been impossible without examination of the cerebrospinal fluid.

In some of the fatal cases, after several satisfactory punctures had been made in the early period of the disease, subsequent attempts to obtain the fluid often proved unsuccessful.

As a measure for the temporary relief of excessive intracranial pressure, its therapeutic value must be conceded. It has often been disappointing, however, after withdrawing 50 to 60 c.c. (all that could be obtained). Probably in such cases the foramen of Magendie was closed by the inflammatory process. In two of the patients who recovered (2, 9), lysol solution was injected into the spinal canal. In the former, a one per cent. solution was used without apparent effect. In the latter, the solution was of ten per cent. strength, and it seemed to have some influence in hastening recovery. It was also used in several of the fatal cases without benefit. Of course, no satisfactory conclusions can be drawn from these cases. I am indebted to my former house physicians, Drs. Steiner and Barnert, for assistance in preparing the histories and temperature charts.

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THE HEART IN TUBERCULOSIS.*

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Ever since the days of Hippocrates, in our study of the consumptive, we have focused our almost entire attention upon his lungs. This was both natural and rational, and up to a certain point tended to progress. It led to the masterpieces of clinical observation by Laennec and Louis, and finally to the bacteriological triumph of Koch, and with the attainment of this last it did for a time appear that the last word had been said upon the pathology and pathogeny of consumption.

Without the bacillus no tuberculosis; without its localization in the lung no consumption.

It was not long, however, before uneasy suspicions began to raise themselves, that both the lodgment of the bacillus in our tissues and its special preference for the lung as a place of growth, were dependent on other factors entirely outside of both the bacillus and the lung.

From the postmortem room came the evidence, in rapid succession with overwhelming force, that the temporary and local lodgment of the bacilli, not merely in the body, but even in the lung, was the commonest pathological accident to which the species is liable, and occurs at some time during life in a percentage of individuals, which at first was stated at thirty, then rose to sixty, and is now placed at from seventy to eighty.

*Read before the California State Medical Society, Riverside, April 19, 1905.

The presence and even the lodgment of the bacillus in our tissues, though, of course, indispensable, is a relatively secondary factor in the development of consumption. This sent us afield for the discovery either of some particular type and configuration of general bodily structure, or of defect in the lung itself or in some other organ, whose condition made possible the triumph of the bacillus.

We at first sought refuge in vague terms, like "lowering of the general vitality," "depression of the bodily powers of resistance" and "vulnerability" of the tissues, but these, like many other explanations, were soon seen to be mere restatements in graceful and euphonious language of the problem at issue. That a lowering of the vital resistance is an important factor no one doubts for a moment, but it simply raises the questions Of what sort and Why?

Then a futile attempt was made to hark back to the old diathetic delusions so prevalent a couple of generations ago. The classical *habitus phthisicalis* was rejuvenated and brought upon the stage, only, however, to be quickly sent back to the wings. In addition to its vagueness, the conception was found to prove altogether too much. Nearly every authority describes at least two, and sometimes as high as four, different types of complexion, stature, features, etc., which make the possessor thereof specially and peculiarly liable to tuberculosis. For instance, we all recall the famous types, "pretty," and "ugly" struma, the one with clear skin, bright, expressive eyes, aquiline features, abundant, light, wavy hair, tall, slender figure, tapering fingers, and blue veins; the other swarthy, thick-skinned, dark haired with heavy features, squat-built and stupid. The delicate child who could not, by a little judicious exaggeration be made to fit under one of these types would be hard to find, and one is ready to suspect that they are simply another of the innumerable incarnations of the powers of light and darkness, Ormuzd and Ahriman, whose prototypes are still portrayed upon the stage of popular melodrama.

Then there is the color type, the individual with red or tawny hair, clear or freckled skin, and dark eyes, eyebrows, and lashes. This type of individual may contract tuberculosis, of course; but after twenty years of observation and careful inquiry, I have been unable to find any adequate basis for the notion that he does so in larger percentage than other types of complexion, and I suspect the impression to be one of the survivals of the ancient ethnic prejudice against red hair, as exemplified in the cynical Spanish proverb "Trust no man with red hair—and no woman with hair of any color.'

We have also had described a florid and athletic type which is peculiarly subject at adolescence to the attack of this disease. In fact, the more we study these alleged "strumous" and "consumptive" types, the more I think we are driven to two conclusions: First, that almost any undeveloped, languid, or unhealthy child or young adult, from whatever cause defective, could be fitted under one or other of them. Second, that such distinctive features as are present in those who afterward become clearly consumptive are almost invariably the signs of an early stage of tuberculosis, or of tuberculous involvement itself, most frequently probably in the glandular system; but many of them clear signs of beginning involvement of the lung itself, such as rapid pulse, cold extremities, chilliness, easy fatigue, afternoon flush, sparkle of the eye, etc. About all that can be made out of

the bewildering profusion of diathetic types is that children and young adults whose development is defective, or whose general vigor is lowered by any cause, whether hereditary, dietetic, sanitary, or economic, are more liable than the average to develop tuberculosis, which everybody knew beforeh and.

One general physical characteristic may perhaps be said to be proven to be a predisponent to the attack of tuberculosis, and that is unusual tallness of stature. This, of course, applies only to those who have reached somewhere near the maximum height at, say, from sixteen to eighteen years of age and upward; for tallness in children is, in a safe majority of cases, a sign of vigor.

Almost every observer who has paid attention to the point has expressed an unhesitating opinion that men over five feet eleven inches, and women over five feet seven inches in height, are distinctly more subject to the attack of the disease, and succumb to it more rapidly than the average of the race. The data are as yet, however, too incomplete for the drawing of any safe conclusion, inasmuch as it will be necessary to carefully tabulate not only the number of tall individuals developing tuberculosis but the percentage of such individuals in the race under consideration.

An investigation should at the same time be made of the morbidity of those equally undeveloped below the average stature. It may only be found to resolve itself into an instance of the well-known greater liability of extremes to vary and suffer from accidents and casualties, but from a somewhat careful study of the vigor of the giants and dwarfs I should be strongly inclined to the belief that the little people would be found to have far greater resisting power than their tall cousins at the opposite extreme, who are excessively subject to tuberculosis, and whose longevity is only about half that of the dwarfs. The most striking illustration that I have been able to find is that presented by two regiments of the British Army. One of the Life Guards, those great hulking, beribboned, and glittering popinjays who are to be seen astride their coal-black steeds on guard before the Palace gates at Whitehall, and the other the Woolwich Corps of the Royal Artillery. Both these regiments are recruited on precisely the same standards, except that of height, the minimum of which is placed in the Life Guards at six feet—their average being nearly six feet two inches—while in the artillerymen a minimum is allowed lower than that of the rest of the army, namely, five feet four inches. The men are fed and housed in barracks of practically identical sanitary construction, and yet the death rate from tuberculosis in the Life Guard giants is a little more than double that in the artillery dwarfs. Of twenty-two patients in our Portland Camp at one time two of the men were over six feet, and two of the women over five feet seven, a much larger proportion than in the rest of the community. In all giants and very tall men whom I have examined, the heart is relatively undersized.

Our next search was in the direction of some special shape or size of lung, or what is practically identical, chest, as furnishing conditions favorable for the lodgment and propagation of the bacillus. The conclusion to which it has led us is similar to the one upon diathesis, namely, that whatever form of chest is connected with, or indicative of, arrested, backward, or abnormal development of any sort in children and youths, will be found most frequently present in consumptives. This, as nearly seven hundred measurements have now shown, is a round, high-indexed type, its average index being in the neighborhood of 80, as compared with the normal of 70, thus showing the consumptive chest to be ten degrees rounder and deeper than the normal, instead of flatter. But this is neither a specially defective chest mechanically, as far as expansion is concerned, nor even markedly undersized, for what it lacks in breadth it almost makes up in increased length. "Surplus" or unused lung is the site of danger in tuberculosis, whether it be found in an undersized or an oversized chest.

I am coming to have a strong suspicion that the question of respiratory capacity is one of general muscular development, and that the increase which unquestionably comes with gymnastic and athletic training of any sort is to a large extent due to the increased demands upon respiratory capacity made in the course of these exercises, which is again further responded to by the well-known increase in size of the heart and aorta which occurs in athletics. In other words, the boy who is taking gymnastic training, or, for the matter of that, who is developing vigorously and normally, is constantly calling into play more and more of his lung surface, already present, rather than causing any growth of new lung tissue. The ideal use of gymnastic and athletic training and of pulmonary and breathing exercises should be not so much to expand the lungs as to call into vital metabolic play as large a percentage of their area as is reasonably practicable. It is the quiescent, "waste" lung tissue which becomes a culture medium for the tubercle bacillus, and our aim in physical development should be to build up the body and heart symmetrically to the point of utilizing the entire lung area.

As is well known and recognized by all intelligent physical trainers now, muscular training is at bottom a matter of heart development, and all other considerations are secondary to this.

This round chest, is as my measurements first showed, and as the admirable recent paper of Besessen further demonstrates, a persistence of the type of chest normal in the boy of fourteen to sixteen years of age, an arrest in the transition of the chest from the almost perfectly round one of the embryo to the flattened adult form. Like the other physical defects alleged as predisponents to consumption it should probably be regarded as a sign of arrested and imperfect development. This view, I might add, is strengthened by the exceedingly interesting measurements of Evans upon the insane and other defectives in the Cook County Infirmary and of Arthur McGugan upon the chronic insane in the Michigan State Hospital at Kalamazoo, the average chest index of both of these groups of defectives being almost as high as that of the consumptives.

The conclusion to which we are rapidly being driven is that the cause, if discoverable, which turns the scale in favor of the victory of the bacillus in consumption, is to be found outside of the lung. This has led to the study of the conditions of other organs, among them the heart, which being enclosed in the chest and in close contact with the lung and intimately associated with the latter in the process of respiration, has received first, and perhaps the largest, share of attention.

From a very early period of clinical studies suggestions have been made connecting the condition of heart with tuberculosis. The fathers of physical diagnosis, Laennec and Louis, and later Rokitansky and Bizot, were strongly of the opinion that tuberculosis usually occurred in individuals with small hearts. Louis, in 112 autopsies upon tuberculous individuals found the heart enlarged

only three times, but subnormal in size in about half of the cases.*

Beneke in 1878 announced the same conclusion, based upon a large number of clinical examinations and autopsies. Both the fathers of the open-air treatment of tuberculosis, Bodington in England and Brehmer in Germany, were firmly impressed with the same belief, and in fact based their superbly successful treatment upon it, and Walther to-day holds the same view.

Fothergill declared that the typical consumptive was the individual with the small heart and the large lung. Spatz, quoted by Norris, collected data from 327 tuberculosis autopsies in which the relative size of the cardiac orifices, wall, and chambers were recorded. He found the heart in the majority of instances smaller than normal, with a tendency to left ventricular hypertrophy. The aorta was often found subnormal in caliber, especially in women.

Norris also quotes a recent study by Bouchard and Balthazard, who estimated the size of the heart in ninety cases of pulmonary tuberculosis during life by means of the fluoroscope. The results of their investigations showed two classes of consumptives, first, those who had contracted tuberculosis exclusively from exposure to infection, though not predisposed; second, those who were predisposed. In the first class the heart was normal in size; in the second it "possessed only one-half of its natural proportions." In other words, the heart had 0.5 square centimeter less area for every kilogram of normal body weight than would have been the case in the normal individual. Norris in his autopsies at the Phipps Institute found that in a very considerable number of cases of tuberculosis the heart is subnormal in size.

On the other hand, certain observers who have investigated this very point have come to varying or even determinately opposite conclusions, but the names are both fewer in number and less in weight than those already quoted.

Hirsch, for instance, found the heart enlarged in 44 per cent. and abnormally small in only 5 per cent. Renault came to similar conclusions, but both of them called attention to a factor which must be taken into account, and which partially explains this discrepancy. This is the distinct early hypertrophy and later dilatation of the right ventricle, which naturally follows from increased resistance in the pulmonary circulation due to the exudative and destructive lesions of the disease. Other observers have called attention to a slight but distinct tendency to hypertrophy of the left ventricular wall, and all have laid stress upon the readiness with which dilatation of both ventricular cavities may occur.

The ancient doctrine that valvular disease of the heart confers some sort of immunity against pulmonary tuberculosis and is seldom found in the tuberculous, has been pretty completely disposed of. It seems to have rested chiefly upon oversights of observation and conclusions drawn from inadequate masses of statistics. Nearly all recent reports, both clinical and from autopsies, show almost as high a percentage of valvular lesion in the tuberculous as in the rest of the population.

The only dictum which appears to have received confirmation from the later studies points in exactly the opposite direction, namely, that stenosis of the pulmonary orifice distinctly favors the development of consumption and makes its course much more rapid and hopeless when it does appear. This has been clearly shown in no less than three cases under my own observation in the last six months at the Portland Open Air Sanatorium.

My attention was first called to the size of the heart in tuberculosis from the point of view of comparative pathology. I was engaged for nearly two years in making autopsies upon the bodies of the animals dying at the Gardens of the London Zoological Society, in Regents Park, where, of course, I found large amounts and almost infinite variety of tuberculosis and tuberculous lesions. After I had accumulated a sufficient number of cases I began endeavoring to arrange them so as to accord with some biological factor. I, first of all, tested the question of the zoological affinities, but this was quickly found to have no bearing. Higher and lower alike, Bovidæ, Canidæ, Quadrumana, bird and mammal were found subject to the disease. I next investigated the question of food, and here a certain amount of parallelism became apparent. While tuberculosis can be found in both animal and vegetable feeders in captivity, it never becomes a common or frequent cause of death except in herbivora or mixed feeders. While present in the carnivorous Canidæ, Felidæ, Viverridæ, and Mustelidæ, and in the Raptores among birds, it never becomes of more than very low frequency. While it reaches the level of a pestilence in the herbivorous Bovidæ (cattle, etc.), the apes and monkeys in mammals and the Gallinæ (fowls, pheasants and turkeys) among the birds. But there are curious variations among vegetable feeders. For instance, cattle and antelopes are exceedingly subject to the disease, while the equally purely herbivorous, sheep, goats, and deer, as well as horses, zebras, and asses, are almost exempt. Some other factor must be sought, and after a number of false clues I began finally to work along the line of the relative size of the heart in proportion to the body weight; and here the results ranged themselves in parallel lines with surprising uniformity. Not one of the carnivora, either bird or mammal, was found to have a heart much less than one one-hundredth of its body weight while among the herbivora, both bird and mammal, none of these whose heart weight was in excess of this standard, was found to be susceptible, except in very moderate degree. Practically all of those who were susceptible were found to have heart-weights far below this proportion. This explained nearly all the inconsistencies among the different groups. For instance, among birds, the carnivorous eagle, hawk, owl, and vulture, whose heart is about 1-115 of their body weight, suffer from tuberculosis (6 per cent. of all deaths) than the mixed feeding water-fowl with their 1-100 hearts (3 per cent.) and the vegetarian parrots, with a heart 1-80 of their body (1 per cent.). These last show both the largest heart and the lowest tuberculous death rate among birds. Among the grain eaters, the turkey, the fowl, and the pheasant, with hearts of about 1-250 of their body weight are simply riddled with the disease(12 per cent.), which contrasts sharply with the parrot's heart of nearly triple the size and very low susceptibility. In mammals, the carnivora with their large hearts show (except in the case of the dog under conditions of domestication) a very low susceptibility; while among the herbivora the heart line runs absolutely between the sheep, deer, and goats, and the cattle. The deer, with a heart of 1-90 of its body weight is almost absolutely immune, while the antelope, in the same group, with a heart weight of 1-200, is exceedingly susceptible. The cow, with a heart weight of barely 1-250 of its body weight is, as every one knows,

* Quoted by Norris, "Tuberculosis and Heart Disease," *American Journal of the Medical Sciences*, October, 1904.

exceedingly subject to the disease, while the sheep, placed under even more unfavorable and unnatural conditions, with a heart weight of about 1-100, is almost completely immune. The same relation explains the marked immunity of the Equidæ (horse, ass, and zebra), even under domestication, for their hearts range from 1-90 to 1-100 of their body weights.

It is interesting to note in this connection that Brehmer in his investigation of the size of the heart in tuberculosis found that in strong, well-fed, and healthy oxen the heart was larger relatively in proportion to the size of the lungs than in those which were underfed or less robust.

With this apparent parallel in mind I have been carefully observing the cases of tuberculosis which have come under my own observation during the last five years, and have been struck, first, with the remarkable infrequency of cardiac hypertrophy in these cases, a condition in fact, which I have never found except in cases of valvular lesion, or of renal complications, and with the frequency with which the heart would be found to be, by all physical signs, undersized, as well as weak and rapid in its action, with a distinctly defective first sound. In fact I have come to regard the rate and quality of the pulse as the most important and significant single symptom, both in diagnosis and prognosis.

Since opening our Portland Open Air Sanatorium for consumptives in January last, some eighty or ninety cases have come under my observation. In all but fourteen of these, the heart was noted as weak, defective in its first sound, abnormally rapid in its beat, giving a peculiar soft, running, easily compressible quality to the pulse.

Owing to the pressure of work and innumerable calls upon our time connected with the founding and equipment of the rapidly growing institution, which enlarged from three cases early in January to thirty-five early in May, it was not possible to make as careful a study and measurement of many of the cases as might have been desired. The outline of the heart was, however, carefully mapped out, both by deep percussion and by ausculatory percussion in sixteen cases, with the interesting result of finding the average distance of the apex from the midline of the sternum to be 6.5 centimeters instead of the normal 7.5 to 9 centimeters (Vierordt). That this was not due to any displacement of the heart from pleural adhesions, or the pressure of a consolidated lung was clearly shown by the fact that the right border of the heart, instead of extending 4 to 5 centimeters from the midsternal line was found to average barely 3. In other words instead of extending a full finger's breadth to the right of the right border of the sternum it barely reached the latter line.

Of course I am aware that many factors must be taken into consideration in the tuberculous chest, which might render this method of outlining the heart not absolutely dependable. Most of these could, however, be excluded in this group of cases as in all of them the involvements of the lung were limited to the upper third, and did not invade the neighborhood of the heart, or mediastinum, and all were free from any pleuritic adhesions which were discoverable.

In only one of these cases was there any valvular lesion. That these measurements are at least approximately correct is also clinically corroborated by the fact that the three cases in women which showed the apex extending the least distance from the median line, namely 5.3 and 5 centimeters, were also those showing either the most rapid course of the disease or the most uncontrollable forms, while the three lowest among men, namely 6, 6.1, and 6.2, showed similar characteristics, the lowest of all having since died, and the next one being practically unimproved after nearly four months of treatment. The one case which came up to the average, namely 8 centimeters, was far and away the most vigorous individual of the entire series, showing only a limited lesion and making a rapid recovery. The average distance of the apex beat from the midsternal line in the sixteen cases was 6.5 centimeters, as compared with the normal distance (Vierord and Hornkotel) of from 8 to 9 centimeters. The extension of the cardiac dullness to the right of the midsternal line, averaged 2.8 centimeters, as compared with the normal 4 to 4.5 centimeters. While this series is far from large enough to serve as a basis for positive generalizations, it does furnish a distinct "straw" in corroboration of my former belief, based upon general and clinical grounds, that an undersized heart is closely associated with the development of consumption.

It will, of course, be argued, as already by Potain, that a certain amount of this apparent diminution in the size of the heart is due to the general wasting characteristic of the disease. While this possibility must be borne in mind, yet it hardly seems to me to be adequate to account for the degree, for two reasons. First, that both by these measurements, and by the autopsy—findings already referred to—the consumptive heart is from 30 to 40 per cent. less than the normal proportional size, while the total wasting of the body, even in the most extreme cases, does not exceed 15 to 20 per cent. In none of these cases examined did the loss of body weight amount to more than 15 per cent. and in most of them did not exceed 8 or 10 per cent. All were cases in the second or early third stage of the disease, able to be up and about and in fair flesh and strength. Moreover, as the classical experiments of Liebig showed long ago, the heart muscle in starving dogs is, next to the central nervous system, the very last tissue of all to suffer, and loses least weight in proportion. To put it very roughly the diminution in length of the heart in these individuals is from a normal of 12 to 14 centimeters to 8.3 centimeters, a deficiency of nearly 30 per cent., while the loss of body weight is no case exceeded 15 per cent., and averaged only about 8 per cent.

I think, then, that we are justified in regarding the singularly constant and otherwise inexplainable tachycardia of the consumptive as due not merely to the direct effect of the toxins upon the vasomotor center and possibly upon the cardiac ganglia, but also to a weak, inadequate and frequently undersized heart, with imperfect muscular development and a poor first sound. As to the prognostic significance of this cardiac defect, my small group of figures are absolutely in accord with the much larger ones already accumulated by Norris, Hirsch, and West. Hirsch, by the way, attributes the tachycardia to the undersized and imperfectly developed condition of the heart.

Of the thirty-one cases at the sanatorium which have been under observation for three months or more, sixteen presented a pulse of over 105 on admission. Of these sixteen, six are dead; in four the disease has progressed steadily and constantly, three have made moderate improvement, one has made a marked improvement, and in only one has the disease been temporarily arrested. Of the fifteen with a pulse below this level, four have had a complete disappearance of all symptoms and have returned to work, six are gradually improving, three are slightly improved, two are unimproved and

one is dead. The rate of the pulse was in no way parallel with either the stage of the disease or the elevation of the temperature. Some comparatively normal pulses having an afternoon temperature of from 101° to 103°, and a number of pulses of from 105 to 110, having an afternoon temperature of only 98.9° to 99.5°. The five highest cases, having pulses ranging from 134 to 165, were without an exception conspicuous not merely for the serious and rapidly progressive character of the disease (three of them being already dead), but also for the shortness of its duration previous to admission, ranging all the way from six weeks to seven months. On the other hand the five lowest pulse-rates, ranging from one subnormal pulse rate of 50, up to 90, the average being about 80, contained three of the seven recoveries and only one of the failures to improve, and the disease had lasted for periods ranging from seven to eighteen months, previous to admission.

In fine, I think we are justified in now regarding the heart in consumption in much the same light as we already do in pneumonia. In both diseases the seat of the principal and most rapid growth of bacilli and formation of toxins is in the lungs, but death occurs, not from interference with the respiratory area, but from poisoning of the heart ganglia and heart muscle. If in the individual attacked by pulmonary tuberculosis the heart happens to be undersized or imperfectly developed, or its muscle wall of inadequate vigor, or in a condition of malnutrition from insufficient food, confinement or overwork, we have, what I believe to be the most important single condition in the *habitus phthisicalis*. In short, the individual predisposed to tuberculosis is the one with the small, or muscularly inadequate heart and a lung large, or of normal volume. To develop the skeletal muscles, and through them, the heart, up to the level of the lung, should be our aim in prophylaxis. The first sound of the heart should have almost the same prognostic importance and significance as in pneumonia or typhoid fever.

What influence has this view upon our treatment and attempts at prevention? It helps to explain the admirable and excellent results which we had obtained from treatment, which, though originally conceived upon this ground by Bodington and Brehmer, has long since lost sight of this relation.

First of all, the putting of the patient at absolute rest as long as there is an afternoon temperature of 100° or over, is precisely of the same common sense logic which leads us to put our edematous and gasping patient with the big aortic regurgitant murmur to bed and keep him there.

Secondly, the enormous overfeeding with highly nutritious foods containing a large percentage of live proteids, in the shape of eggs and milk, tends both to neutralize the toxins, which are poisoning the cardiac ganglia and breaking down the cells of the muscle-wall, and to supply nourishment in a readily soluble form to make good the defect. Overfeeding is the weightiest part of our modern treatment of consumption.

Thirdly, the constant exposure to the purest and freshest of air gives adequate amount of oxidation with the minimum of depth and frequency of respirations and consequent reduction of the demands on the overtaxed heart. In short, the whole rationale of the open-air treatment looks much more toward the heart than it does toward the lung. The chief value of exposure to the open air is to enable the patient to overfeed.

In the drug treatment of tuberculosis, the keen chemical insight which led Jacobi to rely chiefly upon the prolonged administration of small doses of digitalis from which he has recently reported such excellent results, was based upon the need of improving cardiac nutrition.

Nor is its bearing less direct upon our measures for prevention, from the point of view of the *terrain*, the soil. It emphasizes heavily the value and importance of promoting normal, vigorous development of the entire body and of every organ therein harmoniously. Pulmonary gymnastics, as such, with a view to expand the lungs, are nearly as foolish here, as they are in acute stages of the disease, and our physical educators have now come to fully recognize that muscular development, however symmetrical and striking which does not proportionately build up and react upon the heart, is of little value from the point of view of vigor and resisting power. Your champion athlete is often a very poor life-risk—balance and reserve power, not horsepower, are what count in the long race of life.

I have been very much struck during the past ten or twelve years in my examinations of delicate, backward, and undeveloped children, in noting to what a marked degree the condition of the heart runs parallel, and indeed in some cases exceeds the other symptoms. The apex beat is almost invariably nearer the median line than normal, and in several cases I have found it at the age of 12 or 14 still in the fourth intercostal space. The little patients are often brought in complaining of shortness of breath on exertion, easy fatigue, faintness, persistent rapid and violent beating of the heart, palpitation, and in some cases attacks of what are almost like mild, functional angina. In fact, I have come to look upon a large percentage of these cases of physical backwardness in children as what may be roughly stated as the body being too big for the heart. Any measures which can be adopted to relieve the arrest of development and lowering of nutrition, or the removal of the most common single ailment in my experience —adenoid masses in the nasopharnyx—will be promptly followed by an improvement in the heart condition, which is just as striking as that in the general system. Those in whom adenoids are not present are frequently improved by small doses of either thyroid or suprarenal extract, or the two combined, and in some cases digitalis; and of course nothing is better for these conditions than life in the open air, cold bathing, and abundance of meat in the diet.

In fact the study of the heart in consumption brings us back, as does the study of all other organs, to a condition of arrested or imperfect development. The heart at birth and for the first two or three years of life is slightly but distinctly larger proportionately than in adult life. This relative hypertrophy, however, rapidly disappears, and by the period of puberty has been replaced by a slight divergence in the opposite direction, as the studies of Oppenheimer have shown. If this temporary hypoplasia, or hypotrophy, remains permanent we have precisely the condition which invites the development of pulmonary tuberculosis.

It is no mere coincidence that an arrest of the chest-shape at this same period is also found to be an important predisposing factor in the development of tuberculosis.

My conclusions as a basis for further investigation are:

That a weak, undersized, muscularly deficient heart, indicated by weak, rapid pulse and defective first sound, approaching embryocardia, is one of the most constant and significant conditions present in consumption.

That this condition in a considerable percentage of cases precedes the development of tuberculosis; the earlier in the disease this condition is presented, and the more striking its degree, the more serious the prognosis.

That in tuberculosis as in pneumonia and typhoid, while the chief seat of toxin producton is in the lungs or bowels, the *chief strain falls upon the heart, and death in the majority of cases is due to toxic heart failure.*

That this undersized and inadequate heart is, like the round, high-indexed chest, the persistence of conditions, normal at about the period of puberty.

That the condition of the heart should be our principal guide, in the diagnosis, prognosis, and treatment of consumption; if the pulse is slowing and strengthening, never mind the lung.

That a persistently rapid pulse without other ascertainable cause, should always rouse suspicions of incipient tuberculosis.

MASSAGE AND MOTION IN FRACTURES.

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In the first edition of my treatise on massage, in 1884, I spoke of massage as applied to fractures. What then seemed to be a paradox has become a therapeutical reality. At all times it was claimed that rigorous and prolonged immobilization, employed in the treatment of certain fractures, might cause disturbances in the future action of the nearest joint. A. Paré, J. L. Petit, Warner, Comper, Flajani, Ravaton, Morel Lavellé, etc., had proposed more or less complicated and rational means in order to prevent secondary ankylosis. Their utility was so little admitted that many surgeons in our time would not listen to them. Verneuil has well characterized the anxiety of those who mistrusted the former classic procedures; he calls it ankylophobia.

The advantages of early motion in the treatment of certain fractures were investigated in 1880 by the Surgical Society of Paris. Desprès reported a case to demonstrate its advantages. Verneuil replied that it was wrong to attribute secondary ankylosis to immobilization. The cause of ankylosis is the formation of a fibrous callus. The discussion shows that the surgeons were far from being agreed on the principles of rational treatment of fractures. Marc Sée and Lannelongue were of the same opinion as Verneuil, and always desired immobilization. Lucas Championnière and Marjolin were much less convinced; they admitted with Desprès that in some cases at least one might deviate from the general rule. The same question had been raised outside of France. Menzel of Triest had proposed passive movements every other day in fractures of the raradius; Starke resorted to early movements in fractures of the radius and fibula; Shede proceeded similarly in fractures of the humerus. We here meet with the same doctrinal controversies as in the therapeutics of anthropathies. The fundamental indication in the treatment of the loss of continuity of the osseous system, says Gaujot,[1] is to facilitate by every means the reunion, that is to say, the formation of a solid callus; movements, pressure, and simple effleurage ought to be avoided; the ideal type of apparatus is a muff closed at both ends, which maintains both osseous fragments in rigorous immobilization.

It has not been proven that massage, when properly performed in the beginning, hinders solidification. Very few surgeons are in favor of early applying apparatus to a swollen limb; of immediate immobilization of the fragments which are displaced and separated by a more or less abundant mass of blood. Most of them apply a temporary apparatus and leave it to nature to remove the primary inflammation before resorting to a permanent appliance. It seems to me quite natural to have recourse to massage in order to aid and hasten the absorption of injurious liquids. What we have obtained in traumatic hemarthrosis and in articular phlegmasias followed by effusion, we may likewise achieve here without any more inconvenience than in the former conditions. Thus we see that massage is indicated as an early step in treatment of fractures, serving as an introduction to another one and paving the way for it.

To make early motion an absolute rule is subject to many exceptions; its strict observance presents serious inconveniences in daily practice. Is it possible to formulate rules as regards methodical application of massage and passive movements, which might serve as a *vade mecum* to all practitioners, so that all might follow them without fear, being certain that no danger will follow? We believe not, for each case must be judged on its own merits, but in the majority of cases of simple fracture massage is useful in two stages: (1) at the beginning, because it favors the absorption of sanguineous and serous effusions and diminishes tumefaction and local tenderness; (2) after the removal of the apparatus, if such has been resorted to. It is only through massage that functional weakness, resulting from atrophy of muscles and induration or retractions in the neighborhood of the callus, can be overcome.

It was in my first edition of Traité du Massage that I proposed massage in the treatment of fractures. I am glad that I did tread this path, because nearly all that I proposed has been adopted and massage has become a therapeutic agent of incontestible utility in the treatment of fractures. In 1884, the same year that my work appeared, Berne performed massage in fractures of the fibula. In June, 1885, he stated his theories and the results of his experience in a public lecture at the hospital Bichat. He has since that time published an extensive work on massage, in which I am happy to see my ideas on massage were adopted and confirmed by this distinguished practitioner.[2]

At the first meeting of the French Congress of Surgery, in April, 1885, Tilanus of Amsterdam communicated a comparative study on the treatment of fractures of the patella by immobilization and by means of external coaptation and treatment by compression, massage, and movements. I will speak of this more extensively when I come to deal with these fractures and their treatment.

Dr. Lucas Championnière had already spoken of using massage in the treatment of fractures of the radius and fibula, but it was in 1886, after a large experience, that he made his communication on treatment of fractures with massage before the Société de Chirurgie in Paris. Yet he did not succeed in making it very popular. On the contrary, he had to sustain quite a vehement opposition on the part of his colleagues, who seemed to discuss the matter only from a theoretical point of view. Not possessing any personal experience on the subject, they

made criticisms based only on old, venerable doctrines, which were, if not erroneous, at least capable of complete revision. But we must confess that Lucas Championnière gained the victory and that it is principally due to his influence that massage in the treatment of fractures occupies at this moment the place it really deserves.[3]

The idea had made its way successfully when Maison's[4] and Lapervenche's[5] theses appeared. The method had, perhaps, gone a little too far; but this rapid popularity is by no means surprising. The effects of massage in fractures are excellent, and it is easy to see why. It is not necessary to have vast experience, nor is it necessary to ponder for a long time over the best method to be employed. In the hospitals, the surgical students can very well carry out the necessary manipulations under the guidance of a chief surgeon; the only thing to observe is that different methods of massage, of a possibly harmful character, are not used, as is so often done by empirics, often using awkward brutality.

In fractures, as well as in sprains, luxations, and chronic articular affections, the masseur intends to stimulate absorption of sanguineous extravasations, interstitial effusions, and by *contre-coup* to favor the reunion of the soft parts, to diminish the pain, improve local nutrition, and prevent articular stiffness and consequent atrophies. Nearly all authors who have studied this question admit that these results are nearly always attained.

Thus we see that massage in fractures now answers the numerous indications which partly had been foreseen in 1884. It facilitates the diagnosis, allows us to apply early a permanent apparatus when the latter is indispensable, because massage hastens the absorption of the sanguineous effusion and diminishes the swelling; it prevents future accidents because it does away with lengthy immobilization and stimulates local nutrition. I think, then, that massage applied in fractures will make the treatment enter into an entirely new phase and do away with accidents which almost inevitably followed their treatment under previous methods.

We will now take up its application in different fractures, discussing only those which are of more frequent occurrence.

Fractures of the *Humerus*.—Of all fractures, those of the humerus seem to be the least favorable ones for treatment by massage, and very few surgeons would have the courage to employ it. Nevertheless, in applying it we meet with some most brilliant results.

Fractures of the humerus present several varieties, according to their seat. Although massage is applicable to all varieties, we will here speak only of the fractures in the middle third of the shaft, which are the most frequent and consequently those about which we possess most experience. In such cases, if applied immediately after the accident and before the limb has been put up in an immobilizing apparatus, very gentle massage for about half an hour is of great benefit to the patient. After having repeated this a second time in the first twenty-four hours, the patient will be relieved of a good deal of his pain and the swelling will have been reduced to such a degree that the adaptation of the fragments will meet with much less difficulty than if this procedure of primary massage had not been resorted to. After ten days of immobilization, the bandage is removed and the limb is massaged for fifteen minutes. After the sitting, the limb is again immobilized. This mode of treatment is repeated every day. The bandage is definitely removed after three weeks, after which time the callus will be found sufficiently solid to allow the patient the use of his arm, no stiffness remaining.

Massage in Fractures of the *Radius*.—Many years ago, in 1887, I published a case in which massage had been employed with success on a fracture of the lower extremity of the radius. Still, the application of this procedure had been timed and limited; it had been employed for the purpose of reducing tumefaction and relieving pain; Mr. Gerst, for instance, followed the principle as laid down by Bizet. After the mentioned desired effect had been obtained, he immobilized the limb by means of a plaster of Paris dressing, according to the classical method. Since that time massage has often been applied in fractures of the radius, and particularly at its lower extremity. Lucas Championnière, Gosselin, Tillaux, Gurlt, and others, have studied the question of massage and immobilization in these cases. Schede, from Hamburg, returned to it in 1884 at a congress of German surgeons held at Berlin. He insisted upon the frequent occurrence of partial ankylosis of the hand and finger joints, of adhesions of the tendons to their sheaths, and of atrophy and retraction of the muscles. Nothing like this had ever been observed in cases of paraarticular fracture of the radius treated by mobilization and massage. In my notes I have set down twenty-four personal observations on fracture of the radius, most of them affecting its lower extremity, treated by massage and relative mobilization. Solid and complete union after fourteen to eighteen days. We have long ago abandoned the ideas of Malgaigne, who allowed his apparatus to remain for thirty days.[6]

Fractures of the radius are, as everybody knows, most common, and those seated in its lower extremity (Colles' fracture) are the ones about which I have the most experience. Massage is easily applicable in the treatment of this fracture, on account of the more or less superficial seat of the injured bone, the masseur not being obliged to work here through thick layers of interposed muscular tissue. There ought not to exist any fear of causing a displacement of the fragments, as these fractures as a rule are impacted.* Massage should not be too deep, on account of the often extreme sensitiveness not only at the seat of the fracture, but also of the joint itself, as well as of the sheaths of the tendons. But massage in the shape of effleurage is not the only maneuver to be employed. This has to be combined with passive movements executed not only in the direction of the flexion and the extension, but even in that of supination and pronation; they ought to be slight at the beginning, but as the treatment progresses one ought gradually to increase the motion.

I do not advocate the application of any other apparatus in the treatment of fractures of the radius than a roller bandage around the joint. The hand is suspended in a sling. This suspension is convenient, at least during the first days, when there is a great tendency to swelling of the arm and the hand. The arm is taken out of the bandage and massaged once a day, supported by an assistant or lying on a cushion. After a fortnight or three weeks the patient has entirely recovered; the callus has become solid. It is very rare that one is obliged to prolong massage after this time. One finds then that the wrist is perfectly supple, with the integrity of all the movements, and that the patient is able to use his arm perfectly well.

Fractures of the *Olecranon*.—I think that of all fractures, those of the olecranon most frequently

*In some exceptional cases there is displacement of the fragments, the lower one being pushed behind the upper one. These ought to be treated after the mixed method (mobilization and immobilization).

cause vicious union of the fragments. But in the opinion of Lucas Championnière the fibrous scar is much more perfect than that we observe in the repair of the patella; the one of olecranon is at the same time shorter and more solid, and consequently interferes less with the various movements of the joint. But there is another condition that interests us here more than the condition of the fracture itself, and that is the changes taking place in the neighborhood of the fracture. I refer to the humero-ulnar joint, which on account of the violence of the shock which has brought about the fracture, has become the seat of a more or less abundant effusion, a real traumatic synovitis. Besides, there is a rather rapid atrophy in the triceps, promoted by its being torn from its principal insertion, not to speak of the one produced later on from unknown cause, as in all extensors in the neighborhood of any joint which is the seat of an effusion. These complications—stiffness of the joint, as well as the inability to move the limb—which were the regular consequences of the old classical treatment, are never produced if from the start we apply massage, followed by subsequent passive movements. Although the posterior portion of the joint is the one which is principally affected, massage ought to be applied to the whole circumference of the elbow, even in the line of the fracture. On account of the great sensitiveness of the seat of the fracture, massage must be applied more gently over this region than in the neighborhood. To the triceps muscle massage can be applied with a certain energy from the beginning.

It is well known that in all affections of the elbow, traumatic or not, the re-establishment of the normal extension often leaves much to be desired. This may in some cases be hard to explain, but in most cases it is no doubt due to the imperfect repair in the insertion of the triceps to the bone. The passive movements of pronation and supination ought not to be forgotten. Passive extension has to be begun in the first days after the accident, as soon as the pain, much reduced by massage, allows this maneuver. There is no fear, as one may believe, that the passive motions may produce some trouble in the repair of the fracture, provided they are performed carefully and without any violence. Flexion must be carried out with special caution, as it may tend to separate the fragments. Moreover, Lucas Championnière lays stress on the well-known fact that movements of this kind come back very easily in a limb as soon as this has been massaged. Therefore the surgeon does not need to give flexion the same careful consideration as extension. It is then not necessary to resort to this movement before the fourteenth to the twentieth day after the accident. There is absolutely no need of an apparatus to put the limb in, as there is nothing to immobilize. Even the advantage of applying a roller bandage, as advised by me in speaking of fractures of the radius, may be open to discussion. In the beginning, if the swelling is considerable, it is good to have the patient lie down, the elbow resting on a cushion. But after some days this is no longer necessary, the patient carrying his arm suspended by a sling and walking about. Proceeding in this way, one reduces the healing to half the time required under the old régime. Under the old plan of treatment, several months were required to restore the elbow to its normal functions, and even then it was only seldom that this returned completely. The same applies, in a still higher degree, to the atrophy of the triceps with its consequences. After eight weeks the cure is generally complete. The elbow is now supple, and the patient is able to make all movements and without any pain. The repair varies a great deal with different individuals. With some of them the union is entirely complete and to such a degree that one does not notice any depression on the bone, corresponding to the line of fracture, while in others there remains a greater or lesser gap between the fragments. One is often able to speak of a real cure under this method of treatment by massage, while under the old method of immobilization this is far from true. Furthermore, we may state that, in fractures at the olecranon, as in fractures at the lower extremity of the fibula, no treatment at all would be preferable to the former treatment of immobilization. I could cite several cases from my experience in order to illustrate this fact; but I wish to quote only one, a particularly illustrative fracture of the olecranon:

A boy, ten years old, fell upon his elbow two months before his mother, an American lady, consulted me about him in Ragatz. This accident was followed by an enormous swelling of the joint, which never disappeared completely. With the exception of compresses of cold water, no special treatment was resorted to; no fracture of the bone was diagnosticated, and it was assumed that only a violent contusion of the elbow existed. It was not until four or five weeks after the accident, when most of the swelling had disappeared, that a fracture of the olecranon was detected. When I saw the patient for the first time there was a gap of one centimeter between the fragments, and these were united by a rather soft, fibrous tissue. The humero-ulnar joint was more or less stiff, although not quite so immovable as one would suppose on account of the relatively long time that had elapsed since the accident. Besides, all the muscles of the upper arm, and particularly the triceps, were slightly atrophied; yet the little patient was able to use his arm fairly well. During five weeks the joint was submitted to daily massage and passive movements—not neglecting energetic massage of the atrophied triceps muscle. When the treatment was stopped the patient had regained most of the faculty of using his arm, yet there was no change in the fibrous union of the fragments. I saw at the same time the two-years-older brother of my patient. He had fallen three years before in the same way as his younger brother, upon the elbow, but only a few days after the accident the diagnosis of a fracture of the olecranon had been made and the arm was treated with the old method of immobilization. The result of this treatment was that he had got a real ankylosis of the humero-ulnar joint, which permitted only a mobility hardly perceptible.

Fractures of the *Diaphysis of the Femur.*—It is easily conceivable that on account of the great tendency of displacement of the fragments in the fractures of the femur, massage as a secondary procedure, viz., when the limb has been put in an immobilizing apparatus, cannot rationally find its application. Notwithstanding the high authority of Lucas Championnière, I am sorry not to be able to agree with him, when he expresses himself as follows: "The patient is always put in the extension apparatus devised by Hennequain. If one likes to apply massage to the extended limb—opening the apparatus from time to time—the massage cannot bring about any new displacement of the fragments. The latter, although never absolutely immobile, cannot be made to override owing to the extension; therefore it is evident that no displacement, no deformity, can result from this procedure."* However this may be, it seems to me that the extension of the limb can by no means be pushed so far that it could not allow any further displacement of the

*Loc. cit.

fragments by the pressure communicated to them by massage. But if I hold that massage is not useful in these fractures as a secondary treatment, I find from experience that no objection exists to its application before the member has been put on the extension apparatus. Thanks to this primary massage and its analgesic influence, the pain may be greatly decreased and the swelling more or less removed. But, whereas in fractures of the humerus one seance is often sufficient to bring about the desired result, in fractures of the femur several sittings at intervals of a few hours are absolutely necessary.

Massage in Fractures of the *Neck of the Femur* (extra- and intracapsular) can play only an adjuvant part, as the principal treatment is the early immobilization. Lucas Championnière has shown that, contrary to what is generally admitted, the consolidation of the callus in both forms of this fracture is generally very easily obtained. It is not the lack of callus that prevents the patient from walking properly, but the various subsequent deposits in the joints, and the atrophy of the muscles around the articulation. But as the subject of this article is to show the influence of massage in the treatment of different fractures, it would lead us too far, if we tried to open a discussion on this very interesting matter—mobilization or immobilizaton in the treatment of fractures of the neck of the femur.

Massage in Fractures of the *Patella.*—It was for a long time supposed that the reunion of the divided fragments of the patella by an osseous callus was impossible. If this were true, the problem might be easily solved. We need not consider the callus, but simply concentrate all our attention on the joint proper, so as to preserve its movements without depriving the leg of its support. The first experiments conducted on animals seemed to confirm the old ideas relating to the nature of the callus. Gulliver could never obtain a perfect osseous union in dogs, when the fibrous capsula was torn. Astley Cooper was no more successful.[7] Since that period facts have accumulated showing that union really can occur. The possibility of osseous union is therefore not to be disputed, although it may not take place very often, or rather, more as an exception. But the main object is to know whether it presents enough advantages that we should strive for it, whether, after osseous union has taken place, the femoro-tibial joint is just as useful as before.

Surgeons have not considered the question from this standpoint; they have, and not without foundation, taken into consideration the inconveniences caused by too loose fibrous union. Péan says: "The mode of reunion causes an invincible obstacle to certain professions." The same author adds: "It is true that I saw in the service of Desormeaux a porter, who had not lost any of his strength, though the separation of the fragments was considerable." Others have observed the same. It is desirable that the question schould be definitely solved. Is an excessively long, fibrous band more inconvenient than a very short mode of union? Is the stiffness only temporary, and can we hope that it will disappear spontaneously? On the solution of this problem depend the indications of massage and passive movements in fractures of the patella. The first may be applied in two different ways: (1) At the beginning, as in fractures of the olecranon, in order to modify immediate articular inflammations, pain, effusion, and tumefaction. (2) It is used, when the immobilizing apparatus has been removed, to restore elasticity to the capsule and ligaments, and to cause the disappearance of hyperplastic products left by immobilization. The third method of procedure is much more bold than the preceding ones. No attempt at bringing the fragments together is here made. What the surgeon tries to avoid is future immobilization; he does not consider the union. Metzger, who has introduced this mode of treatment into our therapeutics, does not seem to have great confidence in surgical procedures, which are intended to limit the extent of the new method in uniting the fragments. Whatever may be done, the patient will always retain a deformed knee joint. The best he can do is to get accustomed to the affection and disregard the effects as much as possible, making use of flexion, extension, and support. The communication of Prof. Tilanus of Amsterdam, read at the first meeting of the Congress of French Surgeons, in April, 1885, brought the attention of the French medical body to this subject. The statistics compiled by Tilanus show, as he claimed, that fractures of the patella are more easily cured by compression, massage, and passive movements, than by immobilization. At about the same time Lucas Championnière and Tripier of Lyons tried to push the method so highly spoken of by the "Amsterdam School" to the front. A patient in Tripier's clinic with fracture of the patella was cured without the ordinary immobolizing apparatus by compression, massage, and articular movements. Leonardon Lapervenche has successfully performed massage in fractures of the patella, in the various clinics he attended. Metzger's bold intervention and Tilanus' communication form the foundation of a new method of treating fractures of the patella.

Ever since Hippocrates, surgeons have tried, in fractures of the patella, to restore the morphological integrity of the limb and to induce the formation of union in the divided bone. The new school regarded the matter from a different standpoint. Little importance was attached to the union or separation of the fragments, if the patient was able to walk and use his lower limb after, as well as before, the accident. It is better to possess a leg that can be used, that can be flexed and extended with the patella split in two, than to have a rigid and impotent leg with the patella intact. The occurrence of secondary affections is the same as in all intra- or para-articular fractures. They are muscular atrophy and rigidity of the joint. The object of movement and massage is to prevent atrophy of the crural triceps, to favor absorption of the synovial fluid, and prevent stiffness of the joint.

It is now important to find out whether the object in view has really been achieved, whether the femorotibial joint with a fractured patella is as good as one in which this bone is intact. Surgeons are far from being unanimous on this point. After having excited a keen interest, almost enthusiasm, this new method has arrived at a less brilliant stage. Are we to reject massage in the treatment of fractures of the patella because it is not always the sole indication? By no means. Even if we desire to obtain the best possible union, massage of the joint, as well as passive movements, executed in the beginning very slightly in order to prevent the separation of the fragments, later on, when the union has gained more solidity, with greater amplitude, may be used as adjuvant means. On the other hand, we must never lose sight of the condition of the crural triceps; we must overcome its atrophy, which is the most important cause of future functional disorders.

The method of Metzger seems, except in some very few cases, to have been entirely abandoned. The interposition of the fibrous tissues here, as in immobilization, offers an invincible obstacle to the union of the fragments, which remains insufficient and fibrous. No wonder that one has resorted to

application of sutures, as this method only is able to produce as osseous union—at least in a great many cases. Moreover, the application of sutures gives, at the same time, occasion to lay open the cavity of the joint, in order to remove the coagula of blood which one sometimes meets there even after weeks, keeping up an irritation of the synovial membrane. Proceeding in this way, one does not fail at the same time to act favorably upon the quadriceps femoris, removing any irritation originating from an affection of the joint and leading to an early atrophy of the muscle. Lucas Championnière, who at the Hospital St. Louis in Paris, had occasion to treat a great many fractures of the patella, has finished by adopting the suture method as the almost exclusive treatment of fractures of the patella, regarding immobilization alone as much inferior in establishing a firm osseous union.

Massage in Fractures of the *Lower Extremity of the Fibula.*—Nearly all the authors, including myself, who have studied massage applied in fractures, mention cases of fractures of the lower extremity of the fibula in which massage has achieved wonderful results. Thus Maison, Leonardon Lepervenche, Rafin,[8] and others, have published several cases treated with success after this method, but it is Lucas Championnière who, even here in his already cited work, has laid down the results of his great experience. In all of these cases, immediate inflammatory changes were prevented and union was easier than when treated by immobilization alone.

According to Malgaigne, complete union is brought about in thirty days, provided the position of the limb be not altered. But it is not only because the time necessary for union is shortened that massage is superior to any other method of treatment applied up to now. Everybody knows well the state the patient is in, when, after some weeks of immobilization, the plaster dressing is removed and he is allowed to walk. Not only tibiotarsal articulation, but often also the small joints of the foot, are the seat of an effusion, particularly in old people, and in those who suffer from rheumatism. Besides, all the muscles in the neighborhood of the joint are found in a condition of more or less marked atrophy. None of these unpleasant results will happen if you pursue the new method. When this is employed, the patient at the time he begins to use his limb experiences no difficulty at all.*

The analgesic influence of massage must not be underestimated, either. Thanks to the beneficial effect of effleurage, the pain at the seat of the fracture, as well as the pain which resides in the tibiotarsal articulation and the neighboring soft parts, disappears after a few days. It really seems as if the sprain, which almost always complicates the fracture, did play the principal part, and the fracture were of only secondary importance. How often has not a fracture been mistaken for an ordinary sprain, and been cured without any special treatment of it, to the great delight of the patient? There need not be the slightest apprehension that a displacement of the fragments will occur in these cases, if massage is properly performed. Even if in most cases, owing to the well-known deformity of the foot resulting from a fracture, it is not difficult to discover the existence of a fracture of this kind, still it is not always easy. The characteristic displacement may be very little pronounced, and the extensive swelling of the tissues, may prevent discovery of the seat of the fracture. After massage and the removal of a great deal of the edema, it will often be possible to make a positive diagnosis after a single séance.

The same treatment may be applied with similar good effect in cases in which there is a laceration of the internal maleolus, or where there is a real bimalleolar fracture. After every séance resort to passive movements. These must be performed carefully, particularly the first ones, avoiding great excursions. The only necessary apparatus is a roller bandage, similar to the one used in the treatment of fractures of the lower extremity of the radius, which is to be removed before every séance and to be reapplied after it. For a fortnight the patient is not allowed to walk. After this time he may be allowed to walk short distances.

The duration of the treatment in my cases lasted three weeks. In one case, where I had to deal with a very young man, eighteen days were already sufficient to obtain a cure. It is to be regretted that the great majority of physicians still continue to immobilize such fractures for weeks, to leave stiffness very difficult to overcome, and from which the patient will be a sufferer all his life. In these fractures, and perhaps more than in others, we may affirm that the sooner massage begins the more perfect will be the result.

Although it is true that in the great majority of cases sprain complicates fractures of the lower extremity of the fibula, there, however, exist certain varieties, which do not affect the articulation proper. But in these cases the joint is so near the line of the fracture that it suffers from the trauma, although no violent lesions are to be found in the joint or its immediate neighborhood (Lucas Championnière). Just as in fractures of the radius, no apparatus which deserves that name is to be employed; a roller bandage, removed every day to have the limb massaged, will be all that is required for our purpose, the patient resting on a couch. It is only in cases where there is a great tendency to displacement of the fragments that it would be necessary to immobilize the limb between the séances of massage. Passive movements are resorted to after the second or third day. Cautious movements of extension and flexion are executed after every séance. Moreover, as I have already said, the joints of the foot and toes often suffer in these affections, and it is necessary not to forget to massage and move these also after some days. Not longer than after fourteen days, walking may be allowed, moderately, of course, in the beginning. Exception to this general prescription is made in those cases in which particular conditions have necessitated the application of an immobilizing apparatus. After three weeks of treatment the patient is able to walk about without using any support and without complaining of any pain or inconvenience in his limb. Only very rarely slight pain remains, necessitating some occasional séances of massage.

Massage has also been used in fractures of the shaft of the fibula. It is clear that it cannot render the same services here as when applied to fractures in the neighborhood of the joint. It may be useful during the first days to ameliorate the disorders which follow the solution of continuity of the osseous levers, to alleviate the pain and to hasten the disappearance of the swelling; later on it may be used with beneficial effect to overcome the persisting functional weakness.

*I can recall, among other cases, theat of a diplomat, high in rank, who having been treated by a great surgeon in Paris, according to the old method, was not free from his trouble until five months had elapsed after commencement of treatment, while in a similar case that I treated at about the same time, in the person of another diplomat of about the same age, the treatment with massage and passive movements led to a complete cure in the course of only one month.

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SYPHILITIC EMPYEMA OF THE ACCESSORY SINUSES OF THE NOSE, WITH A REPORT OF FOUR CASES.*

By JOSEPH H. ABRAHAM, M.D.,

NEW YORK.

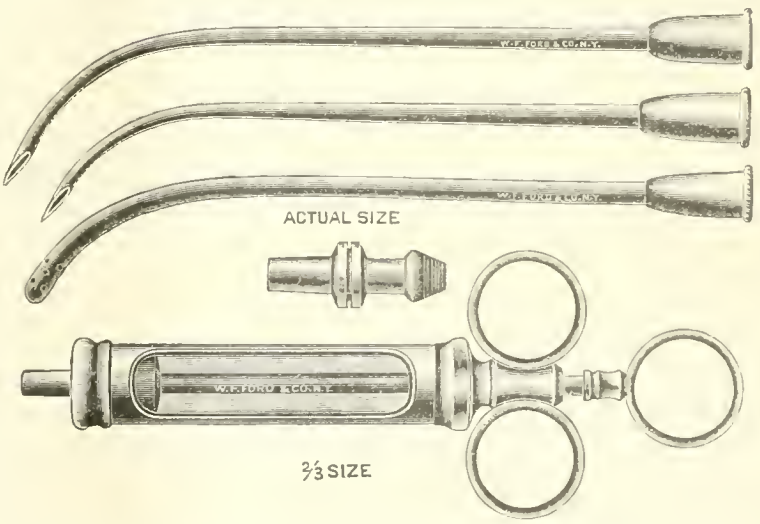
The oft-repeated assertion that syphilis attacks all organs and tissues of the body, proves true, in as far as laryngorhinology is concerned. Practical experience has time and again demonstrated the positive clinical fact that luetic lesions may invade any part of the upper respiratory tract in one degree or another; and furthermore, tertiary lesions seem to prefer the nasopharyngolaryngeal cavities and tissues to those of any other part of the body. This is especially true of syphilitic ostitis and periostitis of the nasal and superior maxillary bones. Syphilis of the accessory sinuses is rather uncommon. My experience has been limited to four cases. In these cases the suppuration was undoubtedly due to the breaking down of a gummatous periostitis and ostitis and secondary infection by the pathogenic bacteria. In all of these cases the pus was examined bacteriologically, and it was utterly impossible to isolate the specific microorganism on account of the varied forms of cocci, bacilli, etc., that were present. Had the patients followed their physicians' advice and continued under their care and treatment, I feel assured they would never have suffered from such marked tertiary lesions.

The chief symptoms in these cases were those of nasal discharge and fetid breath. Pain was not a constant symptom, but was always present during mastication, and was located along the upper row of teeth and antrum; at times it extended upwards along the inner canthus of the eye. Pus was present in all of my cases. In consistence it was thick and creamy; in quantity, very abundant; in color, a bright yellow; and its odor extremely fetid, foul, and disagreeable—so much so that after cleansing and syringing the nasal sinuses it was necessary to ventilate the room before the entrance of another patient. Two of the patients complained of gastric disturbances, which were probably accounted for by swallowing the purulent discharges.

In diagnosing these cases I relied upon the presence of a purulent accumulation in the middle meatus anteriorly, transillumination, and puncturing and aspirating the maxillary sinus through the nasomaxillary or inner wall of the antrum. On the latter method I place the greatest reliance in diagnosing empyema in the cavity of the maxillary bone.

The presence of pus is detected by first thoroughly cleansing the nasal cavities, and then directing the patient to incline his head to the opposite side for a minute, then downward and forward. On again examining the region of the middle meatus, if pus is present it will be detected adhering to the inferior surface of the middle turbinate anteriorly. On transilluminating the maxillary antrum a positive result was obtained in all of my cases, *i.e.* a darkened area over the maxillary sinus. We all appreciate that the presence of any new growth or other abnormality within the antrum will give a positive reaction to this method of diagnosis. Therefore the main point to differentiate in all of these cases, was the presence or absence of pus in the antrum. That leads us to the method of diagnosis, which I personally believe gives us the most positive results, and that is puncturing and aspirating through the inner wall of the antrum.

As several instruments have been devised for this operation, with advantages and disadvantages, I wish to present a set of needles and a syringe, which, in my hands, have proven the most practical, the least dangerous, and the most successful. They are made by drilling a hole through a solid graduated bar of steel, then filing to a point and curving the tip. The proximal end, as you can readily see, is twice the diameter of the distal



end or tip, combining the strength, delicacy, and durability, which I personally consider a great improvement upon the Maurice Schmidt-Schoetz trocar-cannula.

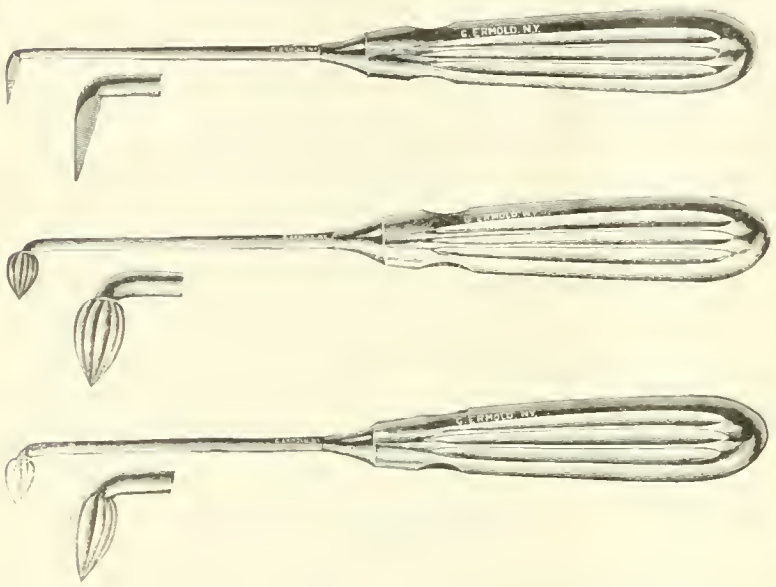
After thoroughly cleansing and cocainizing the middle meatus, the needle is directed to the middle meatus, just below the anterior ethmoidal turbinate, the point hugging the upper convex surface of the inferior turbinate, about three centimeters from the floor of the vestibule. The point should be directed toward the inner wall of the antrum, then with gentle pressure outward, with a distinct downward inclination. The point of the instrument will enter the antrum without the least pressure. By withdrawing the piston of the syringe, pus will gradually flow into the barrel, if present. In some cases it may be necessary to change the direction of the point, by gently turning forward or backward. If we fail to detect pus and are still in doubt, then puncture through the inferior meatus, always using the smaller of the two needles, which pro-

*Read in the Section on Laryngology of the New York Academy of Medicine, November, 1905.

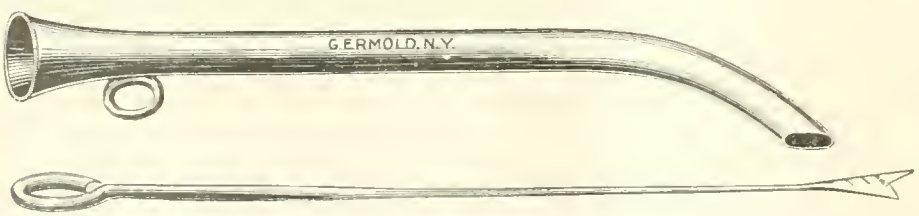
cedure is equally simple and requires no detailed description.

In describing the treatment of these cases, it is unnecessary for me to dwell upon the so-called specific remedies, their indications, action, and method of administering. Suffice it to say that the iodides were given immediately, beginning with small doses of five grains, three times a day, and increasing daily, one grain at each dose, until all physical signs of the gummatous infiltration had entirely disappeared. Daily flushing of the antrum with an antiseptic solution and cleansing of the intranasal space, was the only local treatment at this stage of the disease. In about two months all traces of the gumma had disappeared in the nasal cavity, but there remained a constant purulent nasal discharge, with a fetid odor, and in order to relieve the patients of these distressing and disagreeable symptoms, I found it necessary to open, curette, and drain the antrum, and to remove the necrosed ethmoidal tissue.

Operative procedure upon the ethmoidal cells



is somewhat simple. After thoroughly cocainizing with a five per cent. freshly prepared solution of cocain, the necrosed bone and granulation tissue are removed with a nasal bone forceps, curettes and snare. After curetting and cleansing, no hemorrhage being detected, blow upon the surface a



thick layer of thymol iodide and plug the nasal vestibule with antiseptic gauze. In some cases it may be necessary to plug the ethmoidal region with iodoform or other gauze, on account of hemorrhage, although in my series of cases plugging was unnecessary. The postoperative treatment is simply cleansing the surface with an antiseptic solution and general systemic treatment.

Operative procedures upon the antrum were confined entirely to the inner wall of the antra, through the inferior meatus, by puncturing and drilling with graduated sizes of burrs, and, if necessary, enlarging with forceps and curettes, making an oval-shaped opening, about 1.5 to 2 cm. in size. Through this opening the antrum was thoroughly packed with iodoform gauze, one-half inch wide, through a nasal gauze packer.

On removing the gauze, the cavity was irrigated through the perforated antral tube, drained, and zinc sulphate solution of varying strengths injected, and then thoroughly dried. In one case, an organic silver solution was injected, with very good results, and its application in increasing strengths was free from pain, which is indeed, a great comfort to the patient. In my series of cases it was not necessary to remove any portion of the inferior turbinated body.

Mr. A., aged forty-two; born in America; married; merchant by trade. Consulted me August 24, 1901, complaining of a slight pain in the left lateral wall of the pharynx during the act of swallowing, and of a constant unilateral nasal discharge, with a foul and disagreeable odor, of which he and his friends were perfectly conscious; a constant full sensation along the cheek bone, with pain along the upper lateral row of teeth, especially during mastication; headache over the eye. All of these symptoms were unilateral and localized on the left side of the face. On arising the patient complained of nausea, and at times vomited. Anorexia was a very marked symptom.

The patient was a strong, well-developed specimen of manhood, who contracted a genital chancre fifteen years ago, and was under the care of his family physician for four years, and reacted well to a course of specific treatment. He never complained of a single luetic symptom until within a few days of consulting me; but, as the physical examination will reveal, it is indeed surprising that so intelligent a patient should allow so marked tertiary symptoms to develop before consulting a physician. Examination of the pharynx—situated upon the left posterior faucial pillar, and extending laterally on to the wall of the pharynx, was an oval-shaped tumor, 2.5 cm. in its vertical diameter, and 1.5 cm. in its transverse diameter, with an irregular ulcer, situated about its center, covered with a dirty, purulent secretion. The rhinopharynx was bathed in a yellowish, purulent secretion, coming from the left posterior nasal cavity. The right nasal cavity was normal; the left nasal cavity was filled with a profuse foul-smelling discharge. After thoroughly cleansing the nasal cavity, the middle turbinated and ethmoidal cells were found to be twice their normal size, due to a tumor which practically eliminated all of their anatomic relationships. Transillumination of the antrum was positive. Puncturing and aspirating through the inferior meatus was also positive—so much so that words are inadequate for me to describe the sickening odor that penetrated my office when the pus was emptied, and it required liters upon liters of a strong formalin solution to neutralize the stench. Treatment: The iodides were immediately administered, beginning with five grains three times

a day, and increasing two grains at each dose daily. The antrum and nasal cavities were irrigated with an antiseptic cleansing solution. Pure chromic acid was applied to the broken down pharyngeal gumma. In one week a marked improvement of the gumma was noticed, and in three weeks all signs of the tumor and ulceration had disappeared, except the cicatrix. Marked improvement was noticed in the nasal symptoms, and on November 14, under anesthesia by 4 per cent. freshly prepared cocaine solution, I removed the ethmoidal cells and the major portion of the middle turbinated bone with forceps, snare, and curette, and drilled an oval-shaped opening into the antrum with burrs and enlarged with forceps, curettes, and chisels. Then I curetted the cavity and packed with iodoform gauze. After all inflammatory symptoms had disappeared following the operation, the antrum was irrigated and then sprayed with zinz sulphate solution, beginning with 2 per cent. and gradually increasing to 15 per cent. solution. The nasal cavities should be thoroughly sprayed with some bland, non-irritating oil, preferably alboline, before applying the zinc solution. The patient made an uninterrupted recovery, and was discharged January 1, 1902.

Mr. B., aged twenty-five; single; commercial traveler; born in America. Consulted me November 9, 1904, complaining that he had been unable to breathe or blow through the left nostril for about four weeks; there was also a nasal discharge on the same side. The left eye watered freely, and the tears ran over his face. Pain under the eyes most marked at the inner canthus. He denied absolutely and most emphatically that he ever contracted syphilis in any form whatsoever. Examination of the right nasal cavity revealed a bulging and edematous septum, with a pin head ulceration, situated at the antero-inferior angle of the septum. On the left side it was absolutely impossible to outline the anatomic relationships, on account of the cavity being filled with a large, ulcerating tumor, which filled the whole interior of the cavity. With a probe, necrosed bone could be detected on the septum and inferior turbinated bones. Anteriorly the probe passed through the septum, entering the right side, where the ulcer was detected.

Transillumination of the antrum was positive. A small piece of tissue was removed for microscopical examination, and immediately iodide of potassium was administered, as in the preceding case. Before the pathologist's report was received, a clinical diagnosis of syphilis was made. The growth began to fade away as if by magic under the iodide, and during its gradual absorption, adhesions could be detected between the middle turbinate and septum, with pus oozing from between the middle meatus. Immediate operative interference was indicated in this case on account of the gumma pressing on the lacrymal duct. Therefore, in five days I removed the major portion of the ethmoidal cells and middle turbinate, broke down the adhesions, and then relied upon the iodide of potassium for further effect, as it was necessary for the patient to leave the city on account of his occupation. During his absence he was treated by several specialists in other cities. In this case, on aspirating the antrum, no pus was obtained, but a marked resistance to the entrance of the probe was detected. No operation upon the antrum was undertaken, although I fully believe a gumma filled the antrum. The case progressed most favorably under the iodides, and a complete absorption of the gumma was obtained, and the normal function of the lacrymal duct was restored. This patient was discharged, cured, on May 1, 1905.

Mrs. C.; age, thirty-seven; married; one child. Consulted me in October, 1902, complaining of a swelling of the roof of her mouth, pain of gums and at roots of teeth, inability to breathe through either nostril, bilateral, foul-smelling nasal discharge, severe headache, and pain over entire face, which was most acute on the left side. Loss of appetite and gastric pains were present. She feels very weak, and finds it impossible to assume her usual daily labors. She was treated by her family physician for several weeks, and at his suggestion consulted me at the New York Polyclinic Hospital, for diagnosis and treatment. The general appearance of this poor woman was pitiable. A thin, pale, emaciated subject, who was so weak that walking was an effort; a typical mouth breather, with bulging alæ nasi. On tilting her face upwards and backwards, and without the use of a nasal speculum, both nasal vestibules were seen to be completely obstructed by a large polypus. Under the left eye and near the inner canthus, a broken-down oval-shaped tumor, 2 cm. in diameter, could be seen, discharging pus profusely. With a probe, the left antrum was entered without any effort, and necrotic bone detected in all directions. With a speculum and probe, both nasal cavities were found filled with polypi, and here and there necrosed bone. The cartilaginous septum was perforated. On opening her mouth, an oval-shaped tumor, involving the major portion of the left alveolar and palatine process of the superior maxillary bone was disclosed, extending inward nearly to the middle line. Such, in a few words, is the picture of the unfortunate individual whose deformity and whose sufferings were horrible.

The patient denied syphilitic infection; but on account of her weakened condition, I decided upon immediate operation, and removed a mass of polypi and necrosed osseous tissue from both nasal cavities, partially restoring nasal respiration. Iodide of potassium and tincture of ferrichloride were prescribed, beginning with five grains of iodide of potassium, and increasing one grain three times a day. Hygienic and dietetic treatment were also prescribed. A portion of the growth was examined microscopically, and the pathologist reported it to be syphilitic. The patient returned in one week, and I shall never forget the changed expression from one of impending collapse to that of marked improvement. As the iodides were gradually increased, the tumor slowly diminished. On account of her anemic condition, gastric irritability and weakened stomach, it was necessary to administer the iodides in peptonized milk, after the method advocated by Dr. Delavan. This was necessary when she was taking twenty-four grains of iodides. She continued to improve, and I managed to push the drug to forty grains, three times a day; but as her gastric symptoms increased, I changed the iodide of potassium to iodide of sodium. During this time the nasal cavity was cleared of the polypi and diseased ethmoidal cells, the left antrum opened through the inferior meatus, curetted, irrigated, and packed with iodoform gauze. The patient improved in weight and general appearance. The broken-down gumma of the

face disappeared, and the gumma of the inferior maxillary region gradually faded away.

My ambition was to obtain a complete recovery, but as the patient lived in a neighboring village, and her household duties demanded most of her time, her visits became few and far between. In four months I lost sight of her entirely, and no one regrets more than I my inability to give a report of complete recovery, and a more detailed account of the case. I requested her to bring her husband for examination, which request was never fulfilled. The young daughter, aged six years, was rather anemic, but otherwise a healthy child.

Mr. D.; aged thirty-five; actor; married; no children. Consulted me May 16, 1905, complaining of constant nasal discharge on the left side, with marked pain in the cheekbone, and especially on mastication. He contracted a genital chancre fifteen years ago, and was treated by a specialist in genitourinary diseases for three years, with good results. Two years ago he consulted a prominent rhinologist, who diagnosed syphilitic empyema of the antrum, and operated on the left antrum, drilling into the antrum through the inferior meatus. The cavity was curetted, packed, and later irrigated with antiseptic solution. On account of the patient's profession, which frequently called him out of the city for a considerable length of time, he was advised to irrigate his antrum, and obtained fair results. On May 16 he consulted me, and on examination I found a slightly inflamed mucosa, with a purulent secretion in the left nasal cavity. Transillumination was positive, and on irrigating through the previously-made opening, foul-smelling pus was obtained. I advised curettage, and under cocaine the antrum was gently curetted through the patulous opening in the inner wall. Argyrol was injected, beginning with a 10 per cent. solution, and gradually increasing to a 30 per cent. solution, with marked improvement. As I was leaving the city on May 25, Dr. Levy was kind enough to take charge of this patient, and I herewith present his report; he says: "When I first saw this patient, the discharge was of a purulent type. On washing out the cavity, three days later, I found that the discharge had lessened considerably, and the character had become mucopurulent, with the mucous element predominating. A silver preparation was used daily, preceded by washing the cavity with a mild solution of boric acid, and the discharge became less each day until finally, on the fourteenth day, it was found to have ceased entirely, and the first washing returned clear. The patient was entirely relieved. On the whole, this case demonstrates very clearly the efficiency of thorough irrigation and medication, with a combined astringent antiseptic."

In conclusion, I think we are justified in claiming that no syphilitic patient is free from the possibility of tertiary manifestation, in one form or another, even after a thorough course of antisyphilitic treatment, lasting two years or more; therefore, all syphilitic patients should be advised to consult their physicians every one to three years subsequent to their treatment. Secondly, a positive diagnosis of empyema of the antrum of Highmore can be arrived at with the aspirating needle, properly applied; thirdly, syphilitic empyema of the accessory sinuses quickly responds to specific treatment and conservative surgery; fourthly, the administration of iodides in small doses, and increasing one grain three times a day, has proven of greater value in my hands than large doses rapidly increased; fifthly, unless urgent symptoms demand immediate operation, we should delay operative interference, in order to obtain as great an absorption of the gummatous infiltration with the iodides as possible.

616 Madison Avenue.

SPLENIC LEUKEMIA.

By H. J. THOMPSON, M.D.,
LA PORTE, IND.

Miss E. H. came to me August 24, 1904, giving the following history: Age, thirty; single; nationality, American; occupation, teacher.

Family history: Father living, age over seventy; mother died of organic heart trouble in January, 1904, age not given; one sister died of typhoid fever in 1901; one brother died of typhoid fever, time not given. The patient has one sister living who is in excellent health.

Past history: Illness, none severe. In December, 1901, had, as she expressed it, nervous spasms, the result of overwork and of the shock occasioned by the sudden death of a sister.

Present history: In November, 1902, she fell backward, striking her back on a stone, and was ill for a few days. In December, 1902, she awakened one morning and discovered she had lost the use of her lower limbs; she had no pain in them but was confined to her bed for three weeks. Some time later she continued teaching but had to be carried to the schoolroom each day and had but little use of her limbs until June, 1903. During that summer her health was only fair. In September, 1903, she went back to teaching. Her limbs were weak and about this time her left side began to pain; she also noticed a growth in the left side of the abdomen; it was painless but somewhat tender, but the patient did not stop teaching. In December she caught a severe cold and was in bed two weeks with grippe, all this time gradually growing weaker.

In January, 1904, her mother died very suddenly, leaving the patient in a state of collapse; she was in bed for nearly eight weeks, had an attack of gastritis with severe attacks of vomiting which became almost continuous, and was very nervous and depressed.

In April, 1904, had an attack of heat prostration and was in bed for five weeks, in fact she was in bed most of the time up to one week before consulting me. She was dizzy and nauseated whenever she stood or tried to walk; she slept very well; her appetite was fair, but she had much nausea; the bowels were constipated; she suffered from continued soreness and pain in the left side; the action of the kidneys was sluggish and there was slight pain when urinating. Her last menstruation was in July of the present year; previous to this patient had been normal with no pain.

Physical examination: Skin very dark in color, especially over the abdomen.

Digestive system: Mouth, stomach, and bowels, negative. The spleen extends down to the crest of the ilium, filling the whole left abdominal cavity, also extending over to the right side of the median line (upper); it is tender on pressure. The liver is only slightly enlarged.

Circulatory system: Blood-vessels and heart, negative; the pulse is of low tension, irregular, and compressible.

Respiratory system: Examination negative.

Nervous system: The patient is very nervous, noises of every description being troublesome to her,

and the least excitement makes her nervous and unstrung.

Genitourinary system: Kidneys and bladder, negative; there is a burning pain in the urethra at the termination of urination.

Examination of urine: Quantity diminished, general appearance very cloudy with precipitation of amorphous urates, probably; specific gravity, 1,020; reaction, acid; albumen, none; sugar, none; indican, a trace; urea, 1½ per cent.

Examination of blood: Reds, 3,250,000; whites, 650,000; hemoglobin, 60 per cent. No differential count made.

When the patient came to me she was having afternoon elevation of temperature of about 2°, with slight difficulty in breathing. Soon after this she caught a cold which lasted several days, was very exhausting to her, and increased the temperature. She was not able to walk at all, and in fact was scarcely able to stand unless supported.

On September 3 her weight was 113 pounds, waist measurement, 34 inches; September 24, weight, 109 pounds; October 15, 113 pounds; November 5, 114 pounds, waist measurement, 32 inches; November 26, 114 pounds, waist measurement 32 inches; December 3, 115 pounds, waist measurement 30½ inches; December 10, 116 pounds, waist measurement 30 inches.

The first Roentgen-ray treatment was given on September 10, and from that time to December 10, inclusive, a treatment was given on an average of one every five days. All treatments were given with the patient lying down, she being unable to sit up. They were given with a moderately hard tube, duration fifteen minutes, distance from four to six inches, and over the splenic region only.

On December 11 the menses appeared for the first time since July 1, 1904. Menstruation continued for six days, with very little pain; the flow was good and fairly normal in color.

As the treatments progressed the stomach symptoms, nausea with inclination to vomit, ceased, the appetite improved, and the bowels acted quite regularly without the use of drugs. She was given strychnine nitrate 1-30 grain three times a day before meals. This was not given continuously, but at stated intervals to stimulate the circulation, the pulse being of low tension and at times irregular, with increased frequency; the strychnine also helped the respiration, which was labored at times.

Immediately after the mensturation ceased the patient returned home and did not have any more treatments until the middle of February, 1905. During her stay at home she had two menstrual periods which were normal in every way. Practically no medicine was given, but she continued to gain in strength and had a good appetite. The latter part of her stay at home she began to walk alone, and finally was able to walk two to four blocks unassisted.

She again came under my immediate charge about February 15, and continued with me until about the first of June. The February menstrual period was delayed one week; there was much pain and soreness over the left side. The March period was delayed with symptoms of intense pain in the left side of the back, which was relieved by the use of the Rogers lamp.

In April she was able to walk and to go upstairs without assistance. Her walks increased in length each day until it was no trouble for her to walk two miles. She continued to gain in flesh and her weight increased to 132 pounds; waist measure was diminished to 27 inches; her appetite was good. There was no stomach disturbance whatever; the bowels acted naturally and sleep was good. The April and May menstrual periods were perfectly regular and with no pain over body. During the last two months that she was under treatment the lower limbs were swollen at times. This was probably due to a rheumatic tendency.

From February to the time of discontinuing treatment, in June, she received three Roentgen-ray treatments a week—all of the second course being given with the patient sitting up. Duration of exposure, location, position, and tube used were the same as in the first course. No treatments were given during the menstrual period in either seance.

The patient left for home about June 1. The trip, which was a long, tedious one that necessitated a change of cars, having long waits, etc., was made alone, the patient feeling no ill effects whatever from the same. During the summer she lived out of doors, was able to care for herself entirely, and assisted in the house as well. Her weight increased to 137 pounds and the waist line was reduced so that she could wear a waist and skirt with belt instead of a loose gown.

At the time she discontinued treatments in June I told her that she should have more treatments and the following examinations made in Chicago during the latter part of August shows the condition still present although very much improved.

Urinalysis.—Qualitative examination: Quantity, 140 c.c.; physical condition, very cloudy; specific gravity, 1019 at 15°; reaction, acid; color, yellow; odor, negative; mucin, sugar, blood albumin, and bile, absent; amorphous urates present.

Quantitative examination: Urea, 2 per cent; indican, very slight trace; acidity, 40°; normal acidity, 30° to 40°.

Microscopical examination: Casts, none; blood, absent; leucocytes, present; epithelial cells (squamous), numerous; uric acid, absent; urates, present.

Analytical report of blood: Percentage hemoglobin, 0.75; number of red cells, 4,160,000; percentage red cells, 83.2; corpuscle hemoglobin index, 84; number white cells, 120,000; polymorphonuclears, 61.5; large mononuclears, 11.5; smalll mononuclears, 20; eosinophiles, 1; myelocytes, 6; nucleated red cells to 100 red cells, 1; characteristics of cells, some irregularity of reds.

Examination of eyes: Right, 15/20+50 cyl.—ax. 90° 15/15. Left, 10/20+50 cyl.—ax. 105° 15/15; normal.

The retinal vessels, veins in particular, were abnormally tortuous—veins twice as large as the arteries, instead of 3 to 2 (normal). In the region between the macula and nerve head were numerous yellowish white spots which the examiner was satisfied were made of leucocytes with a few red cells. These whitish exudates were not in any case surrounded by red margins as is almost invariably reported. There were no such conditions in the left eye. The nerve head in each eye was somewhat hazy due to exudates.

Examination of ears: R. Whisper, 6 inches; watch, 0; forks, c—c2; Renne+. L. Whisper, 15 feet; watch 40/40; forks, all; Renne +.

The ear conditions are no doubt due to exudates, either in the cochlea or in the cochlear nuclear in the medulla oblongata. A number of cases of leukemia are reported in which ear disturbances occurred simultaneously with eye troubles.

Distaste for Alcohol in the Antarctic Regions.—Mr. Wilson, the junior surgeon on the *Discovery* during Capt. Scott's Antarctic expedition, states that the taste for alcoholic drinks dropped suddenly when he and his colleagues entered the ice region, and that the disinclination increased as time went on.

ASPIRATION OF THE TYMPANIC CAVITY AFTER PARACENTESIS; A VALUABLE AID IN THE TREATMENT OF ACUTE OTITIS MEDIA.

By PERCY FRIDENBERG, M.D.,

NEW YORK.

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The once radical dictum of surgery "ubi pus ibi evacua" has long since made way for the principle of removing possible sources of infection, of freely draining areas which might produce pus or other septic material so that, if possible, no evacuation of pus should become necessary. The application of this principle to otology has led to the general use of early and free paracentesis in otitis media acuta, especially in children, and to a recognition of the value of this procedure in the prevention of otitic complications. In spite of an occasional sporadic attempt to retrograde to expectant treatment, Politzerization, and to the *vis medicatrix naturæ*, in spite of theoretical observations as to the benefits of spontaneous perforation, the medical world, and to a certain extent the lay world is fortunately becoming more and more convinced of the benefits of early opening of the tympanic cavity. This education will have been completed when it is generally understood that we do not "open an abscess in the ear," but, in most cases, open the ear to prevent an abscess.

If this object is to be attained, free drainage is of importance, and any measure which will assist the clearing of the tympanic cavity or aid free drainage is of value. The procedure which I am about to submit on the basis of an experience of about six years is the evacuation, by suction, of the tympanic cavity immediately after cutting the drum. For a short time I used the Siegle pneumatic speculum for this purpose, but found it mechanically unsuited besides being difficult to sterilize. Since 1901 I have been using a small glass bulb about five-eighths of an inch wide, shaped like an olive with a very blunt tip. The neck of the glass bulb is stuffed with sterile cotton and attached to a short rubber tube, after both bulb and tube have been thoroughly boiled. Immediately after the paracentesis is made, the glass bulb is pressed against the external meatus plugging the canal hermetically. Suction is then applied and gradually increased until there is a flow of fluid from the middle ear and the glass bulb fills more or less. This suction can be made by using an ordinary piston syringe as an aspirator, or the lips of the operator may be applied directly to the rubber tube. I am aware that this suggestion is rather repugnant to the esthetic sense, but the tube is clean, and the sterile cotton in the neck of the glass bulb prevents anything but filtered air passing up into the rubber tube. The effects of this aspiration by energetic suction are strikingly gratifying. There seems to be less pain after the paracentesis than when an incision only is made. The otitic pain is more promptly and lastingly relieved. The paracentesis opening does not have as great a tendency to become closed, so that a second incision of the drum is less often required. Drainage is much more free. It is quite remarkable to see how much fluid is removed. Several drams is not an unusual quantity. The family physician has on various occasions expressed his surprise that "all that stuff" should have been in the ear. The fact is that "all that stuff" was not in the ear but in the mucous membrane, to a large extent, and was poured out or oozed out into the tympanic cavity in response to the aspiration. In this depletion of the mucosa and the flushing of the middle ear with uncontaminated serum of admittedly antitoxic and bactericidal efficiency I recognize two valuable factors, in addition to the mechanical one of evacuation. The strong negative atmospheric pressure exerted on the paracentesis wound causes its edges to gape and thus counteracts a tendency for it to be occluded by clot and heal together. The removal of inflammatory exudate from the middle ear and the dilution of the contents with blood-serum also works against septic clot-formation. The procedure of aspiration has a certain diagnostic importance, especially in the case of very young children and infants, where owing to anatomical peculiarities and mechanical and optical difficulties we are sometimes in doubt as to whether the drum has been freely opened or not. The application of suction will immediately settle this question.

The method described above has worked very well in my hands. As I have used it invariably for the last few years, I have no comparative statistics to offer with regard to results with and without its application. I know that I very rarely see mastoiditis develop after I have opened a drum early and evacuated the tympanic cavity by suction.

Of course, it must be admitted that mastoiditis is not, or should not be, more than an infrequent complication of otitis media seen at an early stage. My good results may be only coincidence. If so it is a coincidence I should like to see repeated, not only in my own practice but in that of all otologists, to whom this procedure is recommended in the hope that their combined experience may soon determine what value the method possesses.

114 West One Hundred and Twenty-sixth Street.

Pinworms as a Cause of Appendicitis.—David F. Monash states that pinworms are prone to invade the appendix from their habitat in the cecum. Pocketed in the appendix, they and their ova cannot be dislodged, and by reinfecting the intestinal tract which has been thoroughly cleansed for relief of pinworms the disorder is obstinately continued. Accumulating in large numbers, they block the lumen and set up violent spasmodic contractions of the appendix in its efforts to expel the contents, thus coinciding with the clinical picture of appendicular colic. After a portion is expelled relief follows and the colicky attack is not repeated until the appendix is again distended by large numbers of the parasites. Repeated attacks are associated with pathologic changes in the mucosa as shown in cases reported. The sharp, fine-pointed tail of the female worm, which causes irritation of the colonic and rectal mucosa, also produces catarrhal changes in the appendix, thereby paving the way for bacterial invasion of the deeper tissues. Anthelmintic treatment is useless, and in an acute attack even dangerous. Removal of the appendix relieves both affections.—*American Medicine.*

A Case of Chronic Suppurative Inflammation of the Middle Ear, with a Late Development of Serious Mastoid and Tympanic Symptoms.—D. B. St. John Roosa alludes to cases which he occasionally sees in which a patient who has undergone an operation upon the eye suffers from recurrent pain after the after-treatment is well advanced, which the local conditions are not sufficient to explain. Such patients are usually supposed to have at one time in their lives suffered from intermittent fever, and the administration of quinine in these cases subdues and abolishes a pain which the local treatment does not reach. In this article, he reports the history of a patient with chronic suppurative inflammation of the middle ear. There was a late development of serious mastoid and tympanic symptoms. The mastoid was opened, pus was evacuated from the antrum, granular material was removed, and most of the tip of the mastoid was chiseled away. The tympanum was thoroughly curetted. Recovery being delayed, an examination for the malarial parasite was made. The results, however, were negative. Nevertheless, the writer ordered that quinine should be administered. The fever abated, the mastoid and tympanum both healed, and the patient when discharged was in excellent general condition. The writer warns against the temptation to impatience, and further operative treatment for a suspected brain abscess, in cases were thorough local operative treatment does not promptly yield desired results.—***The Post-Graduate.***

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, March 3, 1906.

HEBOTOMY.

ALTHOUGH it is now something over ten years since Gigli began his efforts to rehabilitate the principle involved in the practically discarded operation of symphyseotomy, by developing the technique of what has come to be called lateral pubic section, or hebotomy, it is only comparatively recently that his claims have received the degree of consideration they seem to merit. Largely through the impetus given by the active proselytizing of van der Velde, the procedure has been tested at a considerable number of European obstetrical clinics, so that Gigli, in addressing the Viennese Society of Obstetrics and Gynecology in May, 1905, was able to report eighty-five cases of hebotomy, and Bauereisen has more recently (*Münchener medizinische Wochenschrift*, December 19, 1905) collected enough others to bring the number up to 107. Four of these patients died, one as the result of the chloroform anesthesia, one through sepsis said to have been present before the operation, and two patients operated on by Baumm, though Gigli expressly disclaims all responsibility for these two, as he alleges that the innovations in technique introduced by Baumm seriously altered the nature of the procedure. Even admitting the mortality of 4 per cent., however, Gigli points with pride to the advance made since the days when the operation of symphyseotomy, devised by Sigault, which at the best has a mortality of 11 per cent., was heralded as a great step in advance.

Young as the operation is, it has already been made the subject of many modifications. Gigli's original recommendation was to make a skin incision, beginning at the mesial border of the pubic bone and running downward and slightly outward to the so-called subpubic tubercle. The Gigli wire saw was to be passed behind the bone from above downward by means of a suitable director under control of the fingers in the vagina, and the bone sawed through in the line of the skin incision. Other operators have changed the line of section somewhat, but perhaps the most important suggestion is that of Döderlein, who has transformed the procedure into a subcutaneous one by making only a small transverse incision over the spine of the pubis, through which, under the guidance of the vaginal fingers, a blunt curved needle is forced behind the bone and against the skin of the labium majus, which is slightly nicked with a knife to allow the instrument to emerge and draw the saw after it from above downward. Others advocate passing the saw from below upward, and special carriers, such as that of Seeligmann, have been devised. The recommendation to clear the way for the passage of the blunt director by burrowing through the tissues behind the bone with the finger, as Döderlein originally recommended, is discountenanced by many authors. Some operators have advised applying the saw as a prophylactic measure in cases in which it seems likely early in the labor that a material disproportion exists between the fetal head and the bony outlet. If section of the bone becomes necessary, at the proper moment a few to-and-fro movements of the hands suffice to effect the division, while if the birth can be effected without this aid, the saw is withdrawn and the patient will have suffered only two insignificant cutaneous incisions. Bauereisen believes it will be found advisable in many instances to allow the labor, if possible, to be terminated by the patient's own expulsive efforts, even if considerable time must elapse after the operation, but most authors empty the uterus immediately after division of the bone. The immediate dangers of the operation are said to be very slight, primary union is reported in nearly every instance, and hemorrhage is said to be easily controllable by pressure, especially if care has been taken to hug the bone closely in passing the saw, so as to minimize the injury to the cries of the clitoris. The bladder was wounded in one reported case, however, and the occurrence of hematomata is frequently noted in the case reports, though they do not seem to have caused complications of moment.

The advantages claimed for hebotomy over symphyseotomy are sufficiently great in the eyes of its advocates to entitle it to serious consideration in cases of contracted pelvic outlet. According to Stoeckel (*Berliner klinische Wochenschrift*, January 29, 1906) enough room is gained to permit the passage of a living child, even with a true conjugate of only 6.5 to 7 cm., and this is effected without incurring the immediate and remote dangers attending symphyseotomy. The latter operation is characterized as essentially unsurgical as it involves the division of a joint, and the concomitant great susceptibility to infection, while in pubiotomy secure repair is possible and the risk of injury to clitoris, urethra, or bladder is reduced to a minimum. The reported cases show that the patients do not experience any difficulties in walking after pubiotomy, and the after-treatment of the operation is very simple. Most operators content themselves with applying a very simple form of retentive dressing, such as a strap of adhesive plaster, while Bauereisen goes so far as to dispense with any effort to immobilize the sawn ends of the bone, and even encourages motion in order to secure fibrous union. This is rarer, he says, than bony union, but is advantageous as it favors an enlargement of the pelvis which would facilitate future deliveries. In two cases of his own and one of van der Velde's this increase amounted to as much as 1½ cm. in the true conjugate diameter.

It is still much too early to express an opinion as to the value of Gigli's operation. With but few exceptions the continental writers praise it, but the number of observations is still too small to permit of satisfactory estimate of its probable destiny in the annals of midwifery. In view of the modern tendency invariably to condemn perforation of the living child, in hospital cases at least, it is highly desirable not to neglect the development of any

method that may, as the friends of hebotomy claim for it, prove simple, safe, and effectual enough to enable the practitioner, cast on his own resources, to be reasonably sure of saving both maternal and fetal life when he is confronted by conditions which would otherwise place him in the dilemma of either performing cesarean section or resorting to the painful necessity of sacrificing the life of the child.

LIGHT AS A DISEASE PRODUCER.

Everyone is familiar with the phenomena of freckle, tan, and sunburn as the result of exposure to solar rays, especially in the summer season, and most physicians recognize the sun's influence in intensifying at least various forms of chloasma and pigment staining of the skin. The more serious effects of light in the production of cancer, however, have not received the attention the subject merits, and it is only now when the *x*-ray as a causative factor in carcinoma is attracting notice that the influence of ultraviolet and other rays is being investigated in this direction.

Charcot was probably the first to attribute the injurious effects of light on the skin to the chemical rays, and experiments with the actinic ray of the arc light in producing artificial summer hydroa by Möller and others confirm the belief that ultraviolet rays are at fault, and not the heat rays, as was thought prior to 1859. Besides the effect of light in causing erythema, lentigo, chloasma, pellagra, vernal hydroa, etc., and aggravating variola and perhaps a number of skin affections we have in xeroderma pigmentosum, a most interesting example of the influence of light in producing carcinoma. In Allen's "Radiotherapy" this pigmented epitheliomatosis of youth is said to assume a decided interest from the standpoints of cancer etiology and the pathology of skin changes produced by light. The onset is often noticed after exposure to strong light has produced a "sunburn," which disappears slowly to be succeeded by brown pigment spots. The prophylactic effect of excluding sunlight by thick veils worn by predisposed children has demonstrated clinically the injurious action of the rays. In what this author calls pseudoxeroderma pigmentosum there is in late life a pigmented, warty, telangiectatic, and atrophic state of the skin of the face accompanied by multiple epitheliomata in men who have spent much of their lives upon the water or exposed to the sun, and he believes that "the relatively great frequency of epithelioma upon the face may well be attributed, at least in part, to the irritative agency of chemical rays."

In a paper by James Nevins Hyde on "The Influence of Light in the Production of Cancer of the Skin" (*American Journal of the Medical Sciences*, January, 1906), the same view is taken and it is thought that the epithelium is stimulated by the inconceivably rapid velocities of the actinic rays to a proliferation beyond its physiological limits. The relative freedom of colored races (absolute absence of cancer in Tunis and rarity in Algiers) finds a natural explanation in the protection furnished by the colored skins. The conclusions reached by Dr. Hyde are: (1) The skin of the human body, in a certain proportion of individuals, and in those only, is hypersensitive to the action of the actinic rays of the spectrum. (2) This hypersensitiveness may be exhibited in the production of either hyperemia, pigmentation, telangiectasis, atrophy, hyperkeratosis, or cancerosis of the skin; or by all, at times in a determined order of succession. (3) In the form of childhood cancerosis known as xeroderma pigmentosum, the pigmentation, telangiectasis, atrophy, hyperkeratosis, and cancerosis of the skin resulting from exposure to rays of light are exhibited early in life, instances of this disorder being exceedingly rare. (4) Pigmentation, telangiectasis, atrophy, hyperkeratosis, and cancerosis of the skin occur in adults much more frequently than in childhood, reaction to the play of actinic rays of light upon the surface being chiefly determined after the middle periods of life have been reached. (5) Physiological pigmentation of the skin in the colored races seems to furnish relative immunity against cancerosis of that organ. (6) The colored races apparently suffer less than the whites from cancer of other organs than the skin. This relative immunity may be due to the protection from actinic rays of light furnished by the pigment of the integument.

It will be remembered that Loeffler, observing that cancer was infrequent in the tropics, where malaria was rife, offered the suggestion that there might be a natural antagonism in these two diseases which could possibly be turned to account therapeutically. Hyde's study would appear to show that the rarity of cancer in the tropics is due merely to the protection against the solar rays offered by the pigment in the dark-skinned races and has no relation whatever to the prevalence of malaria. The observation adds another argument to Woodruff's contention that blond men have no business in the tropics, and that if they go there to reside they do so at their peril.

As the theory of parasitism wanes it might be well for investigators to study the question of malignant growth rather more from the side offered by multiple cancer as it occurs in the presenile skin of youthful subjects of xeroderma.

The Nuisance of the River Noises.

The Health Commissioner of New York has taken measures to abate the smoke nuisance created by the North River craft which burn soft coal and emit clouds of soot which the westerly winds blow over the city. He will earn the thanks of his fellow citizens if he succeeds in reducing ever so little this insult to the town; but while his attention is directed to the offending tugboats he will do well to curb their even more pernicious activity in another direction. We have several times referred to the intolerable and sleep-destroying noise caused by the wanton shrieking of the sirens which many of these boats carry without necessity or reason. For some months one public-spirited woman, Mrs. Isaac L. Rice, has been carrying on, single-handed, a warfare against the noise-loving captains of these wretched little tugs. She has enlisted in the crusade the sympathy of the superintendents of the city hospitals along the river fronts, the Association of Masters, Mates, and Pilots (10,000 strong), the National, State, and Municipal authorities, the newspapers, and many thousands of the suffering citizens of this town—and the measly

tugboat captains keep on whistling. The agitation has not been wholly fruitless, for the whistling is a little less continuous than it was, but it is still much more frequent and much louder than there is any necessity for. A great step toward the abatement of the nuisance would be the substitution of ordinary whistles for the diabolical sirens. Rivermen aver that siren whistles are not only needless, but are an actual menace to navigation (as well as to health), because they render inaudible the signals from other boats. One important result of Mrs. Rice's crusade has been the placing of the responsibility for the continuance of this nuisance. She has obtained from the Federal authorities the specific declaration that the municipal and State officers alone have jurisdiction in the matter. It would seem, therefore, to rest with Dr. Darlington to abate this very serious evil, and we doubt not, now that his authority in the matter has been defined, that he will act with his usual energy and zeal for the health of the community.

A Proposed Seaside Park.

A BILL has been introduced into the State Legislature by Assemblyman Tompkins to create a commission for the purchase of a stretch of ocean front on Long Island and its conversion into a park and convalescent home. The bill is now in committee, but will come up for a hearing next week, when there should be a strong representation from the city to impress upon the up-State members of the Assembly the great need which exists for such a breathing place for the children of the poor and for convalescents. The project is one which has long been agitated, and has now received the powerful support of Mayor McClellan, who embodied a recommendation of it in his first message to the Board of Aldermen at the beginning of the year. "Provision must soon be made," he said, "by the city toward securing fresh-air homes for children and convalescent patients from the city hospitals, as well as breathing spaces for the whole people." He mentioned Long Beach, Rockaway Beach, and Coney Island as especially available for these purposes. Long Beach is the best of the three, but it has the disadvantage of being the farthest away, and is, moreover, outside of the city limits. Coney Island is the most accessible, but property there is very valuable and it is not likely that the appropriation of $2,500,000 provided for in Mr. Tompkins's bill would suffice for the purchase of the necessary waterfront and erection of buildings. Rockaway Beach would, therefore, seem to be the most suitable site for the park. It is said that a long stretch of beach can be purchased for about $1,000,000, leaving a balance of $1,500,000 from the appropriation for laying out the park and erecting the necessary buildings. This, however, will be a matter for the commission to decide, if the bill is passed. What is of present concern is the passage of the measure. New York City has many and extensive parks inland, but a town having so many miles of ocean front as this should have a public reservation free to all its citizens, where they could go to inhale the tonic and germ-free salt air. A convalescent home there would relieve the congestion of the city hospitals which now have to harbor many not yet well enough for discharge who fill the beds urgently needed for the acutely ill. These patients would, moreover, convalesce much more rapidly at the seaside than in the crowded hospital wards. In addition to the hearing on the Tompkins bill in Albany there will be a public hearing before the Board of Estimate in this city on March 9.

News of the Week.

Medical Society of the County of Kings.—At the eighty-fifth annual meeting of this society, held January 16, 1906, under the presidency of Dr. James W. Fleming, the following officers were elected for the ensuing year: *President*, William F. Campbell; *Vice-President*, Glentworth R. Butler; *Secretary*, John A. Lee; *Associate Secretary*, William A. Jewett; *Treasurer*, Onslow A. Gordon; *Associate Treasurer*, John R. Stivers; *Directing Librarian*, James P. Warbasse; *Censors*, Ralph H. Pomeroy, Henry G. Webster, John R. Kevin, William C. Woolsey, Julius Bierwirth; *Trustee*, James W. Fleming.

Centennial Celebration of the County Medical Society.—The dinner to celebrate the centennial of the incorporation of the Medical Society of the County of New York will be given at the hotel Astor, Times Square, on Wednesday, April 4, 1906, at 7 P.M. Members of the society are requested to notify at once the chairman of the Committee of Arrangements, Dr. Walter Lester Carr, 68 West Fifty-first Street, of their intention to be present. The price of the tickets is $6, and checks are to be made payable to Dr. Chas. H. Richardson, treasurer, 336 Lexington Avenue.

Harvey Society Lectures.—The eleventh lecture in the Harvey Society course will be delivered by Professor J. C. Webster of Rush Medical College, at the New York Academy of Medicine, on Saturday, March 3, at 8:30 P. M. Subject: "Modern Views Regarding Placentation." All interested are invited to attend.

The International Congress at Lisbon.—The opening exercises will take place on the first day of the Congress in the hall of the Geographical Society in the Geographical Society Building, where a colonial exposition will take place during the meeting of the Congress, under the auspices of the sections on colonial and naval medicine. The names of those who will deliver the general addresses have already been noted in the MEDICAL RECORD, with the exception of Dr. N. Senn of Chicago, who will deliver an address on the "International Investigation of Carcinoma." The amusements for the visitors will be a Portuguese bull fight, three large general fêtes, and several receptions and dinners. The hotel and other accommodations for the medical visitors are in the hands of Mr. Manuel Josida Silva, Redaction du Annuario Commercial de Portugal, Praca dos Restauradores, Palacia Foz, Lisbon, to whom all communications concerning board and lodging in Lisbon should be addressed. All communications regarding the scientific part of the Congress should be addressed to Dr. Ramon Guiteras, Secretary of the American National Committee, 75 West Fifty-fifth Street, New York, N. Y. All questions regarding transportation to Lisbon and return should be addressed to Dr. Charles Wood Fassett, Editor of the *Medical Herald*, St. Joseph, Mo.

Pure Food Bill Passed.—The so-called Pure Food Bill passed the Senate on February 21. The bill makes it unlawful for any person or corporation to manufacture, sell, offer for sale or deliver for shipment or to cause to delivered, shipped, or transported from any place within the jurisdiction of the United States any article of food, drugs, medicines, or liquors which is adulterated or misbranded, or which contains any poisonous or deleterious substance. The penalty provided is $500 fine or one year's imprisonment for the first offense, and $1,000 fine or imprisonment for each subsequent

offense. The second section extends the penalties to persons or corporations who offer to ship or receive for shipment either to any place within the United States or to any foreign country such articles. Drugs sold under a name recognized in the United States Pharmacopeia or National Formulary are required to be of the same standard of strength, quality, and purity as determined in the latest test, unless the standard of strength, quality, or purity is stated upon the label. In the matter of food product the bill forbids the mixing of any substance with it which reduces the quality of the article or is a substitute for it, or if any valuable constituent of the article has been abstracted it is then declared to be adulterated and contraband. The bill forbids the sale of a food article under the name of another article, the mixing, coloring, powdering, or staining of a food product to conceal its defects or the labeling of it to deceive the producer.

Amendment to the Illinois Pure Food Law.—The legislative body of the Chicago Medical Society has recommended a radical amendment to the Illinois Pure Food Law. The proposed amendment provides for transferring the duties of the Commission to the State Board of Health, putting all employees under the civil service, and providing that all chemical and bacteriological examinations of the Board, including the examination of food products, be made in the laboratory of the State University at Urbana. Having declared its position with reference to the State Food Commission, the Council of the Chicago Medical Society took further action, as follows: Specifically endorsed the bill to increase the efficiency of the Medical Department of the Army. Endorsed the Heyburn pure food bill, and all other measures advocated by the American Medical Association. Recommended the passage of a bill to control patent medicines, which shall provide that all medicines shall have a label stating the name and amount of all ingredients, and that all medicines containing opiates and similar drugs be marked with a poison label, with the understanding that the execution of this law should devolve on the State Board of Health, and that the Laboratory of the State University should be used in making the necessary examinations.

Sanitary Regulation of Cold Storage.—After seven months of persistent effort, the Commissioner's proposed ordinance for the sanitary regulation of the cold storage industry, has been favorably considered by the Committee to which it was referred by the City Council, and will be recommended for enactment. The vital provision of the proposed measure is that forbidding the sale of any slaughtered poultry, fish, game, or any animal used for food purposes, refrigerated or otherwise, which has not been properly drawn and prepared by removing the entrails at the time of slaughter. Other provisions of the Whalen Ordinance require cold storage warehouses to be in sanitary condition; regular inspections to guarantee this. An annual license fee of $500, the license to be issued only after strict compliance with the sanitary requirements. Every article to be tagged permanently to show the date it is put in storage. Retail grocers to exhibit storage meats in original packages from the warehouses, to show the age of the food and its history.

Tuberculosis Exhibition.—The tuberculosis exhibition, which the committee on the prevention of tuberculosis of the Charity Organization Society is sending about from place to place in the city, has now been installed at the Educational Alliance, East Broadway and Jefferson Street, where it was formally opened by the commissioner of charities, Robert W. Hebberd, Tuesday evening, of last week.

Donation to St. Luke's Hospital (Chicago).—One of the finest appointed hospitals in the country, where patients can receive the best medical treatment and high-class accommodations, is to be erected by the trustees of St. Luke's Hospital, as the result of the donation of $500,000, by James Henry Smith, of New York. In their annual report, the trustees have pointed out that hospital management in certain branches is conducting a hotel for the sick. It is reasonable that patients accustomed to a high class of accommodations when they are in good health would expect and be willing to pay for at least as good conditions when they are ill. The tendency has been for privacy and well-appointed rooms. The present endowment fund of the institution amounts to $313,000. It has surgical and medical wards, two wards for children containing twenty-four beds, a lying-in ward, and also those for eye and ear service.

Hospital Economics.—At a preliminary meeting of representatives of more than a score of hospitals held February 24, at the United Charities Building, with a view to effecting a permanent organization, having for its object stated conferences for comparing salaries and commodity prices. These officers were elected: *President*, the Rev. George F. Clover of St. Luke's Hospital; *Vice-President*, Mrs. B. M. Stimpson of the Infirmary for Women and Children; *Secretary*, Dr. S. S. Goldwater of the Mount Sinai Hospital; *Treasurer*, Amzi Lake of the Lincoln Hospital. Tentative schedules embodying details in hospital management and support, including salaries and cost of supplies. were distributed to the representatives. These are to be filled in, and from the returns so made permanent schedules will be systematically worked out at subsequent meetings. The next conference will be held within a month.

Football Through German Spectacles.—Prof. Wilhelm Ostwald of the University of Leipsic has returned to Leipsic after delivering his course of lectures at Harvard, and is preparing a report of what he observed for the Prussian Ministry of Education. In a newspaper article giving his impressions of American student life, he says: "The personal interest of the students next to their studies is concentrated alone on sport, which draws their attention altogether from intellectual or esthetic pursuits. Football before all is loved uncommonly, and it is practised in such a fashion that academic and State authority are near to forbidding it altogether. In the course of a single semester nineteen students fell victims to enraged brutal handling. At every American university is a sort of open amphitheater in which many thousands of spectators view the periodic football battles."

Civil Service Examinations for the State and County Service.—The State Civil Service Commission announces examinations to be held on March 17, 1906, for the following positions: Dentist, State Charitable Institutions, fees not exceeding $40 a month; Nurse, Monroe County Hospital, $240 to $300 and maintenance; Orderly, Monroe County Hospital, $360 and maintenance; Physician, Sixth Grade, $900 and maintenance. The last day for filing applications is March 12. Application forms and detailed information may be obtained by addressing the Chief Examiner of the Commission at Albany.

The Linnæan Society of New York.—Dr. Robert T. Morris will deliver a lecture under the auspices of this society on March 14, at 8.15 P.M. in the large lecture room of the American Museum of Natural History, entitled, "A Naturalist's Camping Trip to Hudson Bay."

Quarantines at Gulf Ports.—A movement is on foot among the railroad, steamship, and commercial interests at Havana to secure the good offices of the Government at Washington against the threatened quarantines at Gulf ports. President Palma is urging the Cuban Congressional leaders to press the pending appropriations for sanitation so as to leave no ground for criticism.

Health Commissioner for Brooklyn.—An appeal has been made by the King's County Medical Society to the president of the borough of Brooklyn to have a bill proposed providing for the appointment of a separate health commissioner for Brooklyn, instead of an assistant sanitary superintendent, as at present. The society contends that the Health Department of the borough cannot be administered with satisfaction either to the medical profession or the public because of lack of authority and direct responsibility.

Photographing Bacteria.—It is reported from Boston that Professor H. C. Ernst of the Harvard Medical School has devised a new method of photographing unstained bacteria by means of ultra-violet rays.

Smallpox.—A smallpox epidemic of some importance has broken out in the neighborhood of Owensboro, Ky., and the local authorities are said to be having much difficulty in enforcing quarantine regulations. There is also much popular opposition to vaccination, and the district is being flooded with antivaccination circulars.

Sixth Councillor District Medical Society of Ohio.—At the meeting of this society, held at Akron on February 13, the following officers were elected: *President*, Dr. A. B. Walker of Canton; *Secretary*, Dr. J. H. Seiler of Akron; *Treasurer*, Dr. H. H. Jacobs of Akron; *Councillor*, Dr. T. Clarke Miller of Massillon. It was decided to hold the August session at Orrville.

Taliaferro County (Ga.) Medical Society.—This society was organized on February 8, with the following officers: *President*, Dr. A. C. Davison, Sharon; *Vice-President*, Dr. J. A. Rhodes, Crawfordville; *Secretary and Treasurer*, Dr. Alex H. Beazley, Crawfordville.

Obituary Notes.—Dr. CHARLES MCDONALD of New York died on February 21, of heart disease, at the age of eighty-one years. He served through the Civil War in the Confederate Army.

Dr. H. MARTYN GRACE of Perth Amboy died on February 20, after an illness of several months. He was born in 1859 at Catskill, N. Y., and went to Perth Amboy from Port Jervis in 1892. He was prominent in public life and at the time of his death was Mayor of Perth Amboy.

Dr. THOMAS ROSS of Sacramento, Cal., died on February 11, as the result of a paralytic stroke. Dr. Ross was a native of Lancaster, Ont., where he was born in 1840. He was graduated from McGill University, Montreal, in 1863. In 1870 he located in Woodland, Cal., and in 1893 removed to Sacramento. He had occupied many public positions and at different times was superintendent of the Southern Pacific Railroad Hospital, secretary and then president of the State Medical Society, and at the time of his death was president of the Sacramento City Board of Health.

Dr. WESLEY DAVIS of Worcester, Mass., died on February 17, of paralysis, at the age of sixty-five years. He received his education in the University of Vermont and in the Berkshire Medical School. During the Civil War he did service on the hospital staff of the army of the Potomac, although he was not an enlisted physician. At the close of the war he went to Worcester and continued practising there till the time of his death.

Dr. WARREN P. BLAKE of Springfield, Mass., died on February 15, at the age of forty-eight years. He received his medical diploma from Dartmouth College in 1884 and practised in Farmington, N. H., until 1893, when he went to Springfield.

Dr. WILLIAM BARBER of Waverly, Iowa, died on February 12, at the age of seventy-six years. He was a graduate of the Medical Department of the University of Michigan and had practised in Waverly since 1879.

Dr. O. W. WOODS of Roanoke, Va., died on February 13, of tuberculosis, at the age of thirty-five years. He was graduated from the medical department of the University of Virginia in 1893, and after serving in the Spanish-American War he went to the Philippines as contract surgeon in the United States Army. He was later made assistant surgeon in the regular service, and on his return from the Philippines served at several posts in this country.

Dr. ELISHA H. GREGORY of St. Louis died on February 11, at Ormond, Fla., after a long illness, at the age of eighty-two years. Dr. Gregory was born in Kentucky but went to St. Louis in 1848, and almost immediately became prominent in medical circles. For more than half a century he held the chair of Surgery and Anatomy in the St. Louis Medical College, and he also served on the board of Health of St. Louis as president of the State Board of Health of Missouri, was twice president of the St. Louis Medical Society, and was president of the Missouri State Medical Association. In 1886 he was elected president of the American Medical Association.

Dr. LAIRD N. WOODS of Dallas, Or., died on February 13, of septicemia, at the age of seventy-one years. He was born in Greenville, Pa., and received his medical education at the Buffalo Medical College. He went to Oregon in 1883 and had practised in Dallas ever since. He was coroner of Polk County several times and was a member of the Board of Pension Examiners for many years.

Dr. GEORGE L. NEWCOMB of Scituate, Mass., died on February 21, after a long illness, at the age of seventy-four years. He served as surgeon in the Civil War and then practised for some years in St. Albans, Mass., before removing to Scituate.

Dr. HAROLD F. THOMPSON of Worcester, Mass., died of pneumonia on February 19, at the age of twenty-five years. He received his medical degree at Tufts' Medical College and at the time of his death was serving as interne in the Worcester City Hospital.

Dr. ANDREW M. MILLER of Detroit died on February 16, as the result of a stomach affection of long duration. He was graduated from the medical department of the University of Michigan in 1888, and before going to Detroit in 1899 had practised for several years in Alpena, Mich., where he served as health officer and in other positions.

Dr. THOMAS KELLEY died at his home in San Jose, Cal., on February 14, at the age of seventy years. He was a native of Clinton, O., took his degree at Rush Medical College, Chicago, in 1871, and settled in California in 1876.

Correspondence.

CELLULOID PLATES FOR CRANIAL DEFECTS.

To the Editor of the Medical Record:

Sir:—The insertion of celluloid plates to fill depressions due to loss of portions of the skull may be sufficiently rare to justify a report of the result in a case of this character, in which the operation was done in 1904. The patient had received a bullet wound in the forehead, near the normal limit of the hair and to the right of the frontal sinus. Loss of substance was complete and entailed a depression almost circular in shape, about an inch in diameter, and deep enough to produce a marked disfigurement. I inserted a series of sterile celluloid plates, which filled out the depression. A letter just received from the patient and his physician, two years after the operation, informs me that the plates have remained in position, and have been perfectly satisfactory in giving protection to the brain over the exposed area and in doing away with the disfigurement.

John A. Wyeth, M.D.

New York.

OUR LONDON LETTER.

(From Our Special Correspondent.)

SIR J. TUKE'S SUCCESS—MEDICAL CANDIDATES—TRAUMATIC PARAPLEGIA—TETANY—MYELITIS OR PERIPHERAL NEURITIS? TUBERCULOSIS; MARAGLIANO'S SERUM AND BEHRING'S NEW PREPARATION — SANITARY INSPECTORS — MILITARY NURSE'S FUNERAL—THE FEEBLE-MINDED—DEATH OF DR. PURDON.

London, February 9, 1906.

The penultimate parliamentary election was completed yesterday and the poll was announced last night. The graduates of Edinburgh and St. Andrews have given a sweeping majority of more than 2 to 1 to the medical candidate—Sir J. Batty Tuke, who was their member in the last parliament. The numbers were 4,893 for Sir J. B. Tuke, against 2,310 for his opponent, Mr. Strachey, who was not a medical man, not a graduate of any university, and who rested his claim on being a thorough free trader, and on having, in his own opinion, done much, as the editor of the *Spectator*, to save the empire from ruin through protection. There are several points of interest about this election. Many looked forward to it with a certain degree of curiosity as to whether it would reverse its former record. The last previous contest was in 1885, when a conservative was returned by a majority of 387. In 1900 Sir J. Tuke was unopposed. The appearance of an opponent was resented by some, but all seems to be fair in politics, and as the liberals thought that a free trader would assist them they supported the "interloper." Others were curious to see whether the Scotch universities would continue to vote as do the English, and so show that the educated constituencies are conservative as a whole, but by no means afraid to look change in the face, and are well aware that the condition of the country is now quite unlike it was sixty years ago. Another curious point, but equally noticeable in many other contests, is that liberals and radicals who have generally been advocates of reforms and change have suddenly become the most conservative opponents of any fiscal changes.

Again this contest is noteworthy from a professional point of view, as we have long been lamenting the absence or weakness of medical and sanitary representatives in parliament, and most of us have advocated a determination to support medical candidates wherever found. But here when an able candidate who had served the profession well in the last parliament was opposed, a number of medical men deserted their old representative and raised a cry on the impropriety of setting class against class and the danger of changing a system which had lasted sixty years. Really their logic seems as obscure as their casuistry.

A case of chronic tetany cured by thyroid treatment was shown at the Clinical Society on the 28th ult. The patient was a girl aged 9, who for eighteen months had been unable to walk, and the abdomen had become much distended during these months. For seven months there had been repeated attacks of tetany; anemia became marked; face puffy with edema of hands and feet. The knee-jerks had at one time been lost, but returned, and the tetany had disappeared under salol. This now failed, but the knee-jerks were still absent. Thyroid substance was given for a week, and the attacks of tetany disappeared and have not returned. Treatment was lately resumed on account of pains in the feet when walking or standing.

Dr. A. E. Garrod referred to a case he had last year brought before the society in which the patient had been repeatedly relieved by lavage, and at the post mortem the sigmoid flexure was found greatly hypertrophied.

Dr. Batty Shaw thought a toxin was formed somewhere which overwhelmed the nerve centers.

The president, Mr. Clutton, remarked that if the trouble was in the sigmoid the case should be operated on.

A case of laminectomy for traumatic paraplegia in a man of 36 was exhibited. The injury caused loss of motion and sensation of the legs, loss of knee-jerks, and plantar reflexes with incontinence of urine and feces. The arches of the first and second lumbar vertebræ were found, on operating, fractured and depressed so as to compress and injure the nerve structures. Sensation returned twenty-four hours after operation in the right leg; a little later in the left. The functions of the rectum and bladder were restored in three weeks and the power of movement gradually restored, so that the patient can now walk without assistance. The injury occurred last October. The knee-jerks remain feeble and the plantar reflexes absent.

Mr. Clutton observed that the recovery was noteworthy, as absence of knee-jerks and reflexes were usually considered contraindications for operating.

Dr. C. E. Beevor said the injury to lumbar nerve roots of the third and fourth vertebræ would account for absence of the knee-jerks in this case and so not contraindicate operation; but injury high up would, as it showed damage to the anterior horns.

There was also shown a case of recovery from what was supposed to be transverse myelitis in a man of twenty-nine who was seized nine days before admission with pains in the legs and back, weakness of the arms coming on and loss of control of the sphincters. Loss of power and sensation in the legs followed, then paralysis of intercostals and diaphragm. Anesthesia spread upwards to the nipples. He improved gradually and after nine months could walk without assistance. The knee-jerks returned after an absence of six months.

Dr. C. E. Beevor could not see how a man could breathe with persistence of paralysis of the diaphragm indicating the lesion to be as high as the fourth cervical vertebra. He suggested that possibly the case was one of peripheral neuritis of all four limbs.

Some interest has been revived in Maragliano's serum in consequence of a statement widely distributed that much improvement has been effected in it. It is said that Dr. Maragliano considers it is now perfect and that the Genoa Anti-tuberculosis Institute can supply the product in quantity. An interview with Professor Bouchard of Paris, has appeared in some of the newspapers in which he said the first patient on whim he tried it was cured but in some later cases he had been less successful. He warned the interviewer against prematurely raising hopes which might not be realized.

Some account of a statement made yesterday by Prof. v. Behring at Berlin has been telegraphed to us. Referring to his "T. C." preparation he is reported to have improved it—in fact so changed it as to rename it. Now he calls it "tuberculase" and has treated with it cows which were free from symptoms and appeared to be sound but which gave milk containing virulent tubercle bacilli. In a few weeks the bacilli disappeared under the treatment. He hoped it might be possible to prevent human tuberculosis but it was not to be supposed it could cure developed consumption. Prof. v. Behring reiterated his determination not to supply his preparation for use on human beings before next autumn and therefore it was useless for medical men to ask him to make exception on behalf of their patients.

The Sanitary Inspectors' Association had their annual dinner on Saturday, when the past chairman was presented with a gold watch and his wife with a gold bracelet. A prize of fifty guineas and the Chadwick gold medal for the best essay was presented to Mr. Jas Lord of Failsworth. Sir W. Broadbent proposed the toast of "Science and Art" and hoped the inspectors would wage as successful a war against tuberculosis as they had against fever and other diseases. Sir Wyke Bayliss responding said art and sanitation were not so far apart. One of the loveliest things in the world was a drain (laughter) when it was consecrated by art in the form of a gargoyle on the roof of a cathedral. Art was the science of beauty, sanitation was the science of health. Beauty and health were the same. The President of the Association, Sir J. Crichton-Browne, suggested that when an epidemic occurred in a town the local authorities should be made to march out with halters around their necks and hand over their duties to a government inspector for a time. The inspectors seem to have had a good time.

The Institute of Hygiene is organizing popular lectures. Dr. C. N. Meachen gave one this week on "The Ear and Hearing." He said an organ for hearing appeared early on the stage of evolution and when man came on the stage he

showed retrogression. This statement he explained by the fact that man does not prick his ears though he may perhaps reacquire the faculty and he has a rudimentary mechanism still. After this popular homage to the doctrine of evolution he gave some good advice to his audience on the danger of meddling with their ears with hair-pins, boxing the ears of children, etc.

At an official inquiry into a rehousing scheme proposed by a railway company which is displacing nearly 1,000 tenants in Kensington, the Borough Council objected that no one-room tenements were provided—only two, three and four roomed. The Medical Officer of Health, it was said, agreed with the Council that one-roomed tenements should be arranged for as in some cases they were necessary and forty-one tenants of this class would be displaced by the demolition of their homes.

Miss Fitzgerald of the Queens Nursing Service, who died at Aldershot while acting as military nurse, was buried on Tuesday in the Military Cemetery with military honors. Six members of the R. A. M. C. acted as pall-bearers and the band of the corps headed the procession, playing funeral marches. The chief mourners were followed by detachments of sisters from the various military hospitals and after them a company of the R. A. M. C. with General Macnamara and other officers in the rear. The funeral is described as unprecedented and unparalleled.

Brompton Hospital authorities contemplate an extension of its scope in the direction of dealing with tuberculosis from a national rather than an individual aspect. A subcommittee representing the staff and managers has been appointed, and Dr. Newsholme will be consulted on such matters as his great experience in sanitary matters may be supposed to assist in the deliberations, more particularly, perhaps, as to the sources of infection in the homes of the poor, as the object of the inquiry is not so much the efficient treatment of the individual, which is the concern of the staff, but the discovery of other members of his family who may be affected. By active cooperation with medical officers of health it is hoped to reach each focus of infection, and so do something to lessen the incidence of the disease.

Dr. Nathan Raw, who has had some eighteen years' experience as a resident in asylums and hospitals, gave evidence before the commission on the feeble-minded. He thinks those defective children who are capable of benefit by instruction should be under the control of the local educational authorities, and those who are incapable of such benefit should be cared for by the county councils, either in special institutions or the county asylums. They should certainly be removed from workhouses.

Dr. Thomas Jackson held that counties or combined union districts should have "work schools" where improvable cases should be taught trades specially useful to such persons, and where attendants, nurses, and itinerant teachers could be trained.

Mr. T. Thompson, trainer to the Colchester Asylum, after fifteen years' experience of training boys, said the best plan was to teach them garden work, so that they could produce enough to live on. Government farms for 200 patients, in four homes of fifty each, would admit of classification, and would supply vegetables to the unions.

I regret to record the death, on the 21st inst., of Dr. H. S. Purdon, in his 61st year. He was consulting physician to the Skin Hospital and the Consumption Hospital in Belfast, where he enjoyed a high position among his professional brethren. He took the M.D., Glasgow, in 1865. His favorite subject was skin diseases, on which he published many papers, as well as the *Quarterly Journal*, on the subject, which he established and carried on for several years. The name of Purdon is closely associated with Belfast, members of the family having long been in practice there. His father and brother were Belfast physicians, and one of his two sons remains in the city, the other having crossed the Atlantic.

THE OSTEOPATHY BILL IN THE NEW YORK LEGISLATURE.

To the Editor of the Medical Record:

Sir:—The attention of the Medical Profession in this State is called to a bill introduced in the Legislature by Senator Hinman, entitled, "An Act Regulating the Practice of Osteopathy in the State of New York." This bill grants to certain persons permission to treat all diseases of the human body by the so-called osteopathic method, and exempts them from the educational qualifications demanded by the act, governing the right to practise medicine in this State. Section 6 of this bill states that "Any person who at the time of the passage of this act shall be actually engaged in the practice of Osteopathy in this State, and who is a graduate in good standing of a regularly conducted school of Osteopathy within the United States requiring a course of two years or longer, with actual attendance of at least twenty months, and who shall be recommended to the Regents by the State Board of Osteopathic Examiners, shall upon application and payment of twenty-five dollars ($25.00), *without examination*, be granted a license to practice Osteopathy, provided application for such license be made within six months after the passage of this act." Osteopathy as defined in the bill means "That science or system of healing which treats diseases of the human body by manual therapeutics for the stimulation of the remedial forces within the body itself, for the correction of misplaced tissue, and the removal of obstructions or interferences with the fluids of the body, all without the internal administration of drugs or medicines."

Osteopathy is a system of manual or hand therapeutics, and is a single agent used in the treatment of disease; as such, it has no greater claim to be separated from the general practice of medicine than electricity or electropathy, bathing or hydropathy, massage or kinesipathy, the *x*-ray or radiopathy, and mental science or psychopathy, and is not entitled to a special examining board. The eye, ear, nose, throat, electrotherapeutic, psychopathic, and other specialists do not ask exemption from the examination in the general science of medicine demanded by the regents of the University of the State of New York of all candidates who apply for a license to practise medicine or any branch of medicine, and they do not ask for an examining board in their specialty. If the osteopaths desire to establish a special branch of medicine, then they too should possess at least that average of the knowledge of preventive medicine, which is needed properly to control the spread of contagious and infectious diseases, and which is included in the general science of medicine demanded by the present law; and they should not try to escape, under the section quoted, the preliminary and final examinations for a license to treat the diseases of the human body.

The public has so long suffered from poorly educated physicians that every State in the Union has enacted laws raising the educational qualifications of the candidates to be examined for a license to practise medicine. The medical laws of the State of New York were enacted to protect the people of the State from charlatans, quacks, and pretenders of all sorts. The four years spent in the study of medicine prepares the mind and molds the character along the lines of truth and science and away from commercialism in medicine. A reaction from commercialism in medicine, and the tendency of modern times to raise rather than lower the educational standard of professional men, were factors in causing the Legislature to enact the laws which prevent any person, not presenting the intellectual and moral qualifications required by the law, from practising medicine "or treating the diseases of the human body" in this State. The public is protected by discouraging commercialism in medicine and is benefited by fostering the science of medicine, and not the least of the duties of physicians is the guarding of individual and public health along the lines of sanitation and preventive medicine.

To summarize the objections to the Osteopathic Bill:

First: The bill permits certain practitioners of a branch of medicine known as osteopathy to receive a license to practise legally a branch of medicine without passing an examination, there being no evidence that they possess any knowledge of sanitation and the protection of the public from contagious and infectious diseases.

Second: Osteopathy is a single agent or method used in the treatment of disease, and is included in the general practice of medicine, and is now and has been used by the licensed physicians of this State, and it should not have a special examining board, which would lower the educational standing of the physicians in this State.

Third: Osteopathy should not be made a special branch of medicine by an act of the Legislature, but should come under the present State laws, which govern all the special branches as well as the general practice of medicine. Any of the 11,923 licensed physicians in this State have already the right to practise osteopathy as a specialty.

Fourth: The Legislature should protect the public by withholding the endorsement of the State from any person, as being capable of treating the diseases of the human body, unless such person can make a diagnosis of the condition of the human body, and can protect the individual and the public from contagious and infectious diseases, to do which requires a full knowledge of the science of medicine as taught in the medical colleges of this State, including the use of drugs, sera, and other valuable therapeutic agents. From an educational standpoint the enactment of the Osteopathic Bill would be a retrograde movement, there being no recognized osteopathic college in this State.

And, finally, it would be more reasonable for the Legislature to separate the special branches of criminal, corporation, and real estate law from the general practice of law,

and establish for each of them a special examining board, than it would be for the Legislature to select one special therapeutic agent used in the treatment of disease and separate it from the general practice of medicine at the request of those enthusiasts who are now asking for a special osteopathic examining board.

The members of the Senate and Assembly should be petitioned, in the interest of individual and public health and to safeguard the educational standards of the State, to defeat "Senator Hinman's Osteopathic Bill, No. 293."

E. Elliot Harris, M.D.

Progress of Medical Science.

Boston Medical and Surgical Journal, February 22, 1906.

The "Home Sanatorium" Treatment of Consumption.—J. H. Pratt reminds us that the essential feature of the sanatorium treatment is careful regulation of the details of the daily life, and the essential feature of the climatic treatment is life in the open air. He has endeavored to carry out the same regulations in the homes of the poor in a crowded city. In an interesting paper illustrated with several photographs he gives the results of his experience. The difference between his methods and those of the usual tuberculosis dispensary is that while the latter gives a small amount of care to a large number of patients, he gives a large amount of care to a small number. He has organized a "tuberculosis class" in one of the churches in Boston which finances the plan. Each detail of the daily life of the patient is supervised, and strict discipline is maintained. A nurse devotes her time to visiting the class members. These are not accepted until either tuberculin or sputum examination has established the clinical diagnosis. Admission has not been restricted to incipient cases only. Before admission each applicant must promise to give up all work, live the out-door life and obey all the rules. Details of the treatment are given in the paper. Once a week the class holds a meeting. A nominal fee of two dollars per month is required. The class numbers now fifteen. The total expenses for the first half-year were a little over five hundred dollars. The plan outlined by Dr. Pratt is feasible in any community. Of nine patients who have been members of the class for three months or more eight show a gain in weight. In five the disease has been arrested. We commend this paper to all interested in the tuberculosis problem.

New York Medical Journal, February 7, 1906.

Diagnosis of Chronic Urethral Discharges.—S. L. Gans calls attention to the compressor urethra muscle as dividing the urethra into an anterior and posterior portion, and speaks of the periurethral glands, Cowper's glands, the prostate, and seminal vesicles as the urethral accessory sinuses. He advocates the use of the familiar two-glass test, and discusses the relative significance of the various deposits commonly found therein. He then discusses the various intra- and extraurethral lesions, going into considerable detail as regards clinical methods. Nothing essentially new is presented, but the paper, as a whole, is an excellent summary of the technic followed in the modern treatment of chronic urethritis. Concerning the endoscope, he says that he considers it a useful thing only in a comparatively few selected cases, and in hands thoroughly trained in its use. Under such conditions he regards it as a valuable adjunct, but under other circumstances a dangerous plaything.

Rheumatic Manifestations in Childhood.—E. J. McDonough enumerates under this category, growing pains, tonsillitis, chorea, endocarditis, pleuritic pains, torticollis, fibrous nodules, and anemia. The treatment he recommends may be summarized as follows: (1) Flannels the year round; (2) iron and cod-liver oil for the anemia; (3) for some time after an attack, salophen; (4) starches and sugars are restricted; (5) immediate treatment when any of the foregoing lesions appear, especially if there be a rheumatic diathesis; (6) removal of tonsils, adenoids, etc., as the infecting material commonly enters the system by this route; (7) sodium salicylate during acute attacks, wrapping the joint in cotton or splinting it if necessary.

Oxaluria.—H. H. Roberts alludes to an "alimentary" oxaluria which may come on after the ingestion of certain fruits and vegetables, such as asparagus, spinach, rhubarb, tomatoes, apples, grapes, lemons, turnips, onions, strawberries, also tea. Neither this form nor systemic oxaluria can exist without some disorder of metabolism. Stomach or intestinal disturbances are the most common. Hyperchlorhydria is frequently present, also nervous indigestion, flatulence, sour and bitter eructations. These patients are intensely irritable; they frequently have cold and clammy hands and feet; any unusual amount of muscular exercise produces undue muscular soreness; they suffer with neuralgia; they have muscular stiffness if they remain in any one position too long; lumbago is often a result; they have irritable hearts; they suffer with repeated attacks of insomnia, frequent and severe migraine, and frequent and sudden attacks of coryza. The author believes that oxalic acid is one of the congeners of uric acid. Mere examination of the amount of crystalline deposit in a given specimen of urine gives no accurate estimate of the amount really in the system. We must quantitatively examine a twenty-four hours' specimen. Roberts considers intestinal oxaluria to be one of the chief causes of appendicitis, colitis, etc. For general treatment he advises foods which are not oxalic acid producers, which increase combustion, and undergo easy oxidation. The alkalies and salicylates are the most valuable drugs. In addition, general hygienic measures, especially fresh air and well-regulated exercise, are called for.

Tapeworm Simulating Appendicitis Recurrens.—The patient of A. A. Gumbines was a woman of thirty-two years, with a three-years' history of pain in the lower right abdomen and occasional vomiting. A diagnosis of appendicitis recurrens was made and concurred in by three other physicians. A fourth claimed the condition was gallstones. The patient was not willing to submit to operation. Soon after she passed a tapeworm, since which she has had no further abdominal symptoms.

American Medicine, February 24, 1906.

A Case of "Neurasthenia," as Treated by Two General Physicians, One Homeopathist, One Quack, One Osteopath, Three Ophthalmic Surgeons, Two Gynecologists, One Diagnostician, One Neurologist, One Resident Sanatorium Physician, and One Refractionist.—George M. Gould reports the case of a woman, the wife of a physician, whose illness was said to date from the age of twelve, when she "jumped from a box." The symptoms were recurring "attacks of exhaustion" and other nervous phenomena, generally ascribed to a retroverted or twisted uterus by her physicians. Advice was obtained from the physicians mentioned in the title, many of whom were of the highest professional reputation. Slight temporary relief was obtained from two irregulars, none from the others. Pregnancy in 1903 cured the retroversion, but none of the symptoms. In 1904 incorrect glasses increased the intensity of the old symptoms and added new ones, still harder to bear. In 1905 correct spectacles at once brought about a cure.

Relation of Acid Fermentation in the Stomach to Neurasthenia.—J. Wirt Robinson does not believe that the statements usually made that the nerves are in a condition of under-nourishment in neurasthenia are true. It has been shown that if the amount of oxalic acid eliminated daily is much increased, symptoms of irritability appear. A small amount of oxalic acid is taken in with the food, but an excessive amount is due to an acid fermentation in the stomach. When excessive amounts of oxalic acid are absorbed (probably as the sodium salt, the nerves, with other tissues, have to suffer a loss of calcium, which has a strong affinity for oxalic acid. This produces a disturbed ratio of salts in nerve tissues, resulting in increased irritability. In regard to treatment, diet and hygiene stand first. Fermentable foods, as sweets and possibly starchy foods, must be restricted. The use of lime water furnishes calcium in the alimentary canal to unite with the oxalic acid and saves the vital tissues.

Bacillus Chlorhydrici.—E. Palier describes in detail, under this name, a new microbe, which he isolated from the human stomach and cultivated. It may be found in hyperchlorhydria and in chlorhydria, but not in hypochlorhydria, and hence its name. It is a small, slender, motile, Gram negative bacillus, and is aërobic. Its isolation is very difficult. *B. chlorhydrici* and yeast are the two germs usually found in hyperchlorhydria and in chlorhydria when the HCl is above 0.1 per cent., and they help the digestion of proteids and fats. Under abnormal conditions, when there is an abrasion or injury of the mucous membrane of the stomach, these two microorganisms may be the cause of round ulcer of the stomach, as they cause such an ulcer when rubbed into the root of the tail of a mouse.

The Sanatorium Treatment of Tuberculosis.—George B. Kalb says sanatorium treatment gives the best results because the patient is under continuous control, and nothing is left to the feelings or whims of the patient or his family. The total eradication of pulmonary tuberculosis is within the range of the possible, and to make

it more probable, institutions of three kinds should be established: (1) For incipient cases where practically all can be cured; (2) for advanced cases where a goodly percentage can be cured; (3) for far-advanced cases, where some can have their disease arrested and the path to the grave can be rendered less painful, while all can be prevented from infecting others.

Journal of the American Medical Association, February 24, 1906.

The Physiological Status of the Fetus in Utero.—W. H. Sanders holds that the beginning of life should be dated at conception and not at birth, as is now commonly done. The individual has an independent existence from the moment of union of the male and female germs; the mother is its temporary hostess. He states his views in the following propositions, which are submitted to the profession. "1. The conjunction of male and female germs constitutes, from a scientific standpoint, birth. 2. The term conception should be abolished and that of birth substituted therefor. 3. In dealing with all stages of pregnancy, even the earliest, physicians should recognize the extreme gravity of the condition, and should never condemn to death a fetus, however young, without the maturest consideration, and without calling to their aid the highest professional authority within reach; in a word, without carrying the case to the nearest and wisest medical supreme court accessible. 4. The principles herein contended for should be impressed on the members of the profession, taught to medical students and promulgated widely among the people. 5. Medical men should interest themselves to see that the statutes of their respective states are ample for the protection of the fetus *in utero*."

Metabolism in Cancer.—After summarizing the previous work in this line, H. H. Glosser and W. S. Frisbie report the results of their own studies to determine the relations of the nitrogen loss, if any, with the gain and loss of weight of cancer patients, as compared with normal individuals; to determine the possible retention of chlorides in the system, and its extent; to determine whether or not such retained chloride has any direct relationship with the supposed increase of chloride in the blood, and with the formation of edematous deposits; and to note the effect of adding or excluding chloride from the diet in cancer patients as compared with normal individuals. They found that in a normal individual, proteid starvation was followed by a loss of nitrogen, while the chloride equilibrium was maintained. In cancer patients the nitrogen loss showed considerable variations, explainable to some extent by other factors than the existence of the tumor. On the other hand, while a healthy person could assimilate enormous quantities of chloride and strike a balance in from twenty-four to forty-eight hours, cancer patients showed edema when chloride consumption was increased, the kidneys being unable to excrete the excess. The work shows the existence to some extent of toxic substances (not perhaps specific cancer poisons) in the system capable of interfering more or less with nutrition. They may be suboxidized nitrogenous products

Congenital Coxa Vara.—H. D. Feiss reports a case occurring in a child three years old, the evidence in which he thinks is sufficient to prove its congenital origin The extreme adducted position and the extreme flexibility noticed right after birth point to its intrauterine origin. He reviews the literature of the subject and reports experiments made with an eight-months' fetus hardened in formalin to demonstrate the mechanism of the deformity. He states his conclusions as follows: "Congenital coxa vara is usually associated with defects or deformities of other parts, commonly with defect of the femur and with deformities of the lower limbs. It may be intrauterine in its strictest sense; it may be the result of an intrauterine infection, or it may be combined with congenital rachitic deformities. At least some of the strictly intrauterine cases are associated with peculiar positions of the thighs in utero; that is, adduction of the thigh in question. This peculiar position of the joint might explain a fixed deformity in the later developing hip joint, if we may assume that the proximal end retains its relative position to the acetabulum after birth."

Endothelial Tumors.—F. R. Zeit remarks on the confusion that exists in the nomenclature and diagnosis of endothelial tumors, and points out the need of a better system. A correct diagnosis is of the greatest practical value since these tumors are slower in growth than other malignant growths and do not produce metastases or involve neighboring lymph nodes as early, hence the prognosis after thorough removal is better than with carcinoma or sarcoma. He gives the reasons for accepting endothelial tumors as a special class by themselves, and points out the biological and morphological differences between them and carcinoma and sarcoma. The general morphological characteristics of endothelioma distinguishing it from carcinoma are stated: the intimate connection of the cells with the stroma, the intercellular cement substance, the fibrillary processes, the arrangement of the cells, etc., also the organoid as distinguished from the histoid structure of sarcoma. Cases are reported illustrating the special morphological characteristics of the various types of endothelial tumors, according as the endothelial proliferation originates from lymph vessels or spaces, or from the outer or inner endothelial lining of the blood-vessels. Other endothelial tumors, such as cylindroma, resulting from hyaline metamorphosis of the vessel wall and psammoma and cholesteatoma, usually classified under this head, are briefly mentioned, but not discussed. The article is fully illustrated.

Sheet Paraffin in Eye and Nose Lesions.—E Moraweck and G. C. Hall recommend the use of splints made of dentist's sheet paraffin in nasal surgery to prevent adhesions, etc. The paraffin can be cut to suit the needs of the case, and if handled with clean hands and shaped with clean instruments and with the additional precaution of scraping it just before introduction, they have not found it necessary to keep it in irritating antiseptic solutions before using. They find the splints much better for preventing adhesions than either the gauze tampon or the Bernay splint, besides being less painful and inconvenient. Details are given as to their use in cautery operations, after submucous resection of the septum, after turbinectomy and in septal deformities, spurs, and ridges. The authors do not invariably use these splints in nasal work, but probably in about 50 per cent. of their cases. In eye work they have used the material in only one class of cases, in extensive lesions of the conjunctiva in which adhesions are threatened, or after operations for symblepharon. A piece is shaved to about half its original thickness, molded over an artificial eye, a circle is cut out in the center so that it does not encroach on the cornea, and it is then inserted into the conjunctival sac and left there as long as necessary. It is well tolerated, permits cleansing and after-treatment. This use of paraffin, the authors think, is original with them. The article is illustrated.

The Lancet, February 10, 1906.

Bilharzia Infection of the Vermiform Appendix.—J. Burfield and E. H. Shaw have been unable to find any records of a similar case to their own, which occurred in a man of thirty-six years, living in South Africa. He had had several gluteal and lumbar abscesses, and his symptoms finally justified an exploration of the appendical region, which was made by anterior abdominal incision in the usual way. Dense adhesions were found and a fluctuating swelling was found behind the pelvic peritoneum near the sciatic notch. The anterior wound was closed and a coexisting abscess in the right buttock was opened and found to communicate with the post-peritoneal swelling. All these cavities were drained, but the resulting sinus persisted and later the appendix region was again explored. The proximal end of the appendix was found very firmly adherent to the posterior pelvic wall near the sciatic notch. This portion was removed. The distal end had apparently sloughed away. Recovery was uneventful. Sections of the appendix showed the ova of the bilharzia. As to the mode of entrance, the authors conclude that the patient first had an appendicitis which left him with a sinus leading to an abscess cavity in close connection with the proximal part of his appendix, and that later this sinus was the portal of entrance of the bilharzia, while he was bathing in an infected stream. Full pathological details and two figures accompany the case report.

Puerperal Sepsis Due to Bacillus Coli Communis.—A. K. Gordon's patient, a primipara, originally confined by a midwife, did well till the fifth day, when she developed the usual evidences of sepsis. No physician was summoned, until the seventh day; but he, as soon as summoned, ordered her removal to hospital, which she reached in an apparently moribund condition. Under curetting, antistreptococcus serum, etc., no definite progress was made toward recovery. As various cultures showed nothing but *B. coli communis*, 100 c.c. of serum prepared from a horse which had been injected with five pure cultures of *B. coli*, were administered. The effect was most marked, and from this time the patient began to improve and made an uninterrupted recovery.

Enlarged Glands of the Neck Successfully Treated by the X-rays.—The patient of M. E. Dovaston was a girl of eighteen years, with enlargements on both sides. Treatment continued over a period of nine months. The exposures were given for the first two months four

times a week, afterwards three times, and the last five months twice a week. The improvement was at first evident in the disappearance of the tissues binding the glands together, after which the individual glands became more definite. The glands themselves then gradually lessened and eventually disappeared, leaving a perfectly formed neck on either side; no recurrence at time of report (eight months).

British Medical Journal, February 10, 1906.

Arteriosclerosis.—J. Mackenzie refers to a series of patients seeming to run in families in which evidences of arteriosclerosis have appeared relatively early in life. He thinks they may illustrate the beginnings of permanent high vascular pressure, arteriosclerosis, gouty kidneys, etc. One patient had dyspnea, palpitation on exertion, thickened arterial walls, a pulmonary apoplexy at thirty-seven, and a fatal cerebral hemorrhage at fifty-nine. A sister of this patient suffers from similar circulatory and respiratory attacks, but is always relieved by the iodide. A daughter of the first patient has a mild form of Raynaud's disease, and has told the author that both the mother and aunt had the same symptoms when at her (the daughter's) age. Still another case in another family is related, presenting similar symptoms. Concerning the causes of arteriosclerosis, the author notes that the mischief is generally done by the time the case comes under observation, and the cause is usually attributed to an agency that suits the physician's fancy. He records his advice to one patient under such circumstances, to avoid beer and spirits, and eat less butcher's meat. It turned out that the man was both a teetotaler and a vegetarian.

Idiosyncrasy to Mushroom Poisoning.—E. E. Frossard relates the case of a young woman of thirty who, while cooking mushrooms for the family breakfast, ate some raw. Three hours later she purged, was nauseated, and immediately became unconscious. Two hours after she was dead. In the stomach twenty mushrooms were found, and where they lay was a zone of acute inflammation. Otherwise the organ was normal. Other members of the household who ate the cooked mushrooms suffered no ill effects. At the time of the occurrence, the rain had fallen incessantly and the mushrooms were sodden with water. They should always be cooked on a gridiron over a clear fire till all the liquid they contain has been exuded.

Food Fever in Children.—Under this title, Eustace Smith describes a condition, the symptoms of which are as follows: The subjects of the complaint are usually neurotic children of either sex, between the ages of three or four and ten or twelve years, or even younger. The attack begins with headache, accompanied sometimes by vomiting, sometimes by looseness of the bowels, but always by signs of some kind of digestive upset. The child lies about with a dull, pasty face, a dirty tongue; he does not care to play, and has a temperature of from 101° to 105°. If the abdomen is examined, the stomach resonance is found to reach higher than normal—often nearly as high as the left nipple—and the edge of the liver can be felt one or two fingerbreadths below the costal margin. The water is very high-colored, or thick, and very acid. Smith believes that these cases are primarily attacks of acute gastric catarrh. Unloading of the liver by a good mercurial purge lowers the fever, but it generally rises again from autointoxication. Milk diet is contraindicated. The children should have such foods as mutton, poultry, white fish, green vegetables well boiled, eggs, butter with stale bread or toast. Salted foods are also allowable. Even a small amount of milk may keep up fermentation. These patients are peculiarly susceptible to chilling from exposure, and must be properly protected.

The Relation of Angina Pectoris and Allied Conditions to an Arteriocardiac Reflex Having Its Origin in the Abdomen.—This subject is discussed by W. Russell, who discusses the various significations which have been attributed at various times to the term "Angina Pectoris" and alludes to earlier observations on the blood supply and muscle pain as referred to the heart. He believes that many attacks have their origin from an arterial reflex existing in the abdomen. During digestion there is an influx of blood to the whole splanchnic area balanced by a systemic arterial contraction. This latter is evidently a reflex phenomenon originating in the splanchnic system and there transmitted to the systemic arteries. The latter become smaller in caliber, while their walls are thickened. The degree of change depends on the nature of the meal taken. In the wine drinker and heavy eater there is a rise of blood pressure and a true increase of arterial tension. The continued effect of this reflex is to produce arteriosclerosis, and we know that sclerosed vessels are peculiarly liable to hypertonic contraction Angina pectoris, then, is the result of an overaction of the normal abdominal reflex, manifesting itself through the sequence of changes just enumerated. Several illustrative clinical histories are given, showing the production of anginoid attacks from taking nourishment, from digestive disturbances, and from physical effort. In one case an attack was brought about by palpation of the epigastrium. Whatever the degree of intensity the heart-pang may reach, it is always the result of a sudden embarrassment of the myocardium, and usually and chiefly that of the left ventricle. This sudden heart embarrassment, varying widely in degree and intensity, is the one fact common to all the divisions or subdivisions under which all cases have been classed. The angor animi, which also varies in degree, is, the author thinks, common to all sudden heart embarrassments, which fall short of being so immediately fatal that there is no time for the development of such sensations. The cause of the sudden heart embarrassment in the vast majority of cases is the arterial hypertonic contraction, or spasm contraction we have been considering, the latter term indicating the more sudden and severe degrees of contraction. Even toxic conditions only give rise to angina when the factors indicated are present. By the cases reported the author has shown that this hypersensitiveness of the vasomotor center, even in grave angina pectoris, can be reduced, controlled, or even removed by dietetic measures, with the result that the anginous seizures are removed or greatly modified. In cases where the arterial spasm is associated with great anatomical change, either in the myocardium or in the coronary vessels, absolute cure can hardly be looked for; but in all cases the symptoms of angina pectoris may be much ameliorated by accepting, as a working hypothesis, the propositions above submitted and conducting the treatment in accordance with what they indicate.

Berliner klinische Wochenschrift, February 5, 1906.

The Fate of the Different Sugars in Diabetics.—Petitti experimented on diabetics by injecting different solutions containing 50 grams each of glusose, levulose, cane sugar, and lactose into the rectum and comparing the results of the analyses of the urine and stools under these conditions with those obtained when the same amount of the same sugar was given by mouth. He comes to the conclusions that sugar given by rectum is absorbed as such no matter of what variety it is. It is not likely that any marked bacterial fermentation takes place in the bowel. It is not possible to state with certainty that sugar absorbed through the rectum is more fully used than that taken by mouth, for in some instances the one condition obtains and in others the other. On what factors this variability depends is still unknown. No matter what sugar is given to a diabetic, either by mouth or by rectum, in quantities of 50 grams an increased excretion through the urine takes place, and this increase always consists of a dextrorotary sugar. It is impossible to say what variety of sugar is most fully used by the diabetic organism, but lactose appears to be most fully used and cane sugar the least. In severe cases of diabetes in which acidosis already exists this condition is not altered by the administration of sugar either through the mouth or the rectum, and the sugar excretion remains unchanged without being much influenced by the administration of the added amount. Enemas of sugar, and particularly those of lactose, should be found useful in the treatment of diabetes.

Endoscopy of the Urethra.—Goldschmidt describes an instrument by means of which inspection of the urethral canal is greatly facilitated. He makes use of the principle of the cystoscope and applies it to the present use by dilating the urethra with water. The instrument bears at its distal extremity a miniature electric lamp, and the wall of the tube has two large windows extending for a short distance proximal to the electric lamp. An ocular may be inserted in the proximal end of the instrument, and suitable provision for irrigation by a stream of water is also made. In practice the instrument is inserted to the desired depth and the canal distended to any desired degree by the pressure of the irrigating fluid. On setting the lamp in operation a satisfactory view of the urethral mucosa is said to be easily obtainable.

Chronic Progressive Chorea in Youth.—Lange says that while Huntington's chorea is ordinarily a disease of advanced life, usually occurring between the thirtieth and fortieth year, in certain instances the disease is observed in individuals much younger than this. Heilbronner has also called attention to the fact that familial chorea in general shows the tendency in each successive generation to attack individuals whose average age is less than that of those in the preceding one. In other words, the disease is progressive not only for the individual, but also in its familial tendency. The author's patient was a man of twenty-six, who developed the disease in typical

orm shortly after having been subjected to brutal treatment during his period of military service. His father developed the disease at the age of forty-eight years, apparently as the result of trauma in the farm of a fall from a high wagon. As no other ancestors who had had the disease could be discovered the author assumes that the father must be regarded as the originator of a familial tendency.

Münchener medizinische Wochenschrift, February 6, 1906.

Seroactivity and Phagocytosis.—Gruber and Futaki while emphasizing the importance of phagocytosis in the defense of the body against infection, believe that it must be placed second to the substances contained in the blood serum. This conclusion is based largely on experiments dealing with the opsonins. On placing virulent typhoid bacilli in contact with living guinea-pig leucocytes plus inactivated serum phagocytosis occurred much more slowly than when the experiment was repeated with unheated serum. The authors believe that the circulating serum contains a substance, the opsonin, which may or may not be identical with the alexin, and which has the property of extracting from bacteria, or causing them to give off, substances which incite the phagocytic activity of the leucocytes. The function of the thermolabile bodies of the blood serum lies not so much in their ability to destroy bacteria as in this property of stimulating phagocytosis. The action of the active serum by which bacteria are made the prey of the leucocytes is *per se* as little damaging to the vitality of the bacteria as is the process of agglutination.

Hirschsprung's Disease.—Bittorf describes a case of this disease, which is interesting in that the autopsy was secured at the age of only nineteen and one-half weeks. The patient came under treatment for bronchopneumonia, but in addition exhibited evidences of fecal retention and presented a tumor of large size, situated in the left hypochondrium. After an illness of several weeks, the infant died and was found to have pulmonary tuberculosis and Hirschsprung's disease. The seat of the dilatation of the intestine was the entire sigmoid flexure and the junction between sigmoid and rectum and sigmoid and descending colon was sharply marked by a pronounced stricture. The descending colon was not enlarged. The distended sigmoid extended upward to the costal arch on the left side and displaced the liver downward and to the right.

Observations on the Treatment of Acute Suppurative Processes with Bier's Hyperemia.—Colley warmly praises Bier's treatment, and predicts that in the future it will occupy a prominent place in surgical methods of procedure. He advises great caution on the part of practitioners, however, in attempting to introduce the method, because not only must the technique be acquired, but also popular opinion is so strongly in favor of promptly incising all suppurative processes that a plan of procedure which does not carry out this principle, and even temporarily increases the local swelling, is not likely to be regarded with favor by the laity, and experiences tending to bring the method into discredit may easily be encountered. By bringing bacteria of known virulence into contact with edema fluid taken from a congested limb, the seat of a suppurative process, the author was able to prove that a distinct bactericidal action not present in serum from a normal limb was developed in the body fluids of a region subjected to the congestion treatment. He also noted that in many instances, application of the treatment caused a general swelling of the lymph nodes in all parts of the body. Colley speaks very highly of the value of the method in such conditions as puerperal mastitis, buboes and furuncles, but states that sever diabetes is a contraindication to the treatment. He also disapproves of the application of general congestion to the head by means of the neck bandage, owing to the intracranial hyperemia that must be produced. He has found that warm baths of the entire body after the removal of the congesting bandage or suction cup have a beneficial action and appear to accelerate the cure. He also speaks of striking results obtained in eczema by the congestion treatment

Deutsche medizinische Wochenschrift, February 8, 1906.

An Experimental Observation Relating to Siegel's Syphilis Inoculations in Animals.—Wechselmann describes the rather striking cutaneous lesions which Siegel obtained on inoculating monkeys, principally maccacs, with blood and kidney emulsion from rabbits infected from human syphilis. The lesions produced in the monkeys were so extensive that it seemed as if the virus must have undergone some increase in strength by passage through the rabbit, as monkeys of the lower orders directly inoculated from human lesions do not exhibit very marked evidences of infection. Wechselmann was led to make a control experiment on a monkey by inoculating it in a manner similar to that described by Siegel, with blood from a healthy rabbit. Three c.c. of this were injected subcutaneously into the animal, and about three weeks later lesions began to appear in the palms of the paws, and later on in other situations which strongly resembled Siegel's descriptions of his results with material taken from syphilitic rabbits. Wechselmann therefore concludes that Siegel's experiments so far do not permit positive deductions in regard to the nature of the lesions produced by his inoculations.

Bier's Congestion in Acute Suppurations of the Ear.—Stenger says that the opinions of otologists in regard to the value of Bier's treatment by hyperemia in suppurative ear diseases are not entirely in accord, some writers expressing views rather adverse to the method, while others esteem it highly. He reports the results he himself obtained in eighteen cases of acute suppurative conditions, and states that he believes that the method will be found of distinct value in otology. He employed two methods of producing the congestion, first by means of a rubber neck bandage and secondly by the use of suction cups. In suppurative otitis media the author believes that the treatment with the rubber bandage may be begun as soon as diminution in the severity of the symptoms has begun under the influence of the ordinary treatment, as recovery may be hastened by the congestion treatment under these conditions. If alarming symptoms develop from the start, the congestion treatment should be employed at once in additions to the usual measures, without, however, deferring unduly operative intervention, should this seem necessary. In cases with involvement of the mastoid the author makes the skin incision and evacuates any pus that may be under the periosteum and chisels a narrow passage to the antrum; a suction cup is then applied to the wound and allowed to remain for several hours. Large amounts of secretion are usually obtained, and the procedure is repeated for shorter periods of time on the succeeding days. In cases without abscess but in which there is swelling over the mastoid with tenderness to pressure, a small skin incision is made and an opening effected in the bone, though this need not penetrate to the antrum. By the application of the suction cup the mastoid cells can be effectually drained of any secretion present.

French and Italian Journals.

The Fatty Nature of Opalescent Blood Serum.—A. Gilbert and J. Jomier have been studying the nature of opalescent blood serum. Their experiments have included eight specimens. After agitating it with a certain proportion of ether, the serum is centrifugalized. There is a rapid separation of two layers, the lower one being the clarified serum, the upper having the appearance of a gelatinous disk. This disk is made up of an aggregation of particles of serum expanded by the ether; when treated with distilled water, there is noted an opalescent liquid analogous to that of the serum, and which presents under the microscope a multitude of refractory particles comparable to globules of milk. The particles turn brown by the addition of osmic acid after a contact of a few minutes. These investigators, having succeeded in coloring with osmic acid the particles which are separated from the serum by centrifugalization, have concluded that the nature of the opalescent principle of blood serum is fatty.—*Gazette des Hopitaux, Civils et Militaires*, January 25, 1906.

Dosage of Chloroform in the Blood.—Nicloux is continuing his interesting experiments relating to the dosage of chloroform in the blood by a most original and precise method. The results of his researches show that dogs are anesthetized when their blood contains on the average of fifty milligrams of chloroform to one hundred cubic centimeters of blood. Each animal, however, has an anesthetic coefficient which may vary from forty-five to sixty milligrams. The dose of chloroform necessary to cause the death of an animal is little more than the anesthetic dose. It varies between fifty-five and seventy milligrams. After the inhalation of chloroform has ceased, the quantity of chloroform in the blood rapidly diminishes, becoming scarcely appreciable a few hours later.—*La Presse Médicale*, January 24, 1906.

A Case of Tuberculous Cervical Metritis.—L. G. Richelot calls attention to the rarity of reported observations of tuberculous cervical metritis. He himself has had such a case under his care. The patient was a woman clearly tuberculous. She coughed and there was evidence of small cavities. The cervix was the seat of an extensive ulceration, showing drops of pus on the surface. The consistence was that of metritis. The writer did not believe the affection to be an epithelioma, but he suspected tuberculosis of the cervix and thought that the rest of the genital apparatus must be involved. He therefore performed a hysterectomy. Histological examination demonstrated the nature of the trouble.—*Annales de Gynecologie et d'Obstetrique*, January, 1906

Book Reviews.

A Text-Book on Modern Materia Medica and Therapeutics. By A. A. Stevens, A.M., M.D., Lecturer on Physical Diagnosis, University of Pennsylvania; Professor of Pathology, Woman's Medical College of Philadelphia. Fourth Edition, Revised. Philadelphia and London: W. B. Saunders & Company, 1905.

The eighth decennial revision of the U. S. Pharmacopeia has necessitated a new edition of this standard and deservedly popular treatise. In this issue the work has been made to accord with the changes in name and strength of the pharmacopeial preparations, some of which are quite radical, and there have also been added new sections on ethyl chloride, radium, scopolamine, and other therapeutic agents which have sprung into prominence since the third edition. Among the numerous treatises on this most important branch of medical practice, this of Dr. Stevens has ranked with the best, and the new edition, now offered to the medical public, preserves its reputation as one of the authoritative works on materia medica and therapeutics. The author's spelling of the alkaloids is, however, shockingly bad.

Dose-Book and Manual of Prescription-Writing; with a List of the Official Drugs and Preparations, and the More Important Newer Remedies." By E. Q. Thornton, M.D., Assistant Professor of Materia Medica, Jefferson Medical College, Philadelphia. Third Edition, Revised and Enlarged. Philadelphia and London: W. B. Saunders & Company, 1905.

The publication of the new edition of the U. S. Pharmacopeia has necessitated a revision of all the standard works on materia medica and therapeutics, and of this excellent little manual as well. Dr. Thornton's is not a treatise on materia medica or therapeutics, but it is a useful companion to any such work, giving a great amount of information on dosage, solubility, official preparations, etc., in a most convenient form for reference. In the appendix is a table showing the changes in strength ordered by the new pharmacopeia. It is a book especially designed for the student and young practitioner, but as a work of reference will find a place on the shelf of the busy physician who may wish to refresh his memory regarding the strength of a certain preparation or its dose, and has not the time to consult a large work.

Organotherapy, or Treatment by Means of Preparation of Various Organs. By H. Batty Shaw, M.D., F.R.C.P. Illustrated. Chicago: W. T. Keener & Co., 1905.

Among modern therapeutic methods, the employment of animal organic extracts is of particular interest and value, but the literature on the subject is scattered through so many periodicals and monographs that it is practically inaccessible for general use. The necessity for a compact yet comprehensive manual seems to be filled by this little book, which contains brief accounts of the physiology of the various glands of the body, in addition to a review of the practical application in disease of the derivatives of the organs. At the present day a working knowledge of the principles of organotherapy is a necessity for every competent practitioner, and the essential facts are here gathered and presented in a concise and attractive form. The development of this mode of medication is also traced in a very interesting manner in an introductory chapter.

Blakiston's Quiz Compends. A Compend of Diseases of the Skin. By Jay F. Schamberg, A.B., M.D., Professor of Diseases of the Skin, Philadelphia Polyclinic and College for Graduates in Medicine; Fellow of the College of Physicians of Philadelphia; Member of the American Dermatological Association. Fourth Edition, Revised and Enlarged, with 108 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1905.

This edition of Schamberg's Compend on Diseases of the Skin contains a new chapter on actinotherapy and radiotherapy; otherwise it appears to have undergone no change. The book is well illustrated and will doubtless continue to be a favorite with students.

Der Aerztliche Ratgeber in Bild und Wort. Atlas und Hausbuch für Gesunde und Kranke. Unter Mitwirkung von Dr. G. Brühl, D. F. Crämer, Dr. Karl Grassmann, Dr. O. Haab, Dr. A. Jordan, Dr. H. Kerschensteiner, Dr. Albrecht Krecke, Dr. Paul T. Müller, Dr. W. Praussnitz, Dr. Gust. Preiswerk, Dr. A Schlossmann, Dr. Ludwig Seitz, Dr. W. Weygandt, herausgegeben von. Dr. Med. Fr. Siebert. München: J. F. Lehmanns Verlag; New York: Paul B. Hoeber.

This book is one that would serve admirably as an introduction to the whole science of medicine, but it is less commendable as a family guide. It is not so much that directions for self-treatment are given, for much care has apparently been exercised in this regard, but too much stress is laid on the graver and fatal aspects of disease, with a Teutonic bluntness that appears out of keeping with a spirit of true kindness to the layman. The discussions of the various subjects, particularly of pathological questions, seem unnecessarily detailed in many respects, but the reviewer's objection to the work is based mainly on the illustrations. These have been supplied in the greatest profusion, and a large number of them are well adapted to serve their present purpose. Others, however, furnish a picture gallery of horrors, repellent enough to exert a very undesirable effect on the average lay reader. We can see no justification for inserting in such a book, which is intended mainly for the perusal of mothers of families, and is likely to fall into the hands of children, these disgustingly lifelike presentations of the most extreme cases of loathsome skin diseases, fatal cases of burning, gangrenous limbs, revolting bed-sores, advanced facial cancer, etc., while the benefit to the non-medical reader of representations of the fundus oculi in such conditions as diabetic rettinitis and choroiditis is also doubtful. The book is so admirable in many respects, and the advice in matters of hygiene, nursing, and prophylaxis is so sensible and practical, that it is a pity it suffers from these other blemishes, which render it unsuitable for the family bookcase. Physicians could read it with profit, for it touches on many practical matters that often do not suggest themselves to the practitioner, and to them we can recommend it, but we should certainly hesitate before placing it in the hands of a patient.

Contribution à l'Étude de la Funiculite lymphotoxique dans les pays chauds. Par le Docteur R. Menocal, Professeur de Clinique Chirurgicale à la Faculté de Médecine de la Havane. La Havane: M. Ruiz y Ca., 1905.

In this pamphlet the author draws attention to combined lymphangitis and phlebitis of the spermatic cord. He describes four clinical varieties, and discusses their pathological anatomy and treatment.

Minor and Operative Surgery, Including Bandaging. By Henry R. Wharton, M.D., Professor of Clinical Surgery in the Woman's Medical College of Pennsylvania; Surgeon to the Presbyterian Hospital, and the Children's Hospital; Consulting Surgeon to St. Christopher's Hospital, the Bryn Mawr Hospital, and Girard College; Fellow of the American Surgical Association. Sixth Edition, Enlarged and Thoroughly Revised, with 532 Illustrations. Philadelphia and New York: Lea Brothers & Co., 1905.

In the successive editions of this popular manual the scope has been gradually enlarged, till now it includes almost all the surgery that the general practitioner requires. Among the more important of the additions may be mentioned tracheotomy, intubation of the larynx, and the operations for appendicitis and for strangulated hernia. The chapter on Bandaging is a model of its kind; the sections on Dressings, Ligatures, Anesthetics, Asepsis and Antisepsis, the treatment of Hemorrhages, and Minor Surgery in general, are all admirable. We note a few omissions, such as treatment of ingrowing toenail, removal of foreign bodies from the nose, ear, etc. For the general practitioner this is, without doubt, a very practical and useful manual.

Traitement de la Lèpre par le Palétuvier ou Manglier Rouge. Par le Docteur Matias Duque, Directeur et Médecin de l'Hôpital de Syphilis et Maladies Vénériennes, San Antonio; Colonel de Santé militaire de l'Armée libératrice de Cuba; et Lauréat de l'Université de la Havane. Paris: Edmond Dubois et Cie., 1905.

The writer of this little book describes his experience in the treatment of leprosy with the extract of red mangrove. His opinion of the efficacy of red mangrove is fortified by short histories of several cases in which the administration of this agent was followed by beneficial results. In view of the fact that leprosy is said to be increasing, this book is both opportune and important.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in Northwestern University Medical School, Chicago; and Frederick Peterson, M.D., President of the State Commission in Lunacy, New York; Clinical Professor of Neurology and Psychiatry, Columbia University. With 341 Illustrations. Fifth Edition, Revised and Enlarged. Philadelphia and London: W. B. Saunders & Company, 1905.

The most conspicuous alterations in this edition of what has come to be recognized as a standard text-book appear to be in the section on mental diseases. Kraepelin's classification of insanity has been added, and two new chapters have been written for the subjects of manic-depressive insanity and dementia præcox. The chnages in the first portion of the volume, though less evident, are numerous, and serve to keep it in accord with the progress that has been made in this department. The work has already been favorably discussed in these columns on several occasions, and it is a pleasure to commend it to those interested.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held December 29, 1905.

DR. CHARLES F. ADAMS IN THE CHAIR.

Complete Rupture of the Uterus During Parturition.—Dr. L. A. LADINSKI reported this case. The patient was 34 years old; her menstruation began at 15, was regular, and she had had seven children and one miscarriage. Ten days before admission to Beth Israel Hospital she gave birth to a dead child after a very protracted labor. Since then she had been ill with pain in abdomen and left shoulder. Temperature on admission was 104°, the pulse rapid and feeble. Micturition was painful and difficult. A mass could be felt in the suprapubic region. Vaginal discharge was very foul and profuse, simulating sloughing cancerous tissue. On operation a large tear was found extending through the posterior wall of the cervix and posterior *cul-de-sac*, readily admitting the passage of the hand into the peritoneal cavity. The uterus was found to be extremely anteverted, the cervix pointing backward. Anterior and above the uterus a large mass could be felt which appeared to be placental tissue and blood clots. This was found to be blood clots and omentum adherent to the intestines and uterus. At the point of adhesion the omentum was in a state of necrosis. About six inches of omentum was ligated off and removed. The tear in the *cul-de-sac* was packed with iodoform gauze and the peritoneal cavity was drained in different directions. The patient made a slow but complete recovery.

Incomplete Rupture of the Uterus.—Dr. Ladinski also reported this case. The patient was 29 years old, had had six children with normal labors. Three weeks before admission to the hospital she fell and hurt herself. Two and a half weeks before full term she was in labor; twenty-four hours elapsed before the physician was called. He found her bleeding severely. Examination revealed a placenta prævia lateralis and he did a podalic version, delivered the fetus, then the placenta piecemeal, but still the hemorrhage continued. He then found an extensive laceration of the cervix. The uterus and vagina were packed with gauze and the patient stimulated energetically. Eighteen hours after delivery Dr. Ladinski saw the patient and had her sent to the hospital. On admission her pulse was from 180 to 200, and at times imperceptible. Intravenous infusion was given. Examination revealed a large tear through the cervix and body of the uterus on the left side, extending up to the fundus but not including the peritoneum. The layers of the left broad ligament were separated and the parietal peritoneum was dissected on the left side of abdomen to almost the umbilicus. Large clamps were applied to the ruptured borders of the uterus, the subperitoneal cavity and uterus were packed with gauze, and a tight abdominal bandage applied. The patient died a few hours later.

Spontaneous Rupture of Uterus in Seventh Month of Pregnancy.—Dr. Ladinski presented this specimen. The patient was 28 years old, whose menstruation began at 16th year. She had been married ten years, and had had three children and one miscarriage seven years ago. Last child was born five years ago, the labor being normal except for an adherent placenta. Four weeks after delivery she was curetted and immediately after complained of severe pain in the pelvis, had vomiting, distension in abdomen, and moderate obstruction of bowels. Shortly after she was removed to the hospital, where Dr. Torrens did a vaginal section on the day following. Seven months ago she became pregnant. Five days before Dr. Ladinski saw her she had slight pains and some spottings from the uterus. Examination revealed a normal position of the fetus, but no dilatation of the os uteri. Rest in bed and opiates was ordered and the bleeding stopped, but the pains in back and abdomen continued. At the end of five days she was found to be in a state of collapse, with severe pains in abdomen, extremely pale and restless, nausea, and vomiting spells. The respirations were rapid and gasping, the pulse thready, and at times imperceptible. The patient was removed to the hospital. The abdominal cavity was found to be filled with blood, both free and clotted, in which the fetus, with the unruptured amniotic sac entirely freed from the uterus, floated. The fetus was dead. The uterus presented a ragged tear about four inches in its right upper quadrant of the anterior wall. As there were several areas on the surface of the uterus which looked like old cicatrices he decided to do a hysterectomy. She made an uninterrupted and rapid convalescence. This was, in all probability, a case of rupture of the pregnant uterus caused by the presence of old cicatrices, the result of perforation either by the unskillfully applied curette, or, what was more probable, of tearing away parts of the uterine wall while attempting to remove particles of adherent placenta with the finger.

Pregnancy in a Woman with Imperforate Hymen.—Dr. Ladinski presented this patient, a girl 16 years old, with an imperforate hymen and yet seven months pregnant. She menstruated first in her 13th year and had only menstruated twice since. Upon examination there appeared to be a small opening in the hymen just beneath the situation of the meatus urinarius.

Dr. A. STURMDORF, referring to the pathogenesis of these uterine injuries, said that during the past year there had been much literature on this subject, especially regarding those occurring after cesarean section, and it was a fact that something more must be present than scar tissue. Some considered that rupture occurred when the placenta grew over the site of an old scar, thus rendering the scar more boggy and more easily stretched. Recently he saw what he believed to be a plausible explanation of rupture occurring after cesarean section; it was the softening of the scar due to the displacement of the decidual cells; if the mucosa was included in the sutures, or part of the mucosa was infolded between the muscular layers, when pregnancy occurred the cells in the muscular layer might become the seat of decidual changes, causing an extreme softening of the scar and rupture. He thought that possibly this was the cause of the rupture in the case reported. During the pulling of the injured parts some of the mucosa was included in the scar tissue, and during the subsequent pregnancy when the accident occurred the same decidual growth was present. The microscopical study of a section of the tear he thought would prove of interest.

Dr. A. E. GALLANT did not think it was fair to compare the scars resulting from cesarean section with those of a myomectomy. In one the wounds were clean cut, with clean sutures and primary union. It was well known that scars formed by granulation tissue, or, without suturing, were more friable than those resulting from clean-cut and clean-sutured wounds. This, in all probability, accounted for the smaller number of cases of rupture following cesarean section. He said he had seen an imperforate hymen so small that the two tiny openings could be found only with the greatest difficulty; yet this woman was pregnant to the fourth or fifth month and had an external and intravaginal gonorrhea as well.

Dr. LADINSKI said that a microscopical examination of the tissue about the tear had been made but the report was not yet complete. But the pathologist had told him that the piece removed at the scar showed degeneration of the muscular tissue; in other words, there was not only a degeneration of the scar tissue, but of the muscular tissue as well. He said that a scar formed after the removal of a fibroid that was imbedded in the wall of the uterus, when there was a raw surface to cover over, was more likely to break down than one formed after a cesarean section. He said he would not do a myomectomy in a child-bearing woman unless the myoma was a subperitoneal one.

Intestinal Gangrene from Mesenteric Embolism During Pregnancy.—Dr. A. STURMDORF presented this specimen. It was interesting not so much as illustrating a case as to

show a condition about which little or nothing was known. One and a half years ago Dr. Roswell Park of Buffalo described four cases of intestinal gangrene from mesenteric thrombosus or embolism whose etiological factors were obscure. He excluded all cases in which an apparent cause existed, those cases occurring in apparently healthy individuals. While the literature on the subject gave but forty-one or forty-two cases, not one of them had been published as occurring in the female or during pregnancy. Whether pregnancy had anything to do with its occurrence or not he could not say. By a strange coincidence Dr. Sturmdorf saw two cases in a comparatively short space of time. The first case he could get no details of and the specimen was lost. The second case was very interesting. The patient was a little woman in apparently perfect health. There was nothing in her previous condition to account for her trouble. There had been no intestinal trouble of any kind. Between the fifth and sixth months of pregnancy she suffered severe pain, and her attending physician suspected the occurrence of a premature labor, but there were no evidences of an impending labor. The abdomen became enormously distended; there occurred fecal vomiting and symptoms of intestinal obstruction. Abdominal section revealed gangrene of almost all of the jejunum and ileum. The nature of the trouble only became apparent when he had dissected the large mass. No large vessels were tied because they were occluded by thrombi. The patient died. He offered one theory as to the cause of the condition, that it was the result of a toxemia which produced ulcerative conditions within the intestinal mucosa. He believed this to be the only rational theory. All that was so far known of this trouble was that two sets of symptoms were presented, viz., the diarrheal and those of acute intestinal obstruction. When there was distension it was impossible to make a certain diagnosis. All these cases died, whether operated upon or not.

Fibroma Molluscum Gravidarum; a New Clinical Entity.—Dr. Samuel M. Brickner said that in the literature, after a very exhaustive search, no reference, even remotely associated with the theme, had been found, and he believed this communication to be the first to deal with the subject. He named the condition fibroma molluscum gravidarum for the reasons that clinically and pathologically the lesion corresponded with fibroma molluscum as known and described by dermatologists, and that the form discussed appeared only during pregnancy. Others had noted the coincidence of the two conditions, but, like himself, had supposed that the phenomenon had been recorded. It differed in no way histologically from the disease when found in males or in the non-pregnant, although its clinical course differed widely. It first appeared about the fourth or sixth month of pregnancy as small, slightly pigmented or non-pigmented sessile or pedunculated excrescences, which increased slowly in number as pregnancy advanced until, at full term, there might be as many as forty or fifty. Within a few weeks or months after delivery the excrescences lose their pigment and gradually disappear. No symptoms apart from the eruption were observed. They were distributed mainly about the neck. The lesions varied in size from a pin head to a split pea, projected above the surrounding skin, were often sessile, frequently having a small pedicle. Although the fibromata were very frequently pigmented, the pedicles of those which were pedunculated were always of the color of the skin. Upon their disappearance they left no trace nor scar. Their appearance was, in all probability, due to some disturbance of metabolism during pregnancy, and the best argument to this view was the fact that the lesions spontaneously disappeared within a short time after delivery, and at a time when other regenerative processes that followed parturition occurred. The prognosis was good and the treatment evident. After presenting the histological description of the tumors, of which more than a dozen were examined, by Dr. F. S. Mandlebaum, he recapitulated as follows: Fibroma molluscum gravidarum was a lesion of the skin appearing in the latter half of pregnancy, bearing the histological characters of fibroma molluscum, but differing from it clinically in its total disappearance post-partum at a time when the other regenerative processes were being completed. Its distribution was limited to the neck, the breasts, and the submammary area. The lesions were frequently pigmented; but this was not always the case and was not an essential element of the condition. The pigment ran from a light yellowish brown to a dark brown. The disease formed a clinical entity hitherto undescribed, whose essential elements were the appearance of fibrous mollusca during pregnancy and their vanishing post-partum. Pathologically the growths belonged to the group of fibroma molluscum.

Dr. S. Pollitzer thought that it was rather humiliating that dermatologists should call attention to gynecological conditions. The former rarely saw it. The women were not at all troubled by it and, if discovered, it was done casually, when the patient consulted the physician for something else. The condition was not at all uncommon among adults, but he had noticed a greater tendency to multiplication of these little tabs of skin in pregnant women, and their disappearance after delivery. These little tabs were not described in text-books at all. Fibromata mollusca as described in the text-books were a great deal larger, even to the size of apples.

Remarks on the Dermatoses of Pregnancy.—Dr. S. Pollitzer said that though there was no single disease of the skin that occurred exclusively during pregnancy and at no other time, they were nevertheless justified in speaking of the dermatoses of pregnancy as of a distinct etiological group, because under the influence of pregnancy, which produced profound metabolic, nervous, and vascular changes in the entire organism of which the skin was a part, diseases were noted which, as a matter of clinical observation, were in most intimate relation to the pregnant state. They included under the term (1) those diseases which occurred in a preponderating number of cases during the pregnant state, impetigo herpetiformis; (2) those whose intimate connection with pregnancy was manifested from the fact that they disappeared with the evacuation of the uterine contents, herpes gestationis, chloasma; (3) those transitory reflex vascular and nervous dermatoses like urticaria, erythema, hyperidrosis, of which they could say that they were found with relative frequency in pregnant women not subject to them during the non-pregnant state, and that their pathological character afforded some justification for assuming their relation to pregnancy. Finally, there was the influence of pregnancy on existing dermatoses to be considered. Impetigo herpetiformis was a rare and generally fatal disease which had occurred in 75 per cent. of the cases in pregnant women. This large proportion made it possible that pregnancy had a determining influence, though there was no other evidence, and the disease had the appearance of an infectious process. Herpes gestationis was a form of Duhring's disease. Dermatitis herpetiformis occurred in the gravid and disappeared usually as soon as the uterus was emptied. There was considerable ground for regarding the disease as due to an autointoxication. Chloasma gravidarum also commonly disappeared soon after delivery, differing in that respect from the similar condition known as chloasma uterinum. The condition to which attention was drawn by Dr. Brickner, fibroma molluscum gravidarum, belonged to this group of diseases which disappeared post-partum. These two diseases, chloasma and fibroma molluscum suggested an analogy with the papillary and pigmentary distrophy which was the principal characteristic of the disease which the author described in 1890, acanthrosis nigricans. In this disease cancer of the abdominal or pelvic organs was noted in over 75 per cent. of the cases, making it probable that the skin affection was a reflex of interference with the functions of the great ganglia of the abdomen or of the adrenal bodies. The mechanical effect of the gravid uterus in the production of edema and the interference with the venous current might produce secondary effects on the skin, pruritis, eczema.

The third group, which included urticaria, erythema, and hyperidrosis, rested on purely clinical evidence for their association with pregnancy, and they might be explained as in part due to interference with the intestinal function and in part to faulty metabolism, maternal or fetal. As to the relations of pregnancy to eczema, acne, etc., he denied the possibility of the production of these diseases by pregnancy, though he admitted that a smouldering eczema or acne might be lighted up in the disturbance of the vascular balance incident to that state. As to psoriasis, some cases got well and some grew worse during pregnancy, just as they did during any other equally prolonged period.

Dr. Samuel W. Bandler said that urticaria had been proven to occur more frequently during the pregnant state. It had also been proven that women during menstruation, during the gravid state, and at the menopause were more prone to disorders of various sorts which were explained on the metabolic theory.

Dr. William S. Stone said that, as a matter of fact, many of these dermatoses, as well as other manifestations of pregnancy, occurred in the early period of pregnancy when such factors as pressure of the growing uterus upon the abdominal nerves came into force.

Dr. L. A. Ladinski recalled a case of a patient suffering from pemphigus gravidarum and in which he thought the induction of labor was indicated, but not one of the consulting men would give a positive statement as to diagnosis or prognosis. The induction of labor though was followed by a slow cure.

Injuries to the Child's Head During Labor.—Dr. B. Sachs said that for many years he had been anxious to enlist the interest of the obstetrician and of the general practitioner in the injuries which the head of the child was apt to sustain during parturition. Dr. Sachs made the deliberate statement that the world is full of imbeciles, or paralytics, of epileptics, not only in our almshouses and public institutions, but in some of the best families, who might have been normal individuals if they had been given a "square deal" at the time of birth. Years ago his attention was called to the fact that of all the cases of infantile paralysis, a very considerable number were either first-born children or such who had been born after prolonged, often dry, labor. Careful statistics of several hundred of such cases showed that less harm was done by instrumental delivery than by prolonged labor; in such cases the skull and the brain were apt to be seriously compressed, followed by hemorrhage from the minute vessels, and an effusion of blood covering a smaller or greater portion of one or both hemispheres. The hemorrhage might be over one or both motor areas, and this one fact accounted for the frequent occurrence of spastic hemiplegias or diplegias that developed in very young children.

If the hemorrhage occurred over other parts of the brain a condition of imbecility or of epilepsy might develop with little or no paralysis. It was only in the extreme cases in which the symptoms of the injury done was so manifest that the physician could observe the harm done. In the larger number of cases slighter hemorrhages had occurred and the symptoms of paralysis, of imbecility, and of epilepsy were developed only within weeks, sometimes months, after birth, but the causal relation between the conditions at birth and the subsequent illness was none the less certain. He said he was firmly convinced that protracted labor was the most powerful factor in these conditions. It was wise to curtail the period of labor as much as possible and not necessarily wait until the child's heart action became feeble. Many children might have escaped epilepsy, idiocy, and paralysis if the period of labor had been properly managed.

Fore the severe cases of meningeal hemorrhage at birth, Cushing had recently suggested opening the skull and washing out the blood clots, and Dr. Cushing had cured two of four children on whom this plan had been tried. The hemorrhage that had occurred was bound to be followed by secondary changes, and the normal development of parts of the brain and central nervous system associated with it would be interfered with. One must depend upon prophylactic measures and upon more skillful manipulation of labor, and Dr. Sachs said that he could not help but feel that the medical man in attendance at confinements had for many years followed a policy of indifference toward the welfare of the child and had allowed too many children to be born in the world after labor unnecessarily prolonged and in conditions that were a distinct disadvantage to them and to society for the entire period of their natural lives.

Dr. William S. Stone did not think the picture drawn as to the attitude of the general obstetrician was at all exaggerated. He did think, however, that those men who were devoting themselves especially to obstetrics for years did realize the importance of avoiding these protracted labors. The whole question then came down to the dilatation of the cervix. It was taught in the medical schools that one could do almost anything after the cervix was fully dilated, and until that time we must go very slowly; this, of course, resulted in complete and incomplete tears of the uterus very frequently. It was but natural that the proper consideration of the integrity of the lower uterine zone should have possibly carried them too far. But in the long dry labors, which unfortunately were very frequent, especially in private practice, he thought that the discussion during the past year or two would have a great deal of value in calling the attention to the importance of devising means of dilating the cervix in a safer and more rapid way than had been had formerly.

In the cases Dr. Sachs had referred to, the more frequent use of the rubber dilating bags would be one of the best means that could be used at the present time to overcome such troubles. They were easily inserted and could be used in the early stage of labor and they were very efficient, especially in dry labors.

Dr. A. E. Gallant referred to a recent number of the *Annals of Surgery*, in which a French writer recommended the use of forceps as a dilator of the uterus in such cases, shoving the cervix over the blade of the forceps. With the French lock when the blades were approximated they came together and touched; therefore, in attempting to pull the head of the child through a tight cervix the blades would come down over the neck of the child and crush it. When the Hodge forceps was closed the tips would be about one inch apart; but when drawing them through a tight opening the blades here, too, would touch, thus endangering the child. He said that blades should be made so as not to lock that way, and he would condemn the French blades.

Dr. Jacobsohn said that the pressure was exerted by the inelastic bony ring of the pelvis in cases of flat pelves, especially upon the parietal bones and over the situation of the motor area, and that cases of infantile spastic paraplegia were not uncommon in these cases of obstructed or prolonged labors. The uterus was supposed to have an expulsive power of 50 pounds; the intermittent pressure was exerted upon these two points of the child's skull as it entered the pelvic brim and the part of the brain immediately beneath these points usually suffered. He did not believe the size of the head or the bony parts could be accurately measured *in utero* in a living woman. The reason labors were so protracted was not so much an undilatable cervix as because of the undilatable bony parts, the head being jammed into this hard, bony ring.

Dr. B. Sachs said that certain rules should be made for the guidance of those in charge of confinements, and his remarks were addressed particularly to obstetricians. As a rule the hemiplegias and epileptic disturbances would be observed early after birth and were not recognized immediately after birth because they were not looked for. With epilepsy and idiocy it was different. Epileptic disturbances might be due to meningeal hemorrhage occurring during delivery; epilepsy as such occurred only after secondary changes or processes had been engendered in the brain. The same was also true of idiocy. The first-born children were at a tremendous disadvantage.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Twenty-ninth Annual Meeting, Held at the Academy of Medicine, New York City, December 28, 29, and 30, 1905.

(Special Report to the MEDICAL RECORD.)

THE PRESIDENT, DR. WILLIAM T. CORLETT OF CLEVELAND, OHIO, IN THE CHAIR.

(*Concluded from page* 320.)

Bullous Affections and Their Classification.—Dr. EDWARD B. BRONSON of New York City, in presenting this paper, said the term bullous diseases should be taken in a very restricted sense, inasmuch as a bullous eruption was nearly always the concomitant of some other disease. Of bullous affections there were two fundamental divisions: (*a*) Obstructive forms, in which bullæ occurred as the result of obstruction in the sweat follicles or in the lymph channels, with mechanical distention at the point of escape in the epidermis; (*b*) acantholytic forms, in which a vital impairment of the cohesion between the prickle cells enabled a relatively slight effusion of serum to force its way between the cells and produce a lacuna. Acantholysis might be a consequence (1) of external injury; (2) of absorption into the epidermis of venomous or infectious matter; (3) of some other cutaneous affection, which might be either symptomatic or idiopathic, and of which the bullous lesions were only an incident; (4) or finally, of some internal diseaes, transmitting an injurious influence directly to the prickle cell layer of the skin, in which case the bullous eruption might be a pathognomonic sign either of a localized skin lesion or of some more general disease reflected to the skin through the nervous system, but even in such cases the immediate cause of the bullous effect was very often some more or less slight and commonly overlooked local external injury.

The Classification of Bullous Diseases.—Dr. J. T. BOWEN of Boston, Mass., said it was generally conceded in the dermatological world to-day that the word pemphigus could no longer be accepted in its old sense as representing almost all bullous eruptions not due to traumatism, or which represented a stage in the evolution of some well-known dermatosis. It was equally certain that while an advance had been made in eliminating many forms from this class, no unanimity had been reached, and the subject was very far from being scientifically settled. The group that had been so ably described by Duhring as dermatitis herpetiformis had come to be regarded by almost all as entitled to its own place, although there were differences of opinion as to just what should be included in that group. Dr. Bowen said he would propose dividing the bullous dermatoses into the following provisional groups: (1) Acute infectious bullous dermatitis. This was the form that had been described as acute infectious pemphigus. (2) Chronic hereditary bullous dermatitis. (3) The form of bullous dermatitis which was described first by Neumann under the title of pemphigus vegetans. (4) The form of bullous dermatitis described as pemphigus foliaceus. (5) Dermatitis herpetiformis. The boundaries of this form could not at present be strictly drawn. (6) There remained a class of cases characterized by more or less constant recurrence of pure bullæ, without signs of multiformity, and with a certain symmetry of the lesions, which were frequently found on the mucous membrane. The affection was accompanied by very few subjective symptoms, and pursued a chronic and usually fatal course. This was the form described as chronic pemphigus by Brocq and Besnier, and was the prototype of the German pemphigus.

Dr. JAMES C. JOHNSTON of New York City, in opening the discussion on this subject, thought it was a good idea to eliminate the class of cases in which the eruption was accidental or infectious, or more rarely cystic. This, he said, narrowed the class, practically, to four clinical entities, namely, epidermoclysis bullosa, pemphigus, dermatitis herpetiformis, and pompholyx. In speaking in favor of the autotoxic origin of these lesions, he took up the changes that were constantly going on in the alimentary canal, and there, he thought, we had to look for most of the toxins that played a rôle in lesions of the skin. They might possibly be traceable to a failure of the process of digestion in the gastrointestinal tract, or to a failure of elaboration in the absorption of the intestinal products, which was chiefly carried on in the liver; or, thirdly, to a failure of elimination by the kidneys and skin. It was difficult to learn which of these three factors was at fault.

The discussion of the subject of the classification of bullous diseases was continued by Drs. Samuel Sherwell, L. A. Duhrling, M. B. Hartzell, Ravogli, J. Nevins Hyde, Jay F. Schamberg, Charles W. Allen, H. W. Stelwagon, William A. Pusey, H. C. Baum, and Charles J. White, and was closed by Drs. Bronson and Bowen.

Erythema Perstans, with Report of Two Cases Involving Circinate Lesions.—Dr. GROVER W. WENDE of Buffalo, N. Y., read this paper, in which he offered the following conclusions: (1) That we were dealing with a variety of skin affections which might be included under the general name of erythema perstans, which had points both of similarity and dissimilarity. In some, there were simple, chronic inflammatory patches; in others, diffused patches, papules, or nodules. Frequently evolution began in the center, and left annular or gyrate figures. (2) There seemed to be no law governing their duration, since they might last weeks, months, or years, or even during the entire life of the patient. The etiology might still be considered as obscure. No age was exempt, cases having been reported in children and in those advanced in years. The condition seemed to be more frequent in men than in women. (3) A study of the cases reported showed that the condition might be caused by intestinal toxemia, a gouty or rheumatic diathesis, or atmospheric changes. (4) The limited number of microscopical examinations that had been made revealed slight differences. All of the cases showed a superficial inflammation, dilatation of blood-vessels, infiltration of cells, and an edematous condition of the tissues.

Dr. JOHN A. FORDYCE said he had seen two cases similar to the ones reported by Dr. Wende.

Dr. JAY F. SCHAMBERG mentioned a case of annular, persistent erythema of the face and hands in a young man, which ultimately disappeared under the use of chrysarobin.

Dr. JAMES M. WINFIELD of Brooklyn reported a case of persistent erythema in a young girl which disappeared with the establishment of the function of menstruation.

Considerations on Pemphigus Vegetans.—Dr. A. RAVOGLI of Cincinnati, Ohio, read this paper. He stated that pemphigus vegetans was a malignant and grave form of pemphigus, its peculiar character consisting in the proliferation of the papillary layer, caused by the irritating qualities of the morbid secretions. It was constantly accompanied by alterations of the urine, as a result of diseased kidneys. In connection with his paper Dr. Ravogli detailed the history of a fatal case of pemphigus vegetans that had recently come under his observation.

Dr. M. B. HARTZELL reported a fatal case of pemphigus vegetans in which the skin lesions were comparatively insignificant, being limited to a number of bullæ and vegetations in the axillæ, with a considerable amount of pigmentation. The patient died without any discoverable reason for the fatal outcome.

Two Cases of Multiple Tumors of the Skin in Negroes, Associated with Itching.—Dr. JAY F. SCHAMBERG and Dr. ROSE HIRSCHLER of Philadelphia, Pa., presented the clinical histories of two cases of long-standing nodular growths in the skin of negro women. The disease was possibly the same as that described by Dr. W. A. Hardaway under the name "Multiple Tumors of the Skin Accompanied by Intense Pruritus." The essential features in the two cases, which were almost identical, were as follows: (1) The development of tubercles and tumors in the skin, principally of the extremities, accompanied by more or less severe itching. (2) The horny, resistant character of the epidermis overlying the growths. (3) The persistence of the

tubercles and itching for many years. (4) The recurrence of the nodules after extirpation. The two nodules which were excised in the first case were replaced by tumors of the same character as those removed. The cause of the disorder was undetermined. The theory that the growths might be the result of traumatism from scratching was borne out neither by the statements of the patients nor by the appearance of the lesions. Pathologically, the sequence of events appeared to be as follows: Dilatation of the cutaneous blood-vessels; cell infiltration, chiefly in sharply circumscribed masses; proliferation of the fixed connective tissue elements; formation of new collagenous fibers. A feature of more than passing interest was the great abundance of mast cells present.

Two Cases of Paget's Disease Treated by the X-Rays, with a Report of the Microscopical Findings in One of Them After Prolonged Treatment.—Dr. M. B. Hartzell of Philadelphia, Pa., said that from the results obtained by the treatment in the two cases of Paget's disease reported in this paper, and more particularly from the microscopic study of one of them after treatment had been continued for a considerable time, he believed we might conclude that the careful, systematic, and prolonged use of the *x*-rays might completely and permanently cure the disease of the areola and nipple, but he also believed that this agent had very little effect upon the epithelial proliferation in the ducts of the nipple, and in the alveoli of the mammary glands. If Paget's disease was in the beginning limited to the areola and surface of the nipple, the ducts and mammary glands becoming involved only after some considerable time, then we might hope, by the early and persistent use of the *x*-rays, to bring about a complete and lasting cure; but if the ducts and glands were involved in the process from the beginning the knife of the surgeon should be the first, and not the last, resort. Which of these two views of the malady was the correct one had, in the writer's opinion, not yet been definitely settled.

Dr. Francis J. Shepherd of Montreal, Canada, said that in any case that was at all suspicious of Paget's disease he would not wait for the *x*-rays, but would amputate the breast immediately, together with the adjacent lymphatic tissue.

Dr. J. Nevins Hyde said he agreed with Dr. Shepherd that in every well-defined case the complete ablation of the breast should be immediately done, followed, if it was deemed advisable, by *x*-ray applications as a prophylactic against a possible recurrence.

Dr. Samuel Sherwell of Brooklyn, N. Y., objected to classifying these lesions as Paget's disease when they occurred elsewhere than on the nipple.

Dr. Frank H. Montgomery reported two cases of Paget's disease treated by means of the *x*-rays. In one there was a recurrence near the site of the original tumor. In the other the lesion rapidly disappeared, and the patient had remained cured up to the present time, a period of one year.

Dr. Ravogli regarded the action of the *x*-rays in Paget's disease as only temporary, and he did not believe they could be relied upon to give permanent relief. The best remedy was the knife.

A Case of Chronic Ulceration in the Pubic Region.—Dr. S. Pollitzer of New York City reported the case of a married man, thirty-five years old, a native of the United States and a railroad employee. His present illness began at Richmond, Va., on October 20, 1904, when his attention was attracted to a small papule on the glans penis. Ten days later the papule was transformed into an ulcer, and within a few days a number of small "mattery sores," as the patient described them, appeared on the glans. Shortly afterward he noticed a small papule on the pubic region over the symphysis, from which a sanious fluid was discharged. A small papule, like that on the pubis, also developed on the left side of his forehead. This broke down and ulcerated, but eventually healed. The sore on the pubis, however, proved rebellious to treatment, increasing in area and attaining the size of a silver dollar. In March, 1905, the patient went to Hot Springs, Ark., where he spent nearly three and a half months under the care of Dr. H. P. Collings, who regarded the ulcerations as chancroidal. The patient for a short time was given mercury and the iodides, but under this treatment the ulcers seemed to grow worse. Locally a variety of applications were made, and the condition would improve at times and then again grow worse. Repeated microscopical examinations gave negative results, and spreads and cultures yielded only the usual crop of saprophytic organisms, excepting a single colony of a bacillus which the speaker said he had not been able to identify. It was apparent from its characteristics that it did not belong to the pyocyaneous group, with which, however, it shared some important features. A histological examination of sections cut from the border of the ulcers gave the usual picture of granulomatous tissue in a chronic inflammatory process of the skin. As the case was evidently not improving under external applications it was excised. The patient was subsequently operated on at the Garfield Hospital, in Washington, D. C., for a tumor of the testis, which upon histological examination was apparently syphilitic. In concluding his paper, Dr. Pollitzer expressed the opinion that this chronic ulceration in the pubic region represented a hitherto undescribed form of disease. That the bacillus that had been isolated was the cause of the ulceration had not been proven, but there was a certain degree of probability in favor of that view.

Dr. A. Ravogli said he could recall quite a number of cases of ulcerative lesions involving or surrounding the genitals, in which it had been very difficult to establish whether they were tubercular or syphilitic, or the result of a mixture of both these diatheses.

Dr. L. Duncan Bulkley said that in many of these cases the original lesion was much modified by the ordinary pus organisms which were everywhere present.

Dr. J. Nevins Hyde referred to a number of similar cases of his own in which the ulcerative processes were not syphilitic, as they had resisted the most vigorous and thorough anti-syphilitic treatment. They had been described under the title of chancroidal or lupoid ulceration of the groins, and the most satisfactory treatment that he had had any experience with was continued immersion. The patients were placed in a carefully regulated hot bath, which they left only for necessary purposes until the ulceration had cicatrized.

Dr. Charles W. Allen said he agreed with Dr. Hyde in regard to the efficacy of the permanent bath in the treatment of the class of lesions, which had been described under the name of porosis, and were probably the result of a mixed infection.

A Case of Recurrent Bullous Eruption of the Face; Probably Pemphigus Hystericus.—Dr. Francis J. Shepherd of Montreal reported the case of an unmarried girl of 20 who for the past eight years had suffered from a recurrent eruption on the face. This appeared first as small, inflamed blisters on the forehead, chin, cheek, and nose; these soon increased to the size of a ten-cent piece, became filled with bloody serum, then discharged and formed scabs. There might be half a dozen or more of these blisters at one time. As a rule the bullae came out in successive crops, and lasted about a month. They gave rise to burning, but no itching. There was no regularity as to where the spots might come out, but they had never appeared on the hairy scalp. The blisters left a pigmented mark after healing. Dr. Shepherd said the cause of the eruption was obscure. It was possibly connected with menstruation. The girl's general health was excellent, and the speaker said that he could not divest himself of the feeling that the eruption might be self-induced. At any rate, he was inclined to regard it as a trophoneurosis.

The final session of the Association was devoted largely to the presentation of patients.

Dr. C. T. Dade of New York City gave a demonstration of the uses of liquid air in the treatment of skin diseases.

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama.*	W. H. Sanders, Montgomery	Montgomery.	April 1–6
Arizona.*	Ancil Martin, Phoenix	Phoenix	April 2.
Arkansas.*	J. P. Runyan, Little Rock	Little Rock.	April 10.
California.*	Chas. L. Tisdale, 530 California Street, San Francisco.	San Francisco	April 17.
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver.	April 3.
Connecticut.*	Chas. A. Tuttle, New Haven	New Haven.	March 13.
Delaware	P. W. Tomlinson, Wilmington	Dover	June 19.
Dis. of Col'bia.	W. C. Woodward, Washington.	Washington.	April 12.
Florida.*	J. D. Fernandez, Jacksonville	Gainesville.	April 16.
Georgia	E. R. Anthony, Griffin	Atlanta.	1st week April.
Idaho	J. L. Conant, Jr., Genesee	Pocatello.	April 3.
Illinois	J. A. Egan, Springfield	Chicago.	April 18.
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis.	May 22.
Iowa	J. F. Kennedy, Des Moines	Des Moines.	March 21.
Kansas	T. E. Raines, Concordia	Topeka.	May. 1.
Kentucky.*	J. N. McCormack, Bowling Green	Louisville.	April 24.
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	May 3.
Maine	Wm. J. Maybury, Saco	Portland.	March 13.
Maryland	J. McP. Scott, Hagerstown.	Baltimore.	Latter part of June.
Massachusetts.*	E. B. Harvey, State House, Boston	Boston.	March 13.
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor.	June 12.
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul.	April 3.
Mississippi	J. F. Hunter, Jackson	Jackson.	May 8.
Missouri	J. A. B. Adcock, Warrensburg.	St. Louis.	April 10.
Montana.*	Wm. C. Riddell, Helena	Helena	April 3.
Nebraska	Geo. H. Brash, Beatrice	Lincoln	
Nevada	S. L. Lee, Carson City	Carson City.	May 7.
N. Hamp're.*	Henry C. Morrison, State Library, Concord	Concord	July 6.
New Jersey	E. L. B. Godfrey, Camden	Trenton	June 19.
New Mexico	B. D. Black, Las Vegas.	Santa Fe.	June 4.
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo,	May 22.
N. Carolina.*	Geo. W. Pressly, Charlotte	Charlotte.	May 23.
N. Dakota	H. M. Wheeler, Grand Forks.	Grand Forks.	April 3.
Ohio	D. N. Kinsman, Columbus.	Cincinnati Cleveland, Columbus,	June 12.
Oklahoma	J. W. Baker, Enid	Guthrie.	March 28.
Oregon.*	B. E. Miller, Portland	Portland	May 10.
Pennsylvania.	N. C. Schaeffer, Harrisburg.	Philadelphia, Pittsburg,	June —
Rhode Island.	G. T. Swarts, Providence	Providence.	April 5.
S. Carolina	W. M. Lester, Columbia	Columbia	June 12.
S. Dakota	H. E. McNutt, Aberdeen	Watertown.	July 11.
Tennessee.*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May 2.
Texas	T. T. Jackson, San Antonio	Dallas	June 12.
Utah.*	R. W Fisher, Salt Lake City	Salt Lake City,	April 2.
Vermont	W. Scott Nay, Underhill	Burlington.	July 10.
Virginia	R. S. Martin, Stuart	Richmond.	June 10.
Washington.*	C. W. Sharples, Seattle	Tacoma.	July 3.
W. Virginia.*	H. A. Barbee, Point Pleasant	Parkersburg.	April 10.
Wisconsin	J. V. Stevens, Jefferson	Madison	July 10.
Wyoming	S. B. Miller, Laramie	Cheyenne	June 6.

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all test details regarding the examination in any particular State.

Wisconsin.—The Legislature of this State has recently enacted a law which empowers and requires the Wisconsin State Board of Medical Examiners to refuse to grant licenses or certificates of registration to persons guilty of immoral, dishonorable, or unprofessional conduct, and empowering the courts to revoke and annul any license or certificate issued to any person guilty of immoral, dishonorable, or unprofessional conduct, or fraud or perjury in connection with obtaining such license or certificate, or issued through error.

Oregon.—The Attorney-General of the State of Oregon is of opinion that any unsuccessful applicant before the State Board of Medical Examiners has the right, either personally, or by his agent, to see and examine the markings of his papers.

Virginia.—The following changes were recently made by the State Board of Examiners in regard to sections and number of questions. These will now comply with the requirements of the Confederation of Reciprocating Examining and Licensing Boards:

SUBJECTS	NO. OF QUESTIONS.
1. Anatomy and Embryology	10
2. Chemistry 6, Toxicology 2. Medical Jurisprudence 3.	11
3. Histology 2, Physiology 6, Hygiene 3	11
4. Materia Medica 6, Therapeutics 6	12
5. Pathology 6, Bacteriology 3, Neurology 3	12
6. Laryngology, Rhinology, Ophthalmology, Otology	10
7. Practice, Diagnosis, and Etiology	12
8. Obstetrics 5, Gynecology 5, Pediatrics 2	12
9. Surgery	10

New Jersey.—This State will endorse the medical license issued by any State after examination, provided that the educational, examining, and licensing requirements of that State are substantially equal to or higher than those of New Jersey.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending February 24, 1906.

	Cases	Deaths
Measles	1636	34
Diphtheria and Croup	341	77
Scarlet Fever	214	8
Smallpox		
Chickenpox	162	
Tuberculosis	373	167
Typhoid Fever	22	9
Cerebrospinal Meningitis	15	20
Typhus Fever		
Yellow Fever		
Cholera		
Totals	2,763	315

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending February 24, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	Feb. 3–10	2	..
San Francisco	Feb 3–10	13	..
Florida, Jacksonville	Feb. 10–17	9	..
Georgia, Agusta	Feb. 12–19	10	..
Louisiana, New Orleans	Feb. 10–17	17	..
Maine, Biddeford	Feb. 10–17	1	..
Maryland, Baltimore	Feb. 10–17	4	..
Michigan, Ann Arbor	Feb. 10–17	1	..
Missouri, St. Louis	Feb. 10–17	3	..
Montana, Missouri County	Jan. 1–31	1	..
Silverbow County	Jan. 1–31	1	..
Nebraska, South Omaha	Feb. 10–17	2	..
New York, Buffalo	Jan. 1–31	1	..
New York	Feb. 10–17	1	..
Ohio, Cincinnati	Feb. 2–16	9	..
Tennessee, Knoxville	Feb. 10–17	1	..
Wisconsin, Appleton	Feb. 10–17	2	..
Milwaukee	Jan. 27–Feb. 3	1	..

SMALLPOX—FOREIGN.

Brazil, Bahia	Dec. 8–30	25	2
Pernambuco	Jan. 1–15	..	43
Rio de Janeiro	Jan. 7–28	15	1
Chile, Antofagasta	Jan. 18–Feb. 1	34	17
Coquimbo	Jan. 18–Feb. 1	3	..
China, Canton	Dec. 25–31	40	..
Hongkong	Jan. 6–13	1	..
Shanghai	Dec. 30–Jan. 6	1	2
France, Paris	Jan. 27–Feb. 3	12	..
Great Britain, Bristol	Jan. 27–Feb. 3	5	..
Greece, Athens	Jan. 15–22	..	1
India, Bombay	Jan. 16–23	.	5
Calcutta	Jan. 6–13	..	55
Karachi	Dec. 26–Jan 2	3	..
Madras	Jan. 13–19	..	12
Rangoon	Jan. 6–13	..	14
Italy, General	Jan. 25–Feb 1	39	..
Mexico, Tuxpam	Jan. 31–Feb. 13	..	5
Russia, St. Petersburg	Jan. 20–27	5	..

YELLOW FEVER—FOREIGN.

Brazil, Rio de Janeiro	Jan. 7–28	8	6
Ecuador, Guayaquil	Jan. 8–28	20	12

CHOLERA—INSULAR.

Philippine Islands, Manila	Dec. 23–Jan. 6	5	5
Provinces	Jan. 11	Present.	

CHOLERA—FOREIGN.

India, Calcutta	Jan. 6–13	..	61
Madras	Jan. 13–19	..	1
Rangoon	Jan. 6–13	..	1

PLAGUE—INSULAR.

Philippine Islands, Manila	Dec. 23–30	1	1

PLAGUE—FOREIGN.

Brazil, Pernambuco	Jan. 8–15	..	2
Rio de Janeiro	Jan. 7–28	9	1
Chile, Antofagasta	Jan. 18–Feb. 1	2	1
China, Hongkong	Jan. 6–13	2	2
India, General	Jan. 6–13	1351	1140
Bombay	Jan. 16–23	..	31
Calcutta	Jan. 6–13	..	16
Karachi	Dec. 26–Jan. 2	9	7
Madras	Jan. 13–19	..	4
Moulmein	Jan. 20	..	1
Rangoon	Jan. 6–13	..	18
Japan, Kobe	Dec. 9–Jan. 11	36	30
Kobe	Jan. 13–20	3	2
Osaka	Dec. 9–Jan. 11	73	62
Peru, Callao	Jan. 12–25	1	..
Lima	Jan. 12–25	7	5
Mollendo	Jan. 12–25	6	2
Paita	Jan. 12–25	1	..
Truiillo	Jan. 12–25	25	10

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 10.
Whole No. 1844.

New York, March 10, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

INTRACRANIAL LESIONS AS SEQUELÆ OF CHRONIC PURULENT OTITIS MEDIA.*

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Before such an audience as this it is possible to take for granted a familiar knowledge of the frequency with which cerebral complications develop secondary to otitis media, and also of the cardinal symptoms which indicate them.

There are, however, a number of interesting points connected with this subject which are quite worthy of the consideration of both otologists and neurologists. And their discussion by such a gathering of specialists is quite likely to elicit facts and observations of great value.

I would like to consider with you (1) the possible cerebral complications of otitis media, (2) the symptoms which aid us in their diagnosis, (3) the proper methods of surgical treatment, and (4) the results of surgical operations for these complications.

I. The ordinary cerebral complications are abscess of the brain, meningitis, and sinus thrombosis. We are now obliged to add to this category acute encephalitis. This is an acute inflammation of the brain limited in its extent usually to the motor zone, but occurring also in any region. Strümpell was the first to describe it, and he thought it was most common in childhood. Oppenheim, however, has proven that it occurs in adults, and during the past two years many cases have been recorded. Further observation has shown that one of its active causes is otitis media. Voss[1] and Mygind[2] have recently reported several cases in which this condition was found either at autopsy or at the time of operation for supposed brain abscess. It consists of a limited area of hemorrhagic softening in the brain, either on the surface or beneath the cortex. It may be limited to the domain of one arterial branch. It is an acute inflammation, with congestion and minute hemorrrhages, and results in a destruction of the brain tissue, and as a result a sclerotic patch of greater or less extent is produced. It is not, however, fatal. Among Strümpell's cases, many got well. In the cases of Voss and of Mygind, recovery occurred. In these cases it is uncertain whether the recovery was spontaneous, or was aided by the free incision in the brain and by drainage which was established. In none of these cases has the incision revealed any pus.

The symptoms of acute encephalitis are very similar to those described as occurring in abscess, viz., the sudden appearance of acute cerebral symptoms, evidence of acute infection, fever, slow pulse, stupor, and, in addition to these general symptoms, certain local symptoms, sensory or motor aphasia, monoplegia, facial or brachial paralysis, or cortical epilepsy. There is no optic neuritis, there is no irregularity of the pupils, there is no vertigo, and little headache. In five cases of Oppenheim, the general symptoms passed away, the local symptoms remained as evidence of destruction of brain tissue. In one case which was trephined under the supposition that abscess was present, a fatal result followed, and the autopsy showed the condition described as acute hemorrhagic encephalitis without any pus. In one case of Voss which was operated upon, a bluish-gray-appearing tissue was found with a sharp line of demarcation between it and the normal brain. This measured about 6 cm. in diameter, and was located in the temporal lobe. Free incision failed to show pus, and the result was recovery. Voss reports two similar cases.

It may be thought that these cases are really cases of abscess in an early stage, which would have gone on to suppuration had no operation been done. But this theory is opposed by the record of Strümpell's and Oppenheim's cases, where without operation recovery ensued. Is it not possible, therefore, that in the occasional cases which all otologists have seen, where a cerebral complication has been suspected but not operated upon, and where recovery has followed, the real condition has been an acute encephalitis?

II. The symptoms of cerebral abscess. When a chronic otitis media is complicated by the development of an abscess within the skull, certain new symptoms not previously observed appear. These are (1) generalized or local headache of a severe and constant type; (2) a marked change in the mental state, consisting of dullness and hebetude, seeming lack of thought or great slowness of thought, irritability of temper, desire to be left alone, and to keep the mind at rest, imperfect power of attention, defective memory of recent events, and a feeling of depression; (3) tenderness of the head to percussion, and in some cases, as the tension within the cranium increases, a change in the tone elicited by percussion on one side when heard through the stethoscope; (4) abnormal temperature, whose variations are not pathognomonic of any one of the various conditions possible; (5) a pulse which varies with the temperature in meningitis, but is liable to be slow in abscess and becomes slower as the case goes on; (6) facial paralysis, which if due to an affection of the facial nerve in its course along the posterior wall of the cavity of the ear, is on the side of the diseased ear, but which if due to brain lesion is on the opposite side; (7) optic neuritis, which is of great value, but does not develop until quite late, when it appears at all; (8) an initial contraction of one pupil, followed later by a permanent dilatation of that pupil, which is a frequent sign of abscess, but is, however, not a constant symptom.

These are symptoms which we all recognize as being of great importance in the diagnosis. And yet they are not invariably present. Some may be

*Presented at a meeting of the New York Academy of Medicine, February 1, 1906.

absent, and great variations in each of these symptoms have been observed in different cases, so that no one of these symptoms an be declared as pathognomonic of abscess. Any further help in the diagnosis will therefore be welcomed by the physician who suspects an abscess, but is still in doubt regarding the possibility of a meningitis.

There are two recently discussed methods of investigation which merit our attention. I refer to the examination of the crebrospinal fluid obtained by lumbar puncture, and to the examination of the blood.

The cerebrospinal fluid in a normal state is clear, contains few flocculi, and when 5 c.c. are centrifugated and carefully examined microscopically, only one or two leucocytes are to be found. In all syphilitic patients the number of leucocytes is very much increased, being as high as 80 in tabes, from 30 to 150 in paresis, and from 20 to 60 in cerebrospinal syphilis. In meningitis the number of leucocytes is enormously increased. Fuchs and Rosenthal[3] have found as high as 952 cells in tuberculous meningitis, and nearly 100 in general meningitis. And in the recent literature I find a large number of cases reported in which an increase in the number of leucocytes in the cerebrospinal fluid has been observed in all forms of meningitis. On the other hand, this is not true of abscess. In a number of cases collected during the past two years I have failed to find any record of an increase in leucocytes in the cerebrospinal fluid except in those cases where a complicating meningitis was present. In the history of case after case the record is made that the examination of the cerebrospinal fluid was negative. These cases have been collected from many sources and may be regarded as reliable. I think we may conclude that the examination affords a valuable differential point between abscess and meningitis.

It also affords another important indication. In meningitis it is almost uniformly stated that microorganisms have been found in the fluid. They are tubercular bacilli, or the diplococcus, or the pneumococcus, or some micrococcus. But in abscess such microorganisms, though searched for, have not been found. Thus Neumann[4] and Grunert[5] have recorded several such cases, and I can add one of my own. Here, then, we have another differential point.

The blood examination is of equal value. While any inflammatory state like that present in otitis media acuta is likely to increase moderately the leucocytes in the blood, a very great and sudden increase in their number is a very valuable indication of a new inflammatory complication. Thus, in a case of chronic otitis media we may find 8,000 or 10,000 leucocytes, but if a meningitis or a brain abscess develops, the number rises to 20,000 or even 35,000. Such a rise alone will indicate that we have more than a mere otitis media in our patient.

But this is not all. Our data as yet are not very extensive, but I think we may safely say that a more rapid rise in the number of leucocytes and a higher leucocyte count is found in meningitis than in brain abscess. Thus in two cases which I was able to contrast as they progressed simultaneously, and in which the autopsies showed the exact condition, it was observed that in the case of meningitis the leucocyte count on the second day of the disease was 9,000, on the third 11,000, and then rose on the fourth day to 22,000, and remained between 22,000 and 26,000 till death on the fourteenth day. In the case of brain abscess the number rose slowly from 9,500 on the third day of the disease up to 14,000 on the eighth day, but never went up above 15,000 up to death, which occurred one month after the onset.

There is another fact elicited by a blood examination which is important. A rapid rise in the ratio of the polymorphonuclear leucocytes to other elements in the blood has been observed in all cases of acute inflammatory process. Usually such a rise is to be watched for, and if the ratio changes from 65 or 70 per cent. up to 75 or 80, or 85 per cent., the probability of a cerebral complication is very great. I can cite a case in point.

This case warrants consideration here, though Dr. Dench, whose case it was, will probably report it in full.

In a woman whose mastoid had been operated upon for acute exacerbation of a chronic otitis, cerebral symptoms developed four weeks after the mastoid operation. These were the sudden onset of a motor aphasia with much paraphasia, the understanding of language being perfect, but her speech being a queer jargon, wholly unintelligible. In the absence of other symptoms, except headache, I supposed the condition to be due to a thrombosis of a branch of the Sylvian artery, as she had well-marked arterial sclerosis and no other signs of cerebral abscess. This diagnosis seemed to be confirmed by the fact that for a week longer no other signs appeared. During this week, however, a slowly increasing leucocytosis was observed, the blood count made by Dr. Dixon showing a rise from 9,000 to 15,500 leucocytes, and an increase from 70 per cent. to 85 per cent. in the polymorphonuclear bodies. This convinced Dr. Dench that an abscess was gathering in the brain, a suspicion which was confirmed on the tenth day after the onset of the aphasia, when unmistakable symptoms of abscess appeared. This was found in the third frontal convolution by Dr. Dench at the operation, and was evacuated.

The question arose, in connection with the case, whether a corresponding leucocytosis could be due to a process of softening in the brain caused by a thrombosis. I have looked into this matter and have found that softening of the brain secondary to thrombosis, or to embolism, does not often, if ever, cause a leucocytosis, and does not raise the ratio of polynuclear leucocytes. A cerebral hemorrhage causes an immediate high grade of leucocytosis, but not a gradual rise. In this case, therefore, the blood examination proved to be a reliable indication of the development of a brain abscess, as distinguished from a clot or an area of softening.

It is of course impossible to draw wide conclusions from a single case, but I have found a number of confirmatory facts recorded in recent literature, and I think we may be warranted in stating that the examination of the blood may afford important data, first in determining that a cerebral complication is present, and, secondly, as to its exact nature. I can add nothing to the facts already in our possession in regard to the diagnosis of thrombosis of the lateral sinus as a complication of otitis media. But those facts are so clear that this complication seems most easy to detect from the typical variability of the temperature curves, the congestion of the jugular vein, and the enormous leucocytosis usually present.

III. The question of operative interference in cases where a cerebral abscess is positively diagnosticated is one that admits of but one answer. It is imperative to open the skull as soon as the diagnosis is made.

If the case proves to be one of brain abscess, it may be possible to find and to evacuate it, and thus to save the patient.

If the case proves to be one of meningitis, the

fatal termination is not hastened by the procedure.

But while I regard such operations as definitely indicated, I cannot but feel, after a considerable experience, that they are operations requiring special skill, and that they are not to be undertaken lightly.

Just as the general practitioner or the consultant in internal diseases is able to make a diagnosis of appendicitis, but is careful to call in a surgeon to operate, so I believe that both the neurologist and the otologist, while capable of making a diagnosis of brain abscess, should call in a general surgeon, or, if possible, a surgeon skilled in cerebral surgery, to operate. We admit the skill of some men in abdominal surgery, or in gynecological surgery, and many a competent and able practitioner, whether general or special, has no hesitation in referring his cases to them. Brain surgery is a department in which special skill and wide experience is essential to success, and this fact should be recognized and admitted, perhaps, more fully than it has been. It may seem a small difference to go on from the mastoid operation to cerebral surgery. It is, in fact, a very different matter. It requires different methods. It involves the use of different tools, and it puts one face to face with many complications often not appreciated until they arise, and which are sometimes impossible, with the knowledge and experience lacking, to meet. It is a notorious fact that men working along one line are often ignorant of what is being done along other lines. It is my fortune to be familiar with many methods of surgical treatment of brain disease, as a spectator at many operations. Permit me, then, to indicate what seems to me the proper method of operation in a brain abscess.

A brain abscess is always of very uncertain extent. It is therefore necessary to have a large field of operation. The head should be prepared twenty-four hours before the operation is done. It should be shaved all over, cleaned carefully by many scrubbings with soap, with alcohol, and with ether, and again with a corrosive sublimate solution. And a cap of sublimate gauze should be left on all night before the operation, and then at the time of operation the scrubbings should be repeated. Brain surgeons no longer use the trephine or the chisel in opening the skull. In hospitals an electric engine is used, first to bore five or six small holes in the skull, and second, to join these holes by a rotary saw. In this way a large opening four by three inches in size, preferably of omega shape, is made, and a flap of scalp and skull laid down. Or if an electric saw is not available, small trephine openings can be made and joined by the small Gigli saw or by a gouge. Thus a large field is open and ample room secured before the dura is touched. All hemorrhage from the scalp and from any arteries of the diploe is to be stopped before the dura is opened. The arteries of the diploe may be plugged with wooden points or with Horsley's wax. The flap is to be protected during the operation by being wrapped in soft sublimate gauze wet repeatedly with hot water at a temperature of 110°.

The dura is to be opened with great care. A semilunar incision is the best, following the line of the opening in the skull. A fine hook inserted lifts the dura away from the brain, a fine scalpel cuts a hole not more than a millimeter in length, and a blunt-pointed scissors is inserted in this hole and used to divide the dura. The dura is to be lifted away from the brain as the division is made, to prevent injury to the pial vessels.

When the cortex is exposed, several conditions may be found. There may be an abscess in sight which can be evacuated by an incision and drained. Aid the draining by turning the patient over so that the opening in the abscess shall be down, and gravitation will aid in emptying it. I have often seen this neglected, and in consequence the abscess was not really drained till the dressings were applied, the patient was in bed and lay on the side.

There may be no abscess in sight. Many abscesses lie a centimeter or more beneath the surface. They may be felt, the brain being softer at one point. They may be indicated by the greater venous congestion at one point in the pia. If not, it is justifiable to make a deep incision in the brain. Always incise along the summit of a convolution in its long diameter and separate the incised surfaces by two broad, flat spatulæ, which thus enable one to get access to the deeper part. Never thrust a finger into the brain. If a deep abscess is found, it is to be emptied by gravitation, the opening being kept open at the operation either by the spatulæ, or by the ear speculum divided and separated. The subsequent drain should be decalcined bone or rubber tissue folded, as horsehair is inadequate. If the pus found is thick, a gauze drain may act as a plug instead of a drain.

If a diffuse encephalitis is found, and not an abscess, it may be left alone, or it may be well to cut the congested and degenerated area out, leaving a cavity. The excision should extend to the limit of the degenerated area, and the walls left are to be normal brain. This involves hemorrhage, which may be stopped by gauze tampons held for some minutes in the cavity, to allow firm clots to form in the vessels. It may be necessary to leave such a tampon in for twenty-four hours. Sterile tampons are far better than iodoform gauze, which should never be used about the brain. I have seen serious symptoms of iodoform poisoning from the use of iodoform about the brain. It is quickly absorbed by the cerebrospinal fluid and thus invades the body.

During the entire operation very hot water should be run constantly over the surface of the brain. Horsley operates now almost in a pool of hot water, the temperature of the brain being kept at 103° all the time.

If a meningitis is found, and no abscess, a drain may be inserted.

When the operation on the brain and the insertion of a drain has been accomplished, the dura may be united, excepting at the posterior inferior angle or corner of the opening, where the drain is to be brought out. Here, too, an opening is to be made in the skull—one of the original trephine holes being utilized for this purpose. It may be well to enlarge the opening in the skull by the rongeur, where the drain comes out, so that no pressure shall be made on the drain. The scalp may be sewed up except about the drain, and the patient should be made to lie on the side of the abscess to encourage drainage. A very large absorbent cotton dressing held by gauze should be applied over the entire head, as it is important to exclude air from the wound. The dressings should be changed daily and the drain gradually allowed to be pushed out, but never removed.

I mention these points because I have seen abscesses found and imperfectly evacuated through too small openings, and subsequent fatal meningitis develop because the abscess drained into the meninges, and not outward.

IV. The results of surgical treatment of the intracranial complications of otitis media have been more and more favorable as the operative technique has improved.

Some of the statistics obtainable are as follows:

Kocher, in 1895, collected 92 abscesses operated upon, with 51 recoveries.

Oppenheim, in 1897, collected 196 cases of otitic abscess, with 96 recoveries.

Röpke, in 1898, collected 142 cases of abscess after otitis, with 59 recoveries.

I have been over the literature from 1900 to 1906, and have been able to collect 54 temporal, 25 cerebellar, and 2 occipital abscesses, in all 81 abscesses of the brain, secondary to otitis, in which an operation had been performed. In 6 of these nothing was found at the operation, but the abscess was discovered at the autopsy. In 42 cases recovery followed the operation. In 39 cases death occurred.

The cerebellar cases were particularly unfavorable, for of the 25 cases, 16 died.

In studying these cases, several comments have suggested themselves.

In the first place, in almost every instance it is evident that the operation was unduly postponed. In many cases it was not done until five or even eight days after an abscess was suspected. In view of the certainty of a cerebral complication in all of them, it seems from these cases that operation should always be undertaken at the earliest possible moment. Secondly, in the majority of these cases it is evident that the operation was very badly done, incisions being too small or badly located, and drainage being imperfect. In the 39 cases which died, meningitis occurring after the operation was the usual cause of death. Such a meningitis might possibly have been avoided had the drainage been free, the opening in the head large, and asepsis perfect. Thirdly, in the cerebellar cases few characteristic cerebellar symptoms were present, and in 14 of the 25 the cerebellum was investigated after the temporal lobe had been found normal. This coincides with our experience in cerebellar tumors, which often fail to give any characteristic symptoms, and in which the mortality at operation is extremely high. There is, however, a symptom of cerebellar disease which I have not found recorded in cases of cerebellar abscess, but which has been named by Dana[6], who has especially called attention to it—the cerebellar seizure. It consists of sudden unexpected attacks of extreme vertigo, roaring in the head, relaxation of the limbs, and falling to the ground in a semiconscious state; these attacks are sometimes attended by temporary blindness and tonic spasms. They occur especially with tumors lying in the angle between cerebellum, pons, and medulla—a place which is also a frequent site of abscess. It is possible that if attention of otologists is called to this symptom, it will be noticed in other cases. If a diagnosis of cerebellar abscess is made, time should not be wasted in exploring the temporal lobe of the brain.

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A Society for the Suppression of Dust.—A society has recently been organized in Vienna which might with great benefit to the comfort and health of New Yorkers be imitated here. The purpose of the new Austrian body is the abatement of the dust nuisance in streets and public highways. Various proposed schemes for laying dust will be studied, and when thought sufficiently practical will be given actual trials in the streets.

MASTOIDITIS IN INFANTS.*

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While otological literature of the past decade has been made up in great part of the complications of chronic and acute suppurative otitis media and especially of mastoiditis in the adult, yet until a recent period the involvement of this portion of the temporal bone in the infant has received but little attention. Three factors apparently seem to be concerned in leading to the neglect of careful studies in this important class of aural affections, namely, a lack of appreciation of the radical differences in the osseous anatomy of the temporal bone of the infant and the adult; the lack of marked symptoms presented by middle-ear suppuration and mastoiditis in many cases; and finally, the non-recognition of the frequency with which aural suppuration occurs in infants.

While sufficient statistical data has not yet been accumulated to show, with any degree of accuracy, the frequency with which mastoiditis occurs in this class of patients, yet the now admittedly large proportion of cases of suppurative otitis that occur during the course of pulmonary, gastrointestinal and other diseases, points very clearly to a not inconsiderable percentage of cases of mastoiditis in very young children. The studies of Barth in this respect are illustrative, as he has shown that in six hundred hospital children in whom the ears were examined, forty per cent. had aural lesions. Hartman, in the examination post-mortem of the temporal bones of 108 atrophic infants dying of gastrointestinal disease, found 85 in which the mastoid antrum was filled with muco pus and bacteria. Preysing finds similarly 81 per cent., and, of 154 cases in but nine had perforation of the drum membrane taken place. A most important factor in this connection is that in infants, many cases of pus in the middle ear run along for a considerable period without any symptoms that are recognizable except by careful examination of the membrana tympani, yet in such instances the antrum may be full of purulent material, but localizing symptoms may be in abeyance.

Should there be a purulent discharge from the external canal, the presence of aural trouble at once becomes self-evident, but the diagnosis should be made before this time, for as will be seen later, serious bone destruction may be going on and yet the symptoms be so slight, that the attention of the physician is not directed to this portion of the body unless a careful examination of the ears be made in all sick infants, whatever be the nature of the affection present. It is most important, therefore, that under proper illumination the condition of the membrana tympani should be ascertained, and, in the majority of instances where aural suppuration is present, the changes in the drum will indicate the condition of the typanum and in part its adnexa, with the possible exception of a few rare instances where the tympanic membrane retains its normal appearance even with a collection of pus behind it. Where this unusual condition is present other evidence can usually be elicited that will guide one in making a correct diagnosis. It can therefore be readily seen that an examination of the membrana tympani is essential in practically all sick infants, and while the age of the child and its general restless-

*Read before the Metropolitan Medical Society, January 23, 1906.

ness often makes such an examination most difficult, yet with care and patience it presents no greater obstacles than that of the adult and in many instances is even not as difficult, as, owing to the position of the drum head, pathological changes are easily recognized, especially if the canal be straightened by gently pulling the auricle backwards and downwards and employing the largest speculum that will fit it without causing pain.

In order that the diagnosis and treatment of mastoiditis or, rather, antritis in infants may be properly appreciated, it is essential that a clear understanding be had of the differences in the temporal bone of the child and the adult, as the peculiarities of this affection in the infant depend entirely upon these factors. Inasmuch as at birth the osseous external canal has not developed, its place is supplied by the fibrocartilaginous canal. The soft canal is thus attached to the external surface of the annulus tympanicus, at this age forming the tympanic portion of the temporal bone, which later, as the child advances in age, becomes lengthened, while the cartilaginous meatus becomes proportionally smaller. At the inner extremity of the canal, the annulus is still incomplete abovein the portion forming, the Rivinian segment, while the superior and inferior walls of the soft meatus are to a greater or less extent in contact, so that they must be separated in order to obtain a clear view of the membrana tympani. These meatal walls are much thicker in the child than in the adult and thus become a factor of considerable importance when pus accumulates behind them, as under these circumstances the pathway of least resistance for the escape of the purulent material is not the external auditory canal as would ordinarily be expected.

As regards the tympanum proper, the vault is nearly as large as that of the adult: the tegmen is often incomplete, so that vascular channels are brought into direct communication between it and the cranial contents, this being further enhanced by the sutures still being incompletely united and thus explaining in great part, the prominence of cerebral irritation so common in children of an early age. The mucosa of the middle ear still shows its embryonal state and contains a large number of vessels, which allow of rapid tumefaction and predisposes it to inflammatory changes. The Eustachian opening into the anterior wall of the tympanum is much shorter than in the adult; it is also wider and the tympanic orifice is comparatively larger, while it is situated at a lower level so that drainage is facilitated from the tympanum in this direction. Also an important relationship to the tympanum is the petrosquamous suture which is found on its superior wall, and this dehiscence allows a free communication between the dura and the tympanic cavity. This suture in its continuation forming the squama mastoid fissure, also plays an important part in the exit of pus from the tympanum, as through it the purulent material may pass outward and appear beneath the skin behind the auricle. These sutures remain more or less patulous until the end of the first or second year The aditus ad antrum in the infant varies in form and position with the location of the antrum, and unlike that of the adult, is in the middle of the posterior tympanic wall, so that from the side of the antrum it forms a canal inwards and forwards, while a straight probe passed through it in this direction goes through the tympanum and enters the mouth of the Eustachian tube.

Concerning the mastoid process or that portion of the temporal bone which corresponds to the mastoid of the adult, in the fetus at term, does not exist, while in the child from three to five years it becomes perfectly sketched out, but it is only when the age of thirteen years is reached that it is modeled in miniature to that of the adult. In the newborn child, therefore, the mastoid as such can scarcely be considered, and it is but partially and irregularly developed during the first year by the absorption of cancellous osseous tissue, with the later development of its cellular system, although as the pneumatic spaces develop, from the antrum, it is usual at an early age to find a few cells in close relation with the former space. Irrespective of the age of the child or of the stage of development of the osseous tissue behind the ear, the antrum is always present and is located above and in front of the squamomastoid fissure and below the supramastoid ridge, although both these landmarks may be indistinct. In the newborn, this space is not only relatively but absolutely larger than in the adult, and it lies behind and at a higher level than the tympanic cavity. In its relation to the surgical anatomy of this region, it is surrounded by extremely thin osseous walls, and is rarely more than two to five millimeters from the external surface, so that operation for mastoiditis becomes relatively simpler in the child of this age than in the adult. As the usual landmarks for locating the antrum are generally not sufficiently developed to be of value, one must depend upon the characteristic appearance of the thin non-resistant cortex over this cavity. This is the so-called "spongy spot," consisting of vascular foramina perforating the bone from the exterior into the antrum and lying together in a more or less depressed area below the supramastoid ridge and above the external meatus. As a result of the numerous sieve-like perforations at this point, the bone is non-resisting to the curette, so that the antrum is usually entered with but little or no difficulty.

Other anatomically important points are the venous channels in relation to the area involved in the pathological changes, and of these the lateral sinus possibly is less exposed to injury during operative procedures than in the adult, as its position is generally a considerable distance from the antrum, irrespective of how forward its course may be. From the observations made by Cheatle, the petrosquamous sinus is usually well marked in infants, but disappears at a later age. This venous channel opens into the lateral sinus behind, and the middle meningeal vein in front, and it may be the pathway in infancy of an otherwise unexplainable intracranial affection such as a basic meningitis following the mastoid infection. The large size of the sinus in early life accounts for the greater danger of intracranial complications in children than in adults. As the inner table of the cranium in this region is excessively thin and often incomplete along the sutural lines, the danger of intracranial infection does not become eliminated even when the purulent collection bursts through the mastoid cortex, for although the internal pressure is thus apparently relieved, the infection may still spread through the sutures, or even through the thin substance of the squamous portion of the bone.

The marked variances in the course of mastoiditis at this early age present a most puzzling phenomenon, as in some cases extensive osseous destruction may take place without the general health being greatly affected, while in others especially following the acute infections, the symptoms may be so prominent that they are at once recognized, yet the destructive advance of the disease is so rapid,

that but little can be done toward checking it. This aspect being most clearly appreciated by Pomeroy when he states that the policy of waiting for external ear symptoms to arise in infants is entirely unwarrantable, because, as shown by Ponfick's study of one hundred fatal cases, spontaneous rupture had occurred in less than nine per cent., thus showing the great importance of an early recognition of middle ear suppuration and the necessity for prompt treatment before gross mastoid changes occur, as it can be taken for granted that when pus remains in the tympanic cavity for even a short period, the antrum is also involved to a similar degree.

The absence of prominent symptoms when the antrum is filled with pus, is well shown in a case seen recently in a child of nine months in the practice of Dr. Berthold Flesch. For two weeks there had been a mild grade of gastroenteritis which had cleared up, but at the same time the temperature remained from 101 to 102, the child was fretful, was rapidly losing weight, and had almost complete anorexia. As no apparent cause could be found for the illness, it was suspected that the ears might be at fault, and I was then called to see the case. Examination showed decided redness of the manubrial vessels, and the child flinched when firm pressure was made over the antrum on the left side, the opposite ear showing nothing abnormal. A paracentesis of the drum was made and a few drops of pus containing streptococci were evacuated, with a slight improvement in the child's condition for two days. The aural discharge continued, but the general symptoms remained as before. The usual mastoid operation was then performed and the antrum readily opened with a curette. This space was found to be filled with pus, drainage of which was rapidly followed by cessation of the discharge from the tympanic cavity and complete restoration to health within a few weeks.

Undoubtedly many deaths in infants ascribed to other causes result from a purulent inflammation of the mastoid antrum which has been unrecognized. In these cases the child usually has some digestive disturbance, a condition of marasmus follows, and a fatal termination ensues, as the constitutional influence of a purulent otitis is by far greater in the child than in the adult. Such a fatal termination is much more common than is generally supposed, and as in the class of cases to which attention is here directed, that is those in which purulent discharge has not as yet taken place or is very scant, the aural affection is apt to be entirely overlooked unless one bears in mind that one of the most frequent causes of otherwise inexplainable high temperature in infants, is the presence of pus in the tympanum and antrum. Death also occurs from this cause by secondary infection of the meninges, although a fatal issue from extension of the purulent inflammation to the intracranial contents is not as frequent as that by septicemia. Scheib reports an instructive case in this connection, that of an infant eight days old, which died from obscure general symptoms; the autopsy showed the presence of a bilateral suppurative otitis and leptomeningitis.

In general, the pathological changes differ but little from those of the adult, but the tendency toward greater destruction of bone is enhanced and caries is more frequently found. As a result of this destructive tendency in many cases, the deeper structures are damaged before the conditions are recognized. The seventh nerve may be involved with resultant facial paresis or paralysis, or pus may break through the cortex with the formation of subperiostial abscess, and even at this age sequestra of large size may be found with extensive disorganization of the bony walls. On the other hand, instead of the pus escaping externally, it may find the passage of least resistance to be in an internal direction, as in a case observed by the writer in which purulent leptomeningitis followed acute mastoiditis after measles. The autopsy showed pus filling the internal ear, probably finding its way to the meninges *via* the facial canal.

A class of cases is not infrequently encountered in which there is a free flow of pus from the external canal either following a spontaneous rupture of the membrana tympani, or after a paracentesis, but coincident with this, symptoms of mastoiditis develop and operation shows the already beginning or advanced destruction of osseous tissue, the following case being of this nature:

E. W., age eleven months, was first seen three days after the onset of acute otitis following measles. A purulent discharge had appeared from the meatus the previous day and coincident with this the pain had ceased. The membrana tympani showed a small perforation in the posterior inferior quadrant, and as this opening was not sufficient for drainage, it was enlarged with the escape of a large quantity of purulent material. No symptoms of mastoid involvement were present at this time and the general condition of the child was excellent, its temperature being normal. The patient was not seen again for five days, when it was found that the purulent discharge was extremely copious and out of all proportion to that which could be formed in the tympanic cavity alone. The temperature was but slightly above the normal and the general state apparently unaltered. Externally there was no evidence of any mastoidal involvement, palpation over this region being entirely negative. On account of the great augmentation of the discharge, it was apparent that further drainage was indicated, and with this end in view, a postauricular incision was made, exposing the bone in this region. The "spongy spot" was readily located and the osseous cortex was found to be dark blue in color, indicating beginning caries. With a sharp spoon this area was curetted, it being so friable that it crumbled away and immediately below it the antrum was exposed filled with pus. All the carious bone was then removed, the usual dressings applied, and rapid healing followed with complete cessation of the discharge.

Independent of these rapid, acute forms of mastoiditis without grave physical depression another general group may be differentiated, in which the course of the purulent inflammation is subacute, is not usually connected with the exanthemata, and there is to be noted a gradual sagging of the posterior wall of the external auditory canal akin to that of the adult type.

An example of this being seen in the case of L. B., aged fourteen months. Her parents had noticed a scant watery discharge from the right ear for about one month, but paid no attention to it.

During this time she would have attacks of diarrhea, lasting for two or three days and then disappearing, to again return as before. There had been a gradual loss in weight, constant irritability and more or less temperature. The condition of the ear had not attracted special attention other than the knowledge of the slight discharge being present, but finally on this account and the inability of general remedies to effect improvement, the child was first seen that an examination of the ear might be made. The canal contained but a scant amount of greenish mucopus; there was a perfora-

tion in the posterior superior quadrant of the membrana tympani, but only its anterior edge was visible, as the postérior wall of the canal was bulging, and to a great extent obscured the view behind it. There was no swelling behind the ear, but moderate pressure over this region was painful. With these indications present, operation was advised and as in the other cases the antrum was readily opened, found full of pus and granulations, and the bone external and anterior to it considerably necrosed. The necrosed areas were removed, the parts packed and an uneventful recovery rapidly ensued, with an increase in the child's weight to normal, and complete restoration of its health.

The general symptoms of mastoiditis vary in almost every case and are of value only in occasionally directing suspicion to the affected ear. Restlessness is often marked; crying is frequent; the lower jar may present a peculiar tremor when the pain is severe; rubbing of the occiput against the pillow is not infrequent, while the restlessnes is apt to be enhanced at night, especially if the ear has been discharging, then ceases with the extension of the inflammation to the deeper osseous structures. The temperature may be 104 or 105 degrees, and is of a vascillating character, especially when a discharge has been present and suddenly diminishes, but in the absence of such a local symptom, a rise in the temperature alone is of little value, but when examination shows during the course of an acute otitis evidences of retention, the presence of temperature is a valuable sign of mastoid infection. Unexplainable temperatures in infants should always direct attention to the possibility of aural disease. As being indicative of aural trouble, the child often hangs the head toward the affected side, vomiting, convulsions, and even coma may ensue. Deafness is a symptom generally impossible to determine at this early age. The pain is usually paroxysmal in character, growing worse at night, while during the day it is often for periods of time in abeyance. Some glandular swelling beneath the mastoid is ofttimes present, and pain is elicited on pressure over the tragus.

Often the sole evidences of the ear affection must be gained from a careful study of the child for several days, and thus ascertaining the character of the pain, the presence of septic symptoms which develop quite early after the mastoid becomes involved and the changes which occur in the tympanic cavity. Torticollis in infants is very suggestive, as is also loss of weight without apparent cause. The development of mastoiditis is often associated with bronchopneumonia, while, as shown by Hartmann, digestive disturbances associated with pus in the tympanic cavity and mastoid are not at all uncommon. Often the condition is not recognized until edema becomes well defined over the mastoid, as spontaneous perforation may occur with the development of a fistula in cases where the mastoid cortex is very thin, even within a day after the onset of the acute attack. The presence of a fluctuating mass, however, does not necessarily imply a cortical perforation, as the pus may burrow through the Rivinian segment and find its exit by way of the superior wall, dissecting the soft parts away from the bone.

The presence of a purulent collection behind the auricle, is much more frequent in infants than in adults on account of the aural conditions not being as promptly recognized in the former. The presence of pus beneath the periosteum adds greatly to the danger of infection of the cranial contents either by way of the mastoid-squamous fissure, or by localized caries of the squamosa occurring with interference with the vascular channels and direcr infection. In cases where the pus collection undet the skin is extensive, pressure over this region or over the tissues of the neck beneath the auricle will often cause a flow of pus from the external auditory canal.

Pseudomeningeal symptoms or meningismus is frequently seen associated with mastoiditis in infants, and it adds a conflicting factor to the recognition of the aural trouble, as it is so frequently present in the acute infections of early life and especially in gastrointestinal disturbances. In some cases the meningeal symptoms may dominate the clinical field and thus no suspicion of mastoid inflammation will be entertained until irreparable injury has been done to the hearing, or even the life of the patient sacrificed. In practically all these cases the meningeal symptoms promptly disappear as soon as the pus has been evacuated from the mastoid antrum and middle ear.

Notwithstanding the great destruction of the soft and osseous tissues which takes place and the frequent presence of signs of meningeal irritation, true intracranial complications are uncommon, even in spite of the close relationship which exists between the tympanum and antrum with the interior of the cranium by means of the numerous vascular channels. The meningeal irritation, however, undoubtedly results in great part from this close anastomotic relationship, but it must also be remembered that in many cases of intestinal involvement, the cerebral irritation present is the result of a coincident aural suppuration and not dependent upon the gastroenteritis. In a few instances, the mastoiditis may be masked by the symptoms of some other affection to which the ear disorder is but secondary, or the aural suppuration may exist coincident with another affection, yet there may be a definite causal relation between the two conditions, as in a case of scarlet fever, seen in the practice of Dr. A. J. Wittson, where there was a complicating purulent process involving the kidney and mastoid, the two manifestations being but the local expressions of the same general process.

In conclusion I would but call attention to the absolute necessity of a careful examination under proper illumination of the membrana tympani of all ill infants independent of whatever be the nature of the affection present.

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LITERARY GEMS FROM THE MEDICAL ESSAYS OF OLIVER WENDELL HOLMES.

By LOUIS E. BLAIR, A.M., M.D.,

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A RECENT editorial in the MEDICAL RECORD discussed the address of Dr. Cullingworth before a branch of the British Medical Association (*British Medical Journal,* November 4, 1905). His paper "reviewed the almost forgotten essay of Holmes on the 'Contagiousness of Puerperal Fever,' in which he revealed, with the clairvoyance of the poet, the true nature of this murderous disease." This paper was read more than sixty-two years ago and was epoch making in medicine. Dr. Holmes has written other medical essays of great force and literary beauty, and it is thought that a brief review of them with a few selections may prove entertaining and instructive to the readers of the MEDICAL RECORD, as

* Read before the Albany County Medical Society, December 15, 1905.

they often have been to the writer. Holmes is and always will be interesting, and in fact no apology need ever be made for introducing anything he has written. His writings will always remain a perpetual source of pure delight.

Holmes was not a great believer in medical therapeutics and polypharmacy. New drugs and new names introduced into the materia medica were always repugnant to his conservative nature, and were as an ice bath to his sensibilities. In fact the names and synthetic preparations of the commercial medical laboratories of to-day would have driven him to sheer distraction. He was a great believer in the laws of hygiene and their application. His last thoughts were for medicine. He says in his essay entitled "Currents and Counter Currents" (1860): "Presumptions are of vast importance in medicine as in law. A man is presumed innocent until he is proved guilty. A medicine—that is, a noxious agent, like a blister, a seton, an emetic, or a cathartic—should always be presumed to be hurtful; it may be sometimes indirectly beneficial. If this presumption were established, and disease always assumed to be the innocent victim of circumstances, and not punishable by medicine, that is noxious agents or poisons, until the contrary was shown, we should not frequently hear the remark commonly attributed to Sir Astley Cooper—more harm than good is done by medication. Throw out opium, which the Creator himself seems to prescribe, for we often see the scarlet poppy growing in the cornfields, as if it were foreseen that wherever there is hunger to be fed there must also be pain to be soothed; throw out a few specifics which our art did not discover, and is hardly needed to apply; throw out wine, which is a food and the vapors which produce the miracle of anesthesia, and I firmly believe that if the whole materia medica *as now used*, could be sunk to the bottom of the sea, it would be all the better for mankind,—and all the worse for the fishes."

He pays his respects to medical schools, teachers, and journals as follows: "Add to this the great number of medical journals, all useful, we hope, most of them necessary, we trust, many of them excellently well conducted, but which must find something to fill their columns, and so print all the new plans of treatment and new remedies they can get hold of, as the newspapers, from a similar necessity, print the shocking catastrophies and terrible murders. Besides all this, here are we, the great body of teachers in the numberless medical schools (year 1860)! Some of us lecturing to crowds who clap and stamp in the cities, some of us wandering over the country like professional fertilizers, to fecundate the minds of less demonstrative audiences at various scientific stations; all of us talking habitually to those supposed to know less than ourselves, and loving to claim as much for our art as we can, not to say for our own schools, and possibly indirectly for our own practical skill. . . . Have we forgotten what is told in one of the books published under our own sanction, that a simple measure of ventilation had saved more than *sixteen thousand children's lives* in a single hospital. How long would it have taken small doses of calomel and rhubarb to have saved as many children? Causes, causes and again causes—more and more we fall back on these as the chief objects of our attention. The shortest system of medical practice that I know of is the oldest, but not the worst. It is older than Hippocrates, older than Chiron the Centaur. Nature taught it to the first mother when she saw her first-born child putting some ugly pebble or lurid berry into its mouth. I know not in what language it was spoken, but I know that in English it would sound thus: "Spit it out!"

Art can do something more than say this. It can sometimes reach the pebble or berry after it has been swallowed. But the great thing is to keep these things out of the children's mouths, and as soon as they are beyond reach, to be reasonable and patient with nature, who means well, but does not like to hurry, and who took nine calendar months, more or less, to every mother's son among us, before she thought he was fit to be shown to the public." . . . He then pleads for the right of speech and tolerance of opinion, as being one of the birthrights of an American. He says: "This Republic is the chosen home of *minorities*, of the less power in the presence of the greater. The history of most countries has been that of majorities—mounted majorities, clad in iron, armed with death, treading down the tenfold more numerous minorities. In old civilizations they root themselves like oaks in the soil; men must either live in their shadow or cut them down. With us the majority is only the flower of the passing noon, and the minority is the bud which may open in the next morning's sun. We must be tolerant, for the thought which stammers on a single tongue to-day may organize itself in the growing consciousness of the time, and come back to us like the multitudinous waves of the ocean on the morrow."

The following sentences are taken from his lecture—Border Lines of Knowledge in Medicine (1861). "The entrance upon a new course of lectures is always a period of interest to instructors and pupils. As the birth of a child to a parent, so is the advent of a new class to a teacher. As the light of the untried world to the infant, so is the dawning of the light resting over the unexplored realms of science to the student. . . . This day belongs, however, not to myself and my recollections, but to all of us who teach, and all of you who listen, whether experts in our specialties or aliens to their mysteries, or timid neophytes just entering the portals of the hall of science. Look in with me, then, while I attempt to throw some rays into its interior, which shall illuminate a few of its pillars and cornices, and show at the same time how many niches and alcoves remain in darkness.

"Science is the topography of ignorance. From a few elevated points we triangulate vast spaces, welcoming infinite unknown details. We cast the lead and draw up a little sand from abysses we may never reach without our dredges. The best part of our knowledge is that which teaches us where knowledge leaves off and ignorance begins. Nothing more truly separates a vulgar from a superior mind than the confusion in the first between the little that it truly knows, on the one hand, and what it half knows and what it thinks it knows on the other."

Of chemistry he says: "It is accomplishing wonders before us every day, such as Arabian story-tellers used to string together in their fables. It spreads the sensitive film on the artificial retina which looks upon us through the optician's lens for a few seconds, and fixes an image that will outlive the original. It questions the light of the sun, and detects the vaporized metals floating around the great luminary—as if the chemist of our remote planet could fill his bell-glasses from its fiery atmosphere. It lends the power which flashes our messages in thrills that leave the lazy chariot of day behind them. It seals up a few dark grains in iron vases and lo! at the touch of a single spark, rises in smoke and flame a mighty Afrit with a voice like thunder and an arm that shatters like an earthquake. The dreams of Oriental fancy have become the sober

facts of our everyday life, and the chemist is the magician to whom we owe them."

From his essay "Some of My Early Teachers" (1882), these sentences are selected: "There are three occasions upon which a human being has a right to consider himself as a center of interest to those about him: When he is christened, when he is married, and when he is buried. Every one is the chief personage, the hero, of his own baptism, his own wedding, and his own funeral." . . . His theme is taken up with the detail of his student days, and so he is the central figure and hero for the hour and feels that he ought to be pardoned for occupying the center of the stage. During his first year as a medical student at Harvard he says: "For during that year I first tasted the intoxicating pleasure of authorship. A college periodical, conducted by friends of mine, still undergraduates, tempted me into print, and there is no form of lead-poisoning which more rapidly and thoroughly pervades the blood and bones and marrow than that which reaches the young author through metal contact with type-metal. *Qui a bu boira*—he who has once been a drinker will drink again, says the French proverb. So the man or woman who has tasted type is sure to return to his old indulgence sooner or later. In that fatal year I had my first attack of author's lead-poisoning, and I have never got quite rid of it from that day to this."

When Holmes was a student the great medical Mecca was Paris, and everybody with a desire to finish up and polish off hastened to the gay French Capital. He describes some of his teachers as follows: "Dupuytren, a square and solid man with a high and full-domed head, oracular in utterances, indifferent to those around him. I do not think Dupuytren has left a record which explains his influence, but in point of fact he dominated those around him in a remarkable manner. You must have all witnessed something of the same kind. The personal presence of some men carries command with it, and their accents silence the crowd about them, when the same words from other lips might fall comparatively unheeded. As for Lisfranc, I can say little more of him than that he was a great drawer of blood and hewer of members. I remember his ordering a wholesale bleeding of his patients, right and left, whatever might be the matter with them, one morning when a phlebotomizing fit was on him. I recollect his regretting the splendid guardsmen of the old Empire—for what? because they had such magnificent thighs to amputate!

Of Velpeau he said: "He had not what is called genius, he was far from prepossessing in aspect, looking as if he might have wielded the sledge-hammer rather than the lancet, but he had industry, determination, intelligence, character, and he made his way to distinction. A good sound head over a pair of wooden shoes is a great deal better than a wooden head belonging to an owner who cases his feet in calfskin, but a good brain is not enough without a stout heart to fill the four great conduits which carry at once fuel and fire to that mightiest of engines."

His description of Broussais makes him appear like a character Balzac or Dickens might have created. "He was in those days like an old volcano, which has pretty nearly used up its fire and brimstone but is still boiling and bubbling in its interior, and now and then sends up a spurt of lava and a volley of pebbles. His theories of gastroenteritis, of irritation and inflammation as a cause of disease, ran over the fields of medicine for a time like flame over the grass of the prairies. The way in which that knotty-featured, savage old man would bring out the word irritation—with rattling and rolling reduplication of the resonant letter *r*—might have taught a lesson in articulation to Salvini. But Broussais' theory was languishing and well nigh become obsolete, and this, no doubt, added vehemence to his defense of his cherished dogmas.

"Old theories and old men who cling to them must take themselves out of the way as the new generation with its fresh thoughts and altered habits of mind comes forward to take the place of that which is dying out. This was a truth which the fiery old theorist found it very hard to learn, and harder to bear, as it was forced upon him; for the hour of his lecture was succeeded by that of a younger and far more popular professor. As his lecture drew towards its close, the benches, thinly sprinkled with students, began to fill up; the doors creaked open and banged back oftener and oftener, until at last the sound grew almost continuous, and the voice of the lecturer became a leonine growl as he strove in vain to be heard above the noise and footsteps."

He speaks of Louis and his work in the autopsy room. He said he was a most skillful diagnostician and a great pathologist, but not a therapeutist, and it was a fad for the students of that day to follow "science" instead of pills and powders, and they learned one thing in the words of Louis, and that was how very large a proportion of diseases got well of themselves without any special medication. He admits that had he followed Trousseau instead he would have had more remedies and "sure cures" at his disposal. Here the seeds of therapeutic nihilism and infidelity were sown—and yet he naïvely adds that "it is not of the slightest interest to the patient to know whether three or three and a quarter cubic inches of his lung are hepatized. His mind is not occupied with thinking of the curious problems which are to be solved by his own autopsy—whether this or that strand of the spinal marrow is the seat of this or that form of degeneration. He wants something to relieve his pain, to mitigate the anguish of dyspnea, to bring back motion and sensibility to the dead limb."

He mentions many other distinguished and well-known names, and has this passing word for one: "I think life has not yet done with the vivacious Ricord, whom I remember calling the Voltaire of pelvic literature—a skeptic as to the morality of the race in general, who would have submitted Diana to treatment with his mineral specifics, and ordered a course of blue pills for the vestal virgins."

His address to the "Young Practitioner" is full of good things and ought to be read in full. It is almost a crime to omit a single sentence, but space forbids. "Your diploma seems very broad to-day, but it begins to shrink from this hour like the *Peau de Chagrin* of Balzac's story. Do not worry about it, for all the while there will be making for you an ampler and fairer parchment, signed by old Father Time himself as President of that great university in which experience is the one perpetual and all-sufficient professor. Your present plethora of acquirements will soon cure itself. Knowledge that is not wanted dies out like the eyes of the fishes of the Mammoth Cave. You are now fresh from the lecture-room and the laboratory. You can pass examinations in all the branches which the men of large practice all around would find a more potent sudorific than any in the Pharmacopeia. The young man knows the rules—but the old man knows the *exceptions!* . . . New ideas build their nests in young men's brains. . . . Revolutions are not made by men in spectacles. . . . I had rather be cared for in a fever by the best taught among you than by the renowned Fernelius or the illustrious

Boerhaave, could they come back to us from that better land where there are no physicians needed, and, if the old adage can be trusted, not many within call. . . . By the oath of Hippocrates, the practitioner of ancient times bound himself to enter his patient's house with the sole purpose of doing him good, and so to conduct himself as to avoid the very appearance of evil. Let the physician of to-day begin by coming up to this standard, and add to it all the more recently discovered virtues and graces."

"There are personal habits of less gravity, but of great value. A man, who may be called at a moment's notice into the fragrant boudoir of suffering loveliness, should not unsweeten the atmosphere with the reminiscences of extinguished meerschaums. He should remember the sick are sensitive and fastidious, that they love the sweet odors and the pure tints of flowers, and if his presence is not like the breath of the rose, if his hands are not like the leaf of the lily, his visit may be unwelcome, and if he looks behind him he may see a window thrown open after he has left the sick chamber. I remember too well the old doctor who sometimes came to help me through those inward griefs to which childhood is liable. . . . Before him came a soul-subduing whiff of ipecacuanha, and after him lingered a shuddering consciousness of rhubarb. He had lived so much among his medicaments that he had at last become a drug himself; and to have him pass through a sick chamber was a stronger dose than a conscientious disciple of Hahnemann would think it safe to administer.

"One practical hint may not be out of place here. It seems to be sometimes forgotten by those who must know the fact, that the tongue is very different, anatomically and physiologically, from the stomach. Its condition does not in the least imply a similar one of the stomach, which is a very different structure. A silversmith will for a dollar make a small *hoe*, of solid silver, which will last for centuries, and will give a patient more comfort, used for the removal of accumulated epithelium and fungus growths which constitute the "fur," than many a prescription with a split-footed ℞ before it, addressed to the parts out of reach. . . . I have seen an old account-book in which the physician charged an extra price for gilding his rich patient's pills. If all medicaments were costly, and the expense of it always came out of the physician's fee, he would naturally think twice before he gave an emetic or cathartic which evacuated his own pocket, and be sparing of the cholagogues that emptied the biliary ducts of his own wallet, unless he was *sure* they were needed.

"Gratitude frequently is one phase of a morbid condition. Many patients are very grateful, and often when we have cured them of their diseases, we likewise have cured them of their gratitude.

"You will remember, of course, always to get the weather-gage of your patient. I mean to place him so that the light falls on his face, and not on yours. It is a kind of ocular duel that is about to take place between you. You are going to look through his features into his pulmonary and hepatic and other internal machinery, and he is going to look into yours quite as sharply to see what you think about his probabilities for time and eternity. No matter how hard he stares at your countenance he should never be able to read his fate in it. It should be cheerful as long as there is hope, and serene in its gravity when nothing is left but resignation. The face of a physician, like that of a diplomatist, should be impenetrable. Nature is a benevolent old hypocrite; she cheats the sick and the dying with illusions better than any anodynes. If there are cogent reasons why a patient should be undeceived, do it deliberately and advisedly, but do not betray your apprehensions through your tell-tale features.

Holmes makes this sly dig at those Uriah Heeps, fakirs and invisible handwashers in the profession: "We had a physician in our city whose smile was commonly reckoned as being worth five thousand dollars a year to him—in the days, too, of moderate incomes. . . . Some shrewd old doctors have a few phrases always on hand for patients that will insist on knowing the pathology of their complaints without the slightest capacity of understanding the scientific explanation. I have known the term 'spinal irritation' serve well on such occasions, but I think that nothing on the whole has covered so much ground, and meant so little and given such profound satisfaction to all parties as the magnificent phrase, 'Congestion of the portal system.' . . .

"The life of a physician becomes ignoble when he suffers himself to feed on petty jealousies and sours his temper in perpetual quarrels. You will be liable to meet an uncomfortable man here and there in the profession—one who is so fond of being in hot water constantly that it is a wonder all the albumen in his body is not coagulated."

Before finishing this article I would like again to refer to the editorial of the Medical Record which was quoted in the beginning, and correct an apparent error and wrong to the memory of Dr. Holmes. The editorial says in reference to his paper on the "Contagiousness of Puerperal Fever": "There was an abundance of material, and in the essay which followed there was an array of facts that should have left no doubts in the mind of the reader, that the disease was communicable. But, like all revolutionary discoveries, it was received with incredulity, etc., the bitterest opponents being Hodge of the University of Pennsylvania, and Meigs of the Jefferson Medical College. Holmes was *no fighter*, and, though he continued to teach medicine for many years, his heart was more inclined to the gentler art of poesy, and he made no strenuous effort to uphold his views, etc." The facts do not show that he tamely submitted. He *was* a fighter. His written word says so. The issue was joined in the affirmative statement by Holmes: "The disease known as puerperal fever is so far contagious as to be frequently carried from patient to patient by physicians and nurses" (1843); and opposed by Professor Hodge (1852), who said: "The result of the whole discussion will, I trust, serve . . . to divest your minds of the overpowering dread . . . that you can *ever* convey, in any possible manner, a horrible virus, so destructive in its effects, and so mysterious in its operations as that attributed to puerperal fever;" also further fortified by the negative views of Meigs (1852): "I prefer to attribute them to accident, or Providence, of which I can form a conception, rather than to a contagion, of which I cannot form any clear idea."

In his essay of 1843 he assails the objections of his opponents with all the intensity and earnestness possible, and when he had finished it he was afraid that he had been too severe. "I have no wish to express any harsh feeling with regard to the painful subject which has come before us." He rewrote his theses and added more uncontrovertible facts in 1855, and in his well-known address, "Currents and Counter Currents," delivered in 1860, he said: "The causes of disease have been less earnestly studied in the eagerness of the search for remedies. Speak softly! Women have been borne out from an old-world hospital, two in one coffin, that the horrors of their prison house might not be known, while the very men who were discussing the treatment of the

disease were stupidly conveying the infection from bed to bed, as rat-killers carry their poisons from one household to another. Do not some of you remember that *I have had to fight this private-pestilence question against a skepticism* which sneered in the face of a mass of evidence such as the calm statisticians of the insurance office could not listen to without horror and indignation?" (Italics are mine.)

This does not sound like one indifferent; it is not feeble language. It is framed in the strongest words he could match up, and he fought the resourceless opposition with all his might and strength. When Meigs said, "I prefer to attribute them to accident, or Providence," he talked more like a theologian, who has always been willing to dump all his doubts and unsolved problems of life in the front yard of Providence. The rubbish which has been piled up there by men of that type has been enormous, and I am afraid that it is diminishing but too slowly, yet science and honest thinkers have done a whole lot to keep that pile down.

Holmes died in 1894, but long before he left his active work he had the supreme satisfaction of seeing his views as a young man at thirty-four made good in all the clinics and lying-in hospitals in Europe. As early as 1882 Scanzoni and Bumm at Wurzburg, Credé at Dresden, Breisky at Prague, among many others, were already sending out glowing reports of the marvelous life-saving practice of antiseptic midwifery.

294 State Street.

THE SERUM TREATMENT OF HAY FEVER.

By CHAS. H. KNIGHT, M.D.,

NEW YORK.

Serum therapy is an attractive subject of study. A therapeutic resource based on scientific principles and promising definite results is certainly most alluring. At first glance its use in hay fever would seem illogical, since in this disease we are dealing with a neurotic disorder, complicated, possibly, by an intranasal anomaly, and apparently excited by some irritant conveyed by the inspired air. How is it possible for such an affection to be influenced by merely local treatment? The question seems to have been answered by Professor Dunbar of Hamburg, who has succeeded in extracting from certain grasses and cereals a toxin entirely free from mechanically irritating qualities, but capable of exciting the characteristic phenomena of hay fever in those susceptible. Thus the old "pollen theory" of etiology, in accordance with which the pollen granules themselves were supposed to induce the local derangement, is supplanted by the view that the source of irritation exists in a toxalbumin residing in the pollen. According to Liefmann, about 700 pollen grains are, on certain days, inhaled with each cubic meter of air. The significance of this fact is apparent when taken in connection with the statement that two or three pollen grains contain enough toxin to cause an attack of hay fever. In an interesting essay, entitled "Hay Fever: Recent Investigation on Its Cause, Prevention, and Treatment," R. A. Glegg of Edinburgh quotes Kammann of the Hygienic Institute at Hamburg to the effect that the potency of the toxic proteid obtained from the pollen is such that one forty-thousandth of a milligramme will cause itching and redness of the conjunctiva in a hay-fever subject, lasting several hours. Thus the evidence that pollen or its toxin is at least one of the causes of hay fever seems to be incontestible. By a series of animal inoculations Dunbar has also produced an antitoxin which allays the disturbance created by the toxin, and which is claimed to dispel or modify the symptoms of hay fever. The process of deriving an antitoxin from a toxin by combining a vegetable extract with an animal product is without precedent, and, in the minds of some, envelops the whole proposition in a cloud of suspicion. The immunity conferred by the antitoxin is not permanent, but lasts from six to twenty-four hours, when the application must be renewed. Observations made up to the present time indicate that a given toxin may be poisonous to one individual, but not to another, and that a given antitoxin may exert control over various toxins. Some discredit is thrown on the latter assumption by the disappointment met with by A. W. MacCoy in his use of the 1904 serum, after a series of brilliant successes in the season of 1903. He explains his failures by the fact of having used a serum of excessive strength and derived from a source not suited to victims of the disease in this country. It seems to be conceded that the antitoxin proper for use in our autumnal hay fever must be obtained from the golden rod and rag weed. MacCoy's confidence in the remedy is so firm as to lead him to the conclusion that, "with sera of fixed units of strength adapted to the varying conditions of the inhabitants of the American continent, the immunization and cure of all cases of hay fever is, practically, an accomplished fact." His most decided results were seen in the autumnal form of hay fever, while Emil Mayer declares the serum efficacious in the vernal, but not in the autumnal variety. On the other hand the results obtained by Mackenzie, at Johns Hopkins, were absolutely negative, and he is therefore incredulous as to the efficacy of the serum. He still maintains the opinion expressed at the last meeting of the American Laryngological Association and published in the volume of Transactions for 1905. He calls attention to the curious fact that the rose with an unrivaled reputation as a disturber of the Schneiderian membrane, has thus far not been persuaded to yield a toxin. In striking contrast with the foregoing is a statement made by H. W. Loeb in a recent paper to the effect that the best results with the serum have been obtained in so-called "rose fever," or "German hay fever." The observations of the latter authority seem to have been made with exceptional care and thoroughness. He found that most annoying symptom, itching of the eyes, as well as that of the nose and palate, almost invariably relieved. The rhinorrhea, nasal stenosis, and sneezing were uniformly overcome, while in every case of asthma the symptoms were much benefited. It surely would be unreasonable to ask more than this, and we may readily appreciate the enthusiasm of this writer.

Serum for hypodermic injection and in fluid form has been almost entirely abandoned. The latter is unstable and the former is apt to be followed by excessive local reaction. In powder, which seems to have been generally adopted, no disturbance follows nasal insufflation beyond, in some cases, temporary aggravation of the local irritability. This is seen to subside after persistence with treatment. It sometimes happens that the onset of the attack is so abrupt and the nasal stenosis so extreme that it is difficult to introduce the powder. In such case it has been proposed to retract the swollen tissues with cocaine or adrenalin. This practice is not to be recommended. If Dunbar's antitoxin has the virtues attributed to it it should be able to stand alone. The use of adjuvants confuses therapeutic effects and may deprive the serum of some of the credit to which it is entitled.

The following figures are compiled from the reports of 81 physicians in various parts of the country.

The total number of cases was 219. Of these there were

Effectively benefited	114, or 52	per cent.
Partially "	66, or 30	"
Not "	39, or 18	"

Of the total number of cases 68 had asthma, and of these there were

Effectively benefited	30, or 44	per cent.
Partially "	26, or 36	"
Not "	13, or 20	"

These statistics correspond closely with those of Luebbert and Prausnitz, and others.

In a personal letter just received from Professor Dunbar there are several points reference to which may be of interest. For his kindness in placing it at my disposal, as well as for a collection of literature bearing on the subject, I wish to express my obligation. He mentions three possible causes of failure with the serum:

1. "The patient does not react to pollen toxin, and is therefore also indifferent to the antitoxin." In other words, if the antitoxin is ineffective the case is not an example of genuine hay fever. This may seem like "begging the question." At the same time we all use tentative treatment in other cases of doubtful diagnosis; then why not pollantin in hay fever? The toxin itself is said to be a reliable diagnostic test. Its effects are so promptly counteracted by the antitoxin that it may be used for this purpose with confidence and safety. It should be freshly prepared and highly diluted—1 to 50,000—to be gradually increased in strength if no results follow.

2. "Some patients are irritated by normal blood serum, and therefore also by pollantin," since the irritating substance and the antitoxin exist together in the globulin and cannot be separated. In spite of the unpleasant effects—sneezing, etc.—the use of the remedy should be continued. It is found to be an advantage to apply it in extremely small quantity and diluted with sugar of milk (1:4). From personal experience Dunbar asserts that this comparatively transient irritation is much more endurable than a continuous attack of hay fever. Experiments now in progress give hope of obtaining a preparation free from these objections.

3. "Many patients use far too much of the pollantin." The contents of a vial should last eight to fourteen days. (In his own case half a tube carries him through the season.) It is difficult to restrain the extravagance of those who think that if a little does good, a great deal must do more good. Yet this suggestion as to dose is believed to be of the utmost importance. In the words of Dunbar, "Use pollantin in minute quantities and start the treatment before the attack begins."

In observing a disease so baffling and protean as hay fever we encounter many confusing factors. The psychic element in many cases should not be overlooked, since otherwise we may be led to most erroneous conclusions as to the effect of remedies. We are all familiar with the artificial rose experiment related by Mackenzie of Baltimore. Another case in illustration has recently been reported by Guest of Louisville, in the person of a relative, who, having tried every known remedy for his hay fever without avail, in despair resorted to Christian Science. At about the time his letter of application for "absent treatment" should have reached its destination his symptoms began to abate, and the next day had practically disappeared. While he was comparing the present result with those under the ministrations of orthodox medicine, to the keen disparagement of the latter, he received a message from the priestess of the faith, announcing that she was away when his letter arrived, but would begin treatment at once. His idol having been shattered, all the hay fever symptoms recurred with original intensity. Doubtless similar examples could be supplied indefinitely. Suggestion, hypnotism, and faith-healing may, perhaps, find in hay fever a profitable field for their exploits.

There is danger that the simplicity of its administration may lead to general use of the remedy without competent advice and to consequent neglect of serious nasal abnormalities. A momentous incidental consideration is that the surgeon is thereby robbed of his fee. The etiological importance of these nasal conditions has been greatly exaggerated, and the original views and practice of the propounders of the "nasal origin" of hay fever have been subjected to radical modification. No doubt the suffering of the patient may be much mitigated by judicious nasal treatment, but in many cases the actual cure of the disease is as remote as ever.

From a study of reports on this subject hitherto made, a final decision as to the value of the treatment does not as yet seem warranted. The discrepancies and sources of error are so manifold that it is by no means easy to solve the problem. One observer carefully follows directions as to hygiene and régime, while another disregards them entirely. One employs various agents in conjunction with the serum, while another discards all other medication; one records a dismal list of failures, while another claims success in more than half his cases. Lack of uniformity in the preparation and use of the remedy, as well as in the general management of the patient, may, perhaps, explain in part the prevailing diversity of opinion. It seems fair to require an observance of the ordinary laws of health, even if we do not go so far as to adopt the special precautions, such as excluding the night air during sleep, etc., insisted upon by Dunbar. As intimated by Ingals, many of our patients would do well without medicine if they were to follow the stringent hygienic measures enjoined. The strength of the serum and the sources whence it is obtained, no less than care and moderation in its administration, are important points. From the mass of experience and literature being accumulated, we may expect soon to arrive at a just estimate of this new claimant for favor. In the meantime experiments with the serum may be continued with the assurance that at least it does no harm, even though it gives results no better than those acquired by other methods.

147 West Fifty-seventh Street.

HUMAN BLOOD PRESSURE AND PULSE S AFFECTED BY ALTITUDE.*

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The pressure of the blood in the arteries of man has been made the subject of much speculation and study from early times; the force of our arterial blood current against our vessels both in health and disease offers an interesting and important symptom, and one that has been observed by the method of noting the pulse at the wrist for centuries. It is, however, only in recent years that careful and systemic study of the force of the blood in its circulation through the body has been undertaken. The finger on the radial artery at the wrist, while valuable, and in the hands of experienced men of much practical utility in determining diseased conditions or changes in blood pressure, is after a a crude

*Read before the American Climatological Association, 1005.

and uncertain method, depending entirely upon the tactile sense of the observer, and while the number of beats per minute can be counted, and the volume of blood and the condition of the artery noted, it is a method only approximately exact; too much depends upon the factor of personal equation in the observer. Considerable advance was made when instruments were devised by which a needle was made to move by the impulse at each pulse beat of the artery, and a graphic record traced on a moving slip of paper. This method was also found to have its limitations, and in recording pressure of blood not always exact. A decided advance has been made in the last few years in using several forms of apparatus depending upon the principle of mechanical constriction of limb or finger, and using the pressure of the blood constricted in this manner to elevate some form of index as a slender column of mercury in a graduated tube, or by a needle on a dial. In this manner the pressure can be taken in man without the errors of the older methods, and a standard established for a large number of human beings under different conditions. With the use of these more recent instruments of precision it has been made possible for us to measure the force of the blood stream in certain diseases, and in health. Many peculiar effects are noted from the use of drugs, exercise, and mental disturbances on the delicate mechanism of the circulation.

It was therefore to take advantage of this comparatively new means of measuring the force of blood in the arteries that some three years ago we decided to test the effect of the altitude in Colorado on the blood pressure in human beings. Some work had been done on this subject in Europe, but the reports differed in several essential points. In Mexico two observers also have made a report, but with instruments of older date only. As to the general impressions on this subject, it has been observed that as at a considerable height above the sea some individuals suffer from a feeling of fullness in the head, with hemorrhages from the nose, etc., the blood pressure at these elevations must be increased, and the serous symptoms occurring at altitude, such as rapid pulse, breathlessness, dizziness, and even fainting in otherwise healthy people, have very clearly shown a pronounced effect from altitude upon the circulatory apparatus in human beings. What effect this had on the actual tension of the blood was more or less a disputed point. This is, however, a point of some importance—to definitely determine the effect of altitude upon the heart and blood vessels, and it has seemed to us well worth the effort. There are in the United States at present a number of cities at a considerable elevation. We have a large and rapidly-growing population in our Western States on both sides of the Rocky Mountain ranges that live under an air pressure on their bodies of 20 per cent. less than that air pressure would be at the sea level, or about twenty-four inches of mercury barometer pressure as compared to thirty at sea level. Such a difference represents about three pounds to each square inch of the human body. It is true that in most cases the effect of this difference in surface pressure is met promptly and effectively by the wonderful adaptation of our nervous and circulatory mechanism, so that the physiological disturbance is slight or absent. It is well known that there are cases that do not adapt themselves so rapidly, and some that never do, while in certain diseases affecting the heart, this diminished pressure is apt to prove a dangerous factor.

Exactly how such effects are produced from the altitude of our elevated regions has not been satisfactorily explained. Any light on this obscure subject cannot fail to be of value, as it would tend in time to place the study of altitude effects upon a definite scientific foundation, and, what is of more importance, enable the physician to deal with such effects during disease, in an intelligent manner.

It was therefore with this aim in view that we began a series of investigations in blood pressure in Colorado. We only selected healthy individuals to experiment with, as it was first necessary to establish a normal mean pressure for altitude, as has been done at sea level, and not pressure subject to the irregularities or fluctuations produced by diseased conditions, however slight. We were fortunate in having unusual opportunities for this series of investigations. We were in a city of 30,000 inhabitants, at an elevation of 6,000 feet above the sea. A well equipped scientific laboratory in the new science building of Colorado College was, by the kindness of President Slocum, placed at our disposal, while the Professor of Physics, John Cutler Shedd, Ph.D., and of Biology, Professor Edward C. Schneider, Ph.D., gave us every aid in their power. Among the college students we could choose any number for experiment, and they kindly offered their services at any time. Five miles away by electric cars the Pike's Peak Railroad took us easily and without exercise to the summit of Pike's Peak, 14,000 feet altitude, while on the summit a stone building offered us all the advantages as a shelter from cold or wind, so necessary in conducting delicate scientific experiments. The technique was as follows:

The instruments used were two Riva-Rocci, with 5 c.c. cuffs, a new Janeway with a 12 c.c cuff, and an instrument modified from the Janeway with a 12 c.c. cuff. The individual examined was at rest in a sitting position, cuff on left arm, all muscles relaxed, and all disturbing factors eliminated. Measurements were made several times in each case and by four observers and with three instruments to obviate personal differences in technique. The average in these measurements was then taken as the result for that case, also each case was measured on several occasions, during several days. The time of day was noted to obviate diurnal variations. By this care we feel reasonably sure of our normal mean pressure in each case.

The pulse rate was taken with the same detail. We divided the work into groups.

Group No. I.—Average pulse and blood pressure in men and women of all ages, resident at 6,000 feet altitude for over one year.

In averaging a large number of individuals we came to the conclusion that as a rule blood pressure was slightly lower than that given as the normal at sea level, while the pulse rate did not show the increased rapidity said to be present in altitude dwellers.

Group No. II.—Average pulse and blood pressure in men who had lived at 6,000 feet altitude for over twenty-five years.

Fifty males were now measured who had lived at least twenty-five years at 6,000 feet altitude, and a number thirty, in two cases forty-four years. We found in these cases that considering age the blood pressure was certainly lower than that given for sea level [2] while the pulse was normal. Evi-

dently, prolonged residence at 6,000 feet altitude had not increased the blood pressure in these individuals; but caution should be used in taking too much as proved from our work in this group of experiments. These individuals possibly represent a survival not only from death of a certain number during the twenty-five or more years, but from the fact that at this altitude any disease of heart or arteries is very likely to cause the patient at once to seek a different and generally less elevated climate, leaving survivors who represent a special class, and our observations were on this special class.

Group No. III.—Effect of muscular exertion upon college men.

First determining the normal blood pressure, we then had our men exercise violently at football, running, etc., etc. The result differed very little from similar experiments conducted near sea level. Pressure was as is usual increased by muscular work at first and at last returned to normal.

Group No. IV.—Effect upon blood pressure and pulse upon twenty-two men and women taken from 6,000 to 14,000 feet.

The individuals comprising this group were tested a number of times and their average pulse and blood pressure estimated at 6,000 feet. They were then taken up to 14,000 feet on the Pike's Peak Railroad in a private car without any muscular exertion, were measured while in the car on the summit, and again after three and one-half hours at 14,000 feet. Some returned sooner to 6,000 feet, and all were again tested on their return to 6,000 feet to note any possible effects of the change in altitude. While work on this group was interesting and showed some peculiar phases of blood and blood pressure due to changes in altitude, we did not feel that our results were accurate, or our averages as scientific as we had determined to have them. The personal element as a factor entered too largely into the calculations, while the marked differences in age, occupation and mental disturbances were not in our opinion sufficiently guarded against. We therefore for another year perfected ourselves in technique and tested a large number of people under different conditions, and in June, 1904, we felt we could venture on some reliable work.

Group No. V.—Effect upon pulse and blood pressure in twenty two college men taken from 6,000 to 14,000 feet, and the effect of three and one-half hours at 14,000 feet.

We selected twenty-two students from Colorado College of nearly the same age and occupation, and for some weeks in the Science Laboratory estimated their individual and average pulse and blood pressure. Our normal pressure obtained in this way we compared with the work of O. Z Stephens, M.D., of Chicago, Ill., on twenty-two college men. We found that our group at 6,000 feet altitude had a lower blood pressure and a slower pulse rate, blood pressure average being 126 mm. at 6,000 feet, 130 mm. at sea level; pulse at 6,000 feet, 80, at sea level, 82. The men were now taken by special engine and private car to the summit of Pike's Peak, and on arrival were taken to a room in the hotel; all excitement and exertion were thus avoided. They were then tested, using same technique as employed in the laboratory at 6,000 feet. Results showed an average pulse of 86 and blood pressure of 121, a gain in pulse rate of 15 and a reduction of blood pressure of 5 mm.

After three and one-half hours at 14,000 feet, the men were again examined. The pulse rate had now gone up to 99 per minute, and the blood pressure fallen to 118 mm. Some exercise, such as walking, had, however, been taken by all the individuals of this group during the three and one-half hours at 14,000 feet altitude, and should be remembered in estimating results in this series. No doubt an equilibrium is established in time, and the pulse rate and blood pressure return more nearly to a normal standard. How long this takes probably varies in different individuals. From examination of some employees at the summit who had lived at 14,000 feet altitude for two months, we judge this equilibrium does not take more than a few days, but that the tension after compensation has taken place is always lower than the tension of that individual would be at sea level or at a lower altitude, in almost all cases.

The men were examined during several days after their return from this trip and nothing unusual was noted.

The full significance of this fall in blood pressure due to altitude, in young healthy adults, we cannot at present estimate. It is a complex subject and requires more detailed study from many points of observation. It is, however, interesting to note the difference between the position of the body as affecting blood pressure, and the effect of altitude. If the body is placed in the prone position, the heart beats more slowly, while the blood pressure is increased. In ascending to a high altitude, the heart beats faster and the blood pressure is lowered.

We found a rough ratio between pulse rate and blood pressure: the more rapid the pulse, the lower the blood pressure. It was also noted that when a pulse rate was but little affected by an altitude of 14,000 feet, the blood pressure was also more constant; that cases of mountain sickness were accompanied by a fall in blood pressure and a rapid pulse rate.

From this work upon the pulse and blood pressure we feel justified in offering the following suggestions: Although we found the average pressure of the blood was not lowered more than from 8 to 10 mm. of Hg. in a diminished atmospheric pressure of 8,000 feet altitude, and that this change in pressure in the blood is a small one in healthy young adults, it can easily be seen that such a change from the normal, continued for a considerable time, especially in many diseased conditions, would be a positive and possibly a serious interference with the mechanism of the human circulation, an interference that under given conditions might be a strong influence either for good or ill.

In cases in which (due to changes in the heart muscle) the blood tension is abnormally lowered, a further reduction would be dangerous, and in such cases, taking the tension at sea level, one could possibly determine the danger of the effect of altitude in further lowering it; while in other cases, as in some forms of aneuryisms, with high tension, and in some forms of valvular disease of the heart, the effect of altitude would be decidedly beneficial, and such cases have indeed come under the observation of the writers. It must, however, be remembered that the effect of altitude upon the circulation of the blood in human beings is at best a complex subject. We know that in healthy persons the arterial pressure in the main blood vessels is lowered in response to the diminished atmospheric pressure upon the body, as the elevation above the sea is increased, but we know very little as yet as to the effect of diminished atmospheric pressure upon the venous system. It is

highly probable that the right side of the heart and venous system play a more important part in the phenomena of altitude effects than we are at present in a position to verify. The smaller, or capillary blood vessels, on the surface of the body, and on exposed mucous membranes, are enlarged when atmospheric pressure is diminished, and this is seen by examination of the blood, and by bleeding from mucous surfaces. As to a resulting lowering of pressure in the capillaries of internal organs due to the external hyperemia, we as yet know nothing positively, and it is by the further study of the pressure in the venous system that altitude effects upon human circulation will yield the most valuable results in the future.

We want to acknowledge with many thanks the kindness of Professor Slocum for the use of the Science Building of Colorado College, and of Professor Snyder, Dr. Dennis, and Dr. Scully for valuable assistance, and of Mr. Sells of the P. P. R. R. for many courtesies extended, and of all who kindly submitted to being tested.

Since writing the above Dr. H. W. Cook, who modified the Riva-Rocci instrument for this country, has been in Colorado with his own instrument, and verified our findings on blood pressure at this altitude conjointly with us.

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INEBRIETY OFTEN A FORM OF MORAL INSANITY.

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Moral insanity is a disease marked by a low sense of right and wrong, and by conduct which does not recognize the rights of others, or duty and obligation to any one. The ethical sense and consciousness of the relation to others, of truthfulness, of honesty, of respect for the good and true, for law or for the opinions of others, are enfeebled or wanting altogether.

In inebriety these symptoms of moral defect are common, no matter what the conditions and standing of the person may be. It seems to follow the poisoning from alcohol, and in some cases very markedly. Two classes appear prominently, one with heredity and the other apparently acquired. Wherever there is a marked history of heredity, of alcoholic parents, or of neurotic degenerate ancestors, a feeble or deficient consciousness of right and wrong is found. Alcohol used continuously retards growth, diminishes vitality, and prevents development. Drinking parents have deficient vitality and are unable to transmit to the next generation full normal vigor. The last and highest formed element of brain power—consciousness—is the first to suffer from alcohol. Hence drinking parents seldom have children with full normal consciousness, and ethical development. This faculty will be wanting or very feebly developed. This is the rule to which the exceptions are rare. This defect may be associated with much intelligence and intellectual capacity and power to conceal this condition

A man prominent in the political world is in private life devoid of all sense of justice, of right and wrong, and duty to others. He is untruthful and dishonest, and, when his own interests are in conflict, will sacrifice any person or principle to gain his ends. His parents were wine dealers and drinkers, both of them waiting on customers over the bar. Only one child grew to manhood and entered politics as a trade. He is temperate, but a moral paralytic, or a moral maniac with capacity to conceal this condition A man who became one of the great swindlers and forgers of the day, but who was able to keep out of prison by intrigue and cunning, came from drinking parentage. To his associates he is known as without any sense of duty and obligation to any one, and is a literal Bedouin. That these conditions are due to inheritance is apparent from the following: A boy with excessively alcoholic parents was taken in infancy and educated in the most careful way. All the higher faculties were cultivated to an unusual degree, and he entered the church as a brilliant clergyman. He was found to be untruthful in regard to himself, suspicious of others in matters of personal reputation, and grasping even up to the border of theft on many matters. The collections in the church had to be kept out of sight and always suffered if they passed through his hands. He became involved in spreading scandal, and seemed oblivious of the danger of such conduct, and broke up the church by his irregularities. For ten years, until his death, he was in continual trouble with every church he was associated with. Here the evidence was clear that he had inherited defective consciousness, which no training or surroundings could overcome.

In cases where inebriety has been acquired by accident, contagion of surroundings and conditions of living, these moral insanities vary widely and are not so general, but are confined to particular things.

In one instance excessive untruthfulness and dishonesty in all business relations was associated with sympathetic tenderness to associates. In another, intense suspicion and doubt of the honesty of others was associated with excessive desire to be truthful.

Another individual was intriguing, secretive, treacherous, and uncertain in his talk and conduct, and yet lived a moral, upright life. These are examples almost infinite in variety and manifestation, and all show profound changes in the moral faculties. The more common forms are illustrated in this case: A. B., a business man of good reputation and standing in the community, began to drink after a protracted illness from typhoid fever. Two years later he was an inebriate. His mind continued bright and clear, but his character changed. He was deceitful, suspicious, and slanderous. He thought his sons and clerks were robbing him, and that his wife was in league with them. He had his books examined by an expert and was in doubt when they were found correct. He told falsehoods about his business and family, and grew more and more egotistical about his mental capacity to reason and decide on all matters. He was harsh and tyrannical to his wife at times, lost all pride of character in the community and sense of duty to others. He was exacting to have everything done for his own interests, and oblivious

of others and their feelings and tastes. As a patient he was intensely selfish and grasping, even to theft; was fawning and obsequious, promising everything and doing the opposite. He imagined evil of everyone and told malicious stories without any foundation, then denied them. He was always reporting others as doing wrong, and supposed everyone to have only the basest motives. He stopped drinking, but thought all others drank secretly. This man left the asylum and is yet sober after some years, but is morally insane.

In the summary of the common symptoms following the use of alcohol, untruthfulness, or a low respect for their word, is most prominent. A man who previously took pride in the correctness of his promises and statements will become indifferent to his word, whether true or false. A man previously honest and trustworthy will be found doing dishonest things, cheating persons, taking advantage in little matters, and failing to act fairly in the interest of himself or others. Then follows suspicion of motives and conduct, doubting the honesty and purity of persons. This deepens into delusions of intrigue and deception of others, extreme pessimism and doubt of everything, or a state of mind follows, in which the distress of others is pleasing. Recklessness in the use of money, throwing it away without motive or purpose, or extreme parsimony to hoard it, and grasping selfishness, equally unreasonable, are common. As in other insanities, exaltation of the ego follows, and intense confidence in themselves and their power of reasoning and ability to do anything possible is present.

Many persons who exhibit all these symptoms appear to be but little changed in other respects. They carry on business, seemingly make good plans and execute them, and appear to casual observers the same. These insanities seem to concentrate into particular lines or ranges of thought. In one case an inebriate lawyer doubted the honesty of everyone and thought no one was pure or had good motives, and yet he acted rationally on all other matters. In another case a teacher, who had drunk many years, became a secret thief, purloining everything which he fancied, and when likely to be detected restoring it in some mysterious way.

He appeared and talked honestly, and yet when not observed took advantage of every opportunity to appropriate anything that came in his way. A number of cases of inebriates have been reported where this kleptomaniac impulse took on certain peculiar forms. Thus one man when drinking stole Bibles, another jewelry, and when discovered gave it up freely. One man stole washtubs. A woman inebriate always took aprons and towels; another man stole soap, and so on.

The most unusual and unreasonable things were taken, concealed, and given up freely without any sense of the nature of the acts. One class of inebriates exhibits this insanity in malicious slander, another in extreme suspicion, others in vindictiveness to resent real or imaginary evils, others in immorality and impurity of act and thought. Many of the chronic cases exhibit all these phases in one. The oft-repeated expression that "inebriety is criminality," is true in a general sense, when criminality is understood as a course of conduct in which duty, right, and obligation to others are ignored. The inebriate has physically defective senses; he is not able to adjust himself to the outside world correctly, because his knowledge of its relations is imperfect. His power of reasoning is also deranged, because the impressions from without are faulty and the integrity of the normal action of the nervous system is impaired.

The coarser lesions are well recognized and can be traced in all cases. Beyond this conduct indicates the higher moral defects and changes. Physical changes, as loss of pride, of character, of honor, respect for the truth, of duty to others, low motives or no motives, extreme pessimism, are the first and common changes which lead up to criminal acts. The paralyzing action of alcohol is first seen on the moral brain of consciousness in the dullness and defective workings of the higher functional activities. The change observed when a man is under the influence of spirits is vaguely called the removal of the restraint of reason and dominance of the animal impulses—the brute triumphing over the real man. In reality it is palsy of the consciousness, a cutting off of some part of the higher brain, and consequent confusion of the lower brain and its workings.

Impressions and their meaning are confused and obscure; the higher relation of events and conditions of life are unrecognized. It is asserted that three per cent. of all persons born are without normal consciousness of right and wrong in their relations to others. They have retarded brain development. The part of the brain which constitutes the moral control or consciousness of the higher duties is wanting or undeveloped. Such persons are defectives, and insane in the general meaning of that word, and, like dements, are incapable of normal, healthy adjustment to the relations of life. When an apparently normal state of this brain function has existed and then a great abnormality follows in thought, word, and conduct, disease is present. Comparison of the conduct and character of inebriates, before alcohol is used and after they become habitués, brings out some startling facts that are unrecognized.

From the lowest type of a demented inebriate on one side to the moderate drinker at meals and the fashionable clubman, there is a distinct relation and chain of cause and effect. The clear moral insanity of the one is traceable to the other without any sharp dividing lines. The moderate drinker and clubman who proves to be the defaulter, or who is involved in conduct that is criminal, or who becomes a principal in crime, is suffering from disease differing only in degree from the degenerate inebriate tramp.

Moral insanity is a very prominent phase of all inebriety. Its absence in any given case is always an exception to the rule. A man with a high moral development after he becomes an inebriate may retain the form and externals of his previous character. He may be more emphatic in his display of some qualities, such as religion, truthfulness, and duty, and yet in other matters be oblivious of all obligation and duty. One such man who prayed for inebriates and lectured on temperance carried on an intrigue and sold his influence to the highest bidder. Another man acted as an agent for the sale of stolen goods, and at the same time carried on a great reform revival; and another was engaged in gold mine swindles, while lecturing every night for gospel temperance. The moral insanity was called hypocrisy, and, in legal phrase, was malicious, criminal, and vicious.

In reality it was degeneration and disease, the breaking down of one part of the brain while the others remained apparently clear. In our Civil War a noted general drank to excess at times. Previously he was noted for his hearty frankness and honesty, but was found unreliable, intriguing, and failed when needed most. He showed petty

weaknesses and untruthfulness, with malice that was unknown before in his character. He finally died a moral wreck, after the war was over, having become almost criminal in his thoughts and acts. A clergyman became a secret inebriate and later became involved in a low intrigue and was turned out of the pulpit. He was insane, his consciousness became palsied, and for a time he taught ethical truth automatically. The possibility of one part of the brain being affected and the rest doing normal work, and this condition being concealed, is a reality which experience confirms. The very close relation of one part of the brain with the other makes it impossible for health and disease to exist together, and yet moral insanity may be present and be concealed from general observation. A study of conduct will reveal it and a comparison with previous conduct will show its growth and development. The inebriate who has lost pride of character and sense of duty and obligation, truthfulness and honor, may seem to be the same in many ways for a long time, but sooner or later this moral diseased condition will spread and his whole organism show degeneration. The following are the notes of some cases which have occupied public attention and been the topic of some bitter discussion.

Case I.—John Blank. His father was a strolling actor of irregular character and an inebriate. He married a woman of average ability, from a good family. The father died before John was born, and two years later his mother married again. John was brought up with great care and tenderness. His later education was of the best character. He was a leader of his class as a scholar and an athlete. To his mother and intimates he displayed an intense selfishness, putting his interests and desires above all others, and had no consideration of the pain and distress of others. He was cruel in his conduct to anyone who was in his way to the achievement of any purpose or desire. He finally became a lawyer and was thoroughly unscrupulous in money matters, although not miserly or avaricious. As a politician he was without honor or pride of character, and would stoop to anything to accomplish his purpose. He married a rich woman and soon after swindled his father-in-law and possessed himself of a large property. Then he drank and began to live a fast life, had a mistress, attended horse races. Wherever he went he swindled and falsified and was feared by everyone who had any dealings with him. He went into stock gambling and was swindled and swindled others. To his wife and children he was cruel and violent in his conduct. After a period of excessive use of spirits, he killed his wife and made no effort to conceal it, or run away. On the trial his schemes for deception and fraud were revealed, to the astonishment of everyone. Truthfulness, honer, duty, and all the qualities which go to make character were absent. He was convicted, but the sentence was commuted to a life imprisonment. In this case moral idiocy was inherited.

The higher part of the brain was undeveloped and beyond the reach of culture and education. Without culture he would have early sunk to a low tramp criminal and burglar, and been a pauper degenerate, dying early. With culture he became a higher grade criminal, and yet he was unable to appreciate ethical truth or moral relations. He was insane from birth; alcohol intensified and developed this condition. The insanity was of the higher ethical brain, and concealed except to those who knew him intimately.

Case II.—The second case came from a good family and was normal in all his relations to others; was truthful, honest, and seemed generous and very kind. After a severe attack of typhoid fever, in which he was given large quantities of spirits, he began to use alcohol daily. His father died and left him in charge of a large business interest. His character changed. His regard for his word was lost. He was suspicious of his mother and brothers, and took money out of the business and concealed it. He left his home for a hotel, and, when drinking excessively, wrote violent scandalous letters to his family and employees. He associated with low women, but treated them harshly, refused to give them money, and was constantly in trouble. No public exposure disturbed him. He was frequently in court for petty swindles and refused to pay unless forced to. His business declined and was finally taken out of his hands, and he became a low blackmailer and beggar, drinking at all times and places. He was examined for lunacy and decided to be sane. No symptoms of insanity were found; nothing but wilfulness and vicious cunning, was the opinion of Philadelphia experts. Finally he was convicted as an accessory to murder and incendiarism, and sent to prison for life. This was clearly moral insanity acquired. His family and early history showed no trace of defective consciousness or moral weakness.

His parents were temperate, moral people, church members, above all suspicions. In his early life he attended church and Sunday-school, and was a lovable, attractive character. He began his business career with his father, and seemed in every way most honorable and honest. He displayed excellent judgment and was intrusted with large business interests which he faithfully executed. During his illness from typhoid fever his father died, and on his recovery he was put in charge of the business. A total change of character which followed his recovery might have been due to the spirits given, or the injury to some local center from the fever. At all events, the use of alcohol intensified and fixed this condition. In both of these a great deal of mental vigor and superficial sanity was associated with this low moral brain force. The experts could find no impairment of his reasoning and memory, and concluded his conduct was simply vicious.

The fact I wish to emphasize is that moral insanity follows the use of alcohol, and is present in all inebriates to a greater or less degree. This condition is inherited and acquired, and exists to a far greater extent than would be supposed. There are many excellent men who use spirits, not to a great excess, who are sufferers from the disease. The constant beer and spirit drinker will be found to present the most numerous examples.

VAGINAL SECTION IN RELATION TO PUERPERAL SEPSIS.*

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While in conversation with Dr. J. C. Taylor, first assistant to the late Dr. W. C. Pryor of New York city, he urged me to continue Dr. Pryor's method of treating puerperal sepsis, namely, by walling off the uterus from the neighboring lymphatics through a posterior section by a liberal packing of iodoform gauze. He emphasized and deplored the apparent want of appreciation shown by the indifference of

* Read before the meeting of the South Texas District Medical Society, Beaumont, Tex., December 13, 1905.

the profession at large to this life-saving, simple, surgical procedure.

Inasmuch as most of the local medical fraternity with whom the subject has been discussed have disregarded its importance, it seems pertinent to arouse a discussion of this method of treating puerperal sepsis by reciting my personal experience along with a word as to the author's rationale, hoping to excite renewed interest in a matter that should elicit our profoundest thought.

Dr. Pryor says: "In order to obtain a sterilization of the pelvic lymphatics through which the cocci have proceeded, the posterior *cul-de-sac* is opened by a broad incision and the intestines induced to leave the pelvis by lowering the patient's head. The pelvis is then filled with five per cent. iodoform gauze to the level of the tops of the broad ligaments, thus completely isolating the infected uterus. It is advisable to employ the gauze in snuggly folded strips, so as to facilitate its removal. In the disintegration of the iodoform, free iodine is liberated. This is rapidly absorbed, both by the inside of the uterus and by the peritoneum, and evidences of systemic saturation are manifested within a few hours, the iodine reaction being given in the urine and by the saliva. The intrauterine packings are removed and renewed in three days, to be finally removed in three days more. The *cul-de-sac* dressings are removed in a week, and each five days thereafter, until the *cul-de-sac* closes."

A classification of the infections into two groups, sapremic and streptococcic, should furnish a working basis founded upon the clinical conditions, not overlooking the fact that the two infections may be present at the same time.

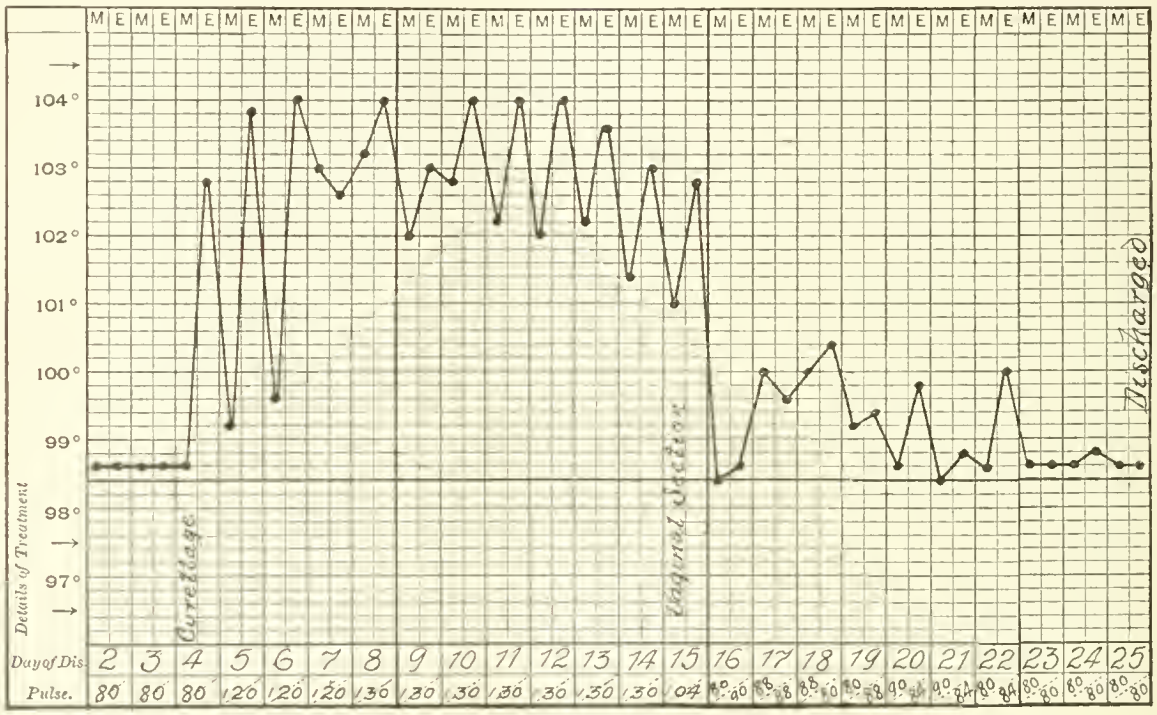
The streptococcic group comprises those cases in which we have a gradual onset, without chill usually; temperature, if ushered in by a chill, high at once, usually a gradual and continuous rise; pulse rapid from the first, more often at or above 120; discharge watery at first, odorless and purulent later.

General or localized peritonitis, with inflammatory exudates surrounding the uterine adnexa, is evidenced by early circumscribed pain and tumefaction.

When this array of symptoms is present the case is found to grow progressively worse, irrespective of our treatment directed to the uterine cavity, and it matters little whether we pronounce the infection sapremic or streptococcic, the pelvic lymphatics should be shut off from the focus of infection, for in so doing we lessen the chances of systemic infection and are given an opportunity to observe and correct any damage that may have already taken place locally; and finally, have the assurance of a more rapid and uneventful convalescence.

In making the above simple division of cases, it is not the intention in any way to disparage the benefit that might accrue from a culture test to confirm our suspicions of the gravity of the situation, but we, as country practitioners, being deprived of laboratory facilities, must rely on the teachings of observation and experience; and who of us has not had cases thus delineated go on from bad to worse in the face of our most approved ordinary measures!

Vaginal section is hardly worthy the dignity of being called an operation, as the veriest tyro in medicine should be able to perform it; the only point worthy of special mention is not to be stingy with the incision, it being important to be able to have abundant room for a liberal amount of gauze packing.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the curette in cases of unquestionable streptococcic infection in the puerperium, recognizing that irreparable damage may thereby be done. This change of view is the outcome of the findings of the Commission of the American Gynecological Society in 1898, which showed that the normal mortality of puerperal sepsis was five per cent., whereas those cases in which curettage had been done and the streptococcus had been found gave a mortality of twenty-two per cent.

Be it understood that we do not deprecate the use of the curette when we have retained secundines to which the classical symptoms of sapremia, slow pulse, low temperature, etc., would at once call our attention, but there are yet those who do not distinguish between these cases, and go on doing harm by scraping and rescraping the uterine mucosa of every patient who shows a rise of temperature, thus losing sight of the fact that the infection is ofttimes beyond their reach, and the condition is demanding the operation in question as the only means of checking the onward march of the infection.

Before making our vaginal section, simple irrigation of the uterus with some mild antiseptic, preferably bichloride of mercury, then a liberal application of equal parts of iodine and carbolic acid, and finally a packing with iodoform gauze, completes the uterine toilet.

In conclusion, too much tribute cannot be paid to Pryor for his vaginal work, which stands as a monument to the man's genius, and he builded better than he knew when he conceived the idea of destroying pathogenic germs by the liberation of iodine in their presence in puerperal sepsis, for not alone is this accomplished, but the many inflammatory lesions that follow in the wake of this dread complication are cut short, if in their inception, and remedied if the condition has been for some time neglected.

Instead of these cases passing into the hands of the gynecologist after untold suffering, to be divested of their tubes and ovaries, the obstetrician, as he stands at the threshold of their troubles, will be their saviour.

The temperature chart, with notes of one case, is typically illustrative of what may be expected with almost absolute certainty after vaginal section in cases of this nature.

In the case, the temperature curve of which is here shown, there was hemorrhage for two days preceding abortion. On the morning of the fourth day the uterus was curetted and packed with iodoform gauze. This operation was followed by profuse sweating and a high temperature. On the eighth day the uterus was irrigated and iodoform in ether (10 per cent. strength) was instilled. On the eleventh day the uterus was swabbed with iodine and carbolic acid. The high temperature persisted, however, until the fifteenth day, when a vaginal section was followed by an immediate fall.

KORSAKOFF'S DISEASE: A REPORT OF FOUR CASES.

By EDWARD LIVINGSTON HUNT, M.D.,

NEW YORK

INSTRUCTOR IN NEUROLOGY, COLLEGE OF PHYSICIANS AND SURGEONS, COLUMBIA UNIVERSITY.

A REVIEW of the literature on Korsakoff's disease shows that the original article was published by Korsakoff in 1888. Many followed, at first in Russia, then in France and Germany, and finally throughout the civilized world.

It is now well established that the disease is a polyneuritic psychosis, which may, however, manifest itself without neuritic symptoms. The character of the psychosis is that of an amnesia. Jolly, in the *Charite Annalen*, very aptly summarizes the mental phenomena when he says: "The cardinal symptoms are (1) disturbances of memory and (2) pseudo-reminiscences." The etiology in the large majority of cases is alcoholic. Other conditions, however, may result in Korsakoff's disease and of these the most common are typhoid fever, pyemia, jaundice, and tuberculosis.

In all about 200 cases have been reported. This is my excuse for publishing the following four cases.

CASE I.—A. R. V., 61 years of age, married; heredity excellent; has always been healthy; is a brain worker and a high liver. Has never had any previous mental affection. Has mingled a great deal with men and has always been known as a regular and steady drinker, although never intoxicated. During the past six months he had been particularly busy, and as a result had worked particularly hard. About a month before I saw him he had met with a slight injury, which, however, gave him a great deal of pain and kept him awake at night. As a result he had been given sedatives and hypnotics. In spite of these he suffered a great deal and became very restless and intolerant. The opiates were increased and the alcohol decreased. He became more restless and intolerant; opiates were given freely and the alcohol further reduced. His condition grew worse. At the end of three weeks he began to make peculiar statements and soon after developed a delirium. It was about this time that I first saw him. He was anemic, emaciated, and very weak. The tongue was thickly coated. The temperature had been 100° for one day, but then was normal. The pulse was rapid and weak. There was a tremor of the facial muscles, of the tongue and of the hands. The knee-jerks were absent. There was no apparent pain in the calf muscles. The pupils reacted to both light and accommodation. The patient was very sick and drowsy. No diagnosis at that time was possible. All drugs except cardiac stimulants were withdrawn. The bowels were opened and the nourishment pushed. In forty-eight hours he was better, stronger, and more alert. Then the delirium showed itself. At first he simply muttered incoherently and picked at the bedclothes. Then as he grew stronger great motor restlessness developed. He was constantly tying and untying his dressing robe, continually going to the door, to the closet, looking in corners and under clothing for imaginary animals. The object of his search constantly changed, now it was a shoe, now a dog, now a pill. The slightest movement in the room changed the train of his thoughts. Nothing held the attention long. He grew stronger and the delirium increased. His words were incoherent, mixed sounds, and alliterative. He was completely disoriented as to time and place. Said it was summer, although it was winter, wished to go home, although he was at home. The familiar objects in his room were foreign to him. He did not recognize his wife. One minute he would speak to her and the next say he had not seen her in a month. He saw friends at the window, he spoke to imaginary friends in the room. He constantly heard the postman bringing mail.

His strength rapidly returned, he became violent, and then it was that the more characteristic symptoms appeared.

He became more coherent, that is, he used words, and no longer meanigless sounds. His memory, so far as recent events were concerned, was now absolutely gone. He could not recall what he had eaten a half hour before, whether or not he had eaten that day. He could not tell the hour of the day, the day, or the month, nor could he say whether he

had seen me before or not. He had hallucinations of sight and also of hearing. He constantly shifted from one subject to another. After a long sleep he would awaken refreshed, and at first coherent, only to ramble again. As he improved he became quite violent, resisted everything, and at one time thought his food was poisoned. Ten minutes later he would eat the same food while talking rapidly about thieves and squirrels. Eevery sound was misinterpreted, every word was transposed into some other meaning. He grew better and could be reasoned with. Then he would admit that his remarks were foolish. He began to read the papers and misconstrued what was in them. When reasoned with he laughed and admitted that he was wrong. He now became so much better that he could tell of events several years back, but whether or not he had slept last night was beyond him. His voice was still tremulous, and unconsciously he would use the wrong word. He realized that he had been sick. Things began to come back to him. He was no longer violent. He behaved himself and it was possible for him to go out. A month had passed and he was convalescing. Gradually but steadily this improvement continued. The tremor of the face and hands disappeared and the knee-jerks returned. The use of words became correct and the memory for recent events slowly returned. There was a steady general improvement manifest in both the physical and the mental symptoms. Occasionally he would forget something, occasionally ask the same question twice, but each week the occasion became more and more seldom. By the end of the second month he felt well enough to go away for a little trip, and very shortly afterwards was completely well.

Case II.—E. N. T., age 50, married; a man of leisure, who for ten years had been a hard drinker—one who at some time in every twenty-four hours had been intoxicated. The heredity was good, the previous history was good. The physical examination showed nothing. There was no tenderness of muscles and no loss of knee-jerks. Suddenly he became delirious. He was put to bed and for several days had a slight temperature, about 99-100 degrees. The pulse was weak and the patient was sick. At first the delirium was an incoherent muttering of inarticulate sounds—made even more so by the great tremor of the tongue and all the facial muscles, which was so bad that it was impossible to comprehend anything he said. His strength fluctuated for three days and then began rapidly to return. He became violent, abusive, and insisted upon using the telephone and going out. The disorientation of time and place was then complete. Although at home, he begged piteously to go home, looked out in his garden and said it was a certain street in a distant town. He recognized no one and miscalled the season of the year. He made loud outcries and called upon imaginary friends and foes. His language was profane and he became jealous of his wife, accusing her of infidelity. He was busy all the time, constantly opening doors and looking for things. He asked for the newspaper to see the stock market, and in the next breath asked where he slept last night. His memory for recent events was lacking, but as he improved he could recall events of his past life. He would tell me a long story about some terrible offense, which the servants had committed during my absence, the whole story being a fabrication.

This patient was in bed six weeks, and during that entire time he was quite sick. The first month the mental condition was one of complete confusion and incoherence; the physical condition was one of great weakness and cardiac failure. In the beginning it was difficult to get him to take any nourishment and constant resort was had to hypodermics. After a few days he consented to take liquid nourishment, and from then on began to gain. The physical improvement was steady and rapid. The mental condition remained one of incoherent confusion for fully a month. Towards the end of the fourth week the characteristic delirium developed. Then followed the great motor restlessness and the active objection to discipline and control. The mental improvement kept pace with the physical, and in another ten days the patient was quiet, tractable, but with a complete disorientation as to time and place; the memory for recent events was lost. The imagination had free rein.

The duration of this case from the first night of the delirium to the almost complete recovery, when he was able to be out, was about eight weeks. The recovery was steady and the patient did well. I was unable to follow him as long as I should have wished, but subsequently heard that he got well of this attack and later on returned to his drinking.

Case III.—Mrs. L. P., aged 35. This was a young woman, who had always led an irregular life, and who for several years past had been addicted to drinking. She had been in the habit of indulging in cocktails, wines, champagne, etc. The heredity was good. The previous history was good, as she had always been well up to eight months ago. At that time, without any apparent cause, she developed a condition of mental confusion and delirium. She was placed under restraint, but remained so only a short time. She then returned to her original mode of life and the mental condition became worse. I saw her only once, but on that occasion there were no symptoms of a neuritis, and, except a tremor of the face and hands, there were no physical signs. The general appearance was that of an alcoholic. The mental condition was very characteristic. The patient was much depressed and in great mental confusion. She was slow to take in the questions, and not at all certain of her replies. She used the wrong words and was quite disoriented as to time. In answer to the question as to what year it was, she replied 1907; and when the date in the newspaper was shown to her she laughed. A moment later she was talking of something else. She was very restless and kept constantly moving about. When in bed she moved her hands and feet, etc. Her memory for the events of the day was entirely gone. She could not remember who had visited her; said her husband had been in three times that day, when, in reality, he had not visited her once. She could not tell what she had eaten that day, and only after a great effort of thinking did she succeed in correctly naming the month. She denied having any hallucination of sight or hearing. The memory for events in her past life was quite good, and she could recall her former address. As to her present surroundings she was somewhat in doubt, and admitted frankly that her mental condition was one of great confusion.

Case IV.—A. B. C., 35, married; heredity good; previous history good. Had recently recovered from an attack of typhoid fever. Denied alcohol. The physical examination was negative except for great weakness in the legs. He came to the clinic because in the past two weeks he had found that he was unable to remember matters connected with his daily work and matters of very recent occurrence. Everything previous to his illness he could recall very accurately and very well, but in the daily routine of his work he found that his memory failed him; he found difficulty in recalling the exact date

and the month. Even if it was told him, he could not retain it.

This patient was very irregular in his attendance, and it was only at rare intervals that I saw him. The history of the typhoid was somewhat obscure, as it was impossible to ascertain as to whether the attack had been severe or mild, or, more important still, as to whether he had been given much or little alcohol. The main facts seemed to be that he had had an attack of typhoid, and that since then his memory had been poor. After several weeks he came in to report that he had completely recovered and was back at work.

To summarize these four cases then: The first was alcoholic plus drugs, the second and third were both uncomplicated alcoholic, the fourth was post-typhoidal, and may have been complicated with alcohol. Only one—the first—showed distinct neuritic symptoms, although both the second and fourth were weak on their legs, and probably in both the knee-jerk was diminished. All except the typhoid case showed a tremor. All four displayed characteristic and identical mental symptoms—loss of memory for recent events, disorientation as regards time and place, confusion followed by violence and motor restlessness.

Two out of the four patients recovered; none died; two returned to their excesses, and their cases may practically be considered as chronic.

71 East Fifty-second Street.

OPEN SAFETY-PIN SWALLOWED BY AN INFANT SIX WEEKS OLD, AND SUCCESSFULLY PASSED BY BOWEL SIX DAYS LATER.*

By B. VAN D. HEDGES, M.D.,
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Through the courtesy of Dr. P. B. Cregar, the attending physician, with whom we saw the child in consultation, I have the privilege of reporting a case of an open safety-pin swallowed by an infant six weeks old, and successfully passed by bowel six days later.

The child was breast fed, of normal size and weight, and has always enjoyed good health. While the mother, with some open safety-pins in her hand, bent over the crib, the babe struck her hand with its little fist, dislodging one of the pins, which fell into its open mouth and was instantly swallowed. The child was immediately taken to the hospital for an *x*-ray examination. The pin could be most distinctly seen in the stomach, where it was being turned over and over by the peristaltic action. After further consultation it was decided not to interfere surgically, but to watch the case carefully and be prepared to do a laparotomy at the first indication of trouble.

For the next three days the only difference noted in the child's symptoms was that it slept better at night. There was no vomiting, no blood in the stools, no evidence whatever of any gastrointestinal irritation. On the fifth day the pin was seen in the descending colon, hinge end down, and the next day was successfully passed by rectum in a mass of semi-solid fecal matter. The pin measured 1 1-4 inches in length and 1-2 inch across at the open end.

In the *Journal of the American Medical Association* for November 25, 1905, Littig reports a similar case in an infant eleven months old. In 1903 Holt showed before this section a number of open safety-pins swallowed and successfully recovered from a child of eighteen months. As far as I know the case I have reported to-night is that of the youngest patient on record.

The question of immediate operation in this case, as against the let-alone policy, was hard to decide. One of the most eminent surgeons in the country advised gastrotomy without delay. On the other hand, Dr. L. Emmett Holt just as strongly urged keeping hands off until there was some indication of trouble.

From our experience in this present instance, and from the results of a rapidly increasing number of cases in children slightly older, who have all recovered without surgical interference, I am convinced that it is wiser to avoid the shock and dangers of an operation and to let nature take its course—especially when the child can be kept under constant *x*-ray observation.

*Read before the Pediatric Section of the New York Academy of Medicine December 14, 1905.

A Case of Multiform Tic, Including Automatic Speech and Purposive Movements.—Morton Prince has had a most interesting case of this kind under his care. The affection began twenty years ago, when the patient was fifteen years old. At first it was only a choreiform opening and closing of the eyelids of the usual type. Later the facial muscles became involved. This was followed by affection of the head, shoulders, arms, and legs. About five years ago the involuntary automatic speech developed gradually. Naturally the patient has a clean mind, is well-mannered, well spoken of, and keenly feels his affliction. The writer believes that this very fact is a factor in the psychosis. The affection is much worse when the patient is especially desirous of suppressing it, as in the presence of strangers and ladies. The automatic speech is interjected in the midst of nearly every sentence that is uttered. The patient does not know until the words are actually spoken what he will say. His writing is interrupted by spasmodic movements of the hand, which makes irregular scrawls on the paper. He declares that if he ever thinks of a peculiar movement he is apt to develop it. In other respects the patient is to all appearances a healthy and intelligent man. None of the stigmata of hysteria can be detected. A fear may originate a new tic with this patient. When he is alone he is never affected by automatic speech unless some one is within hearing distance. The tic movements, however, occur when he is alone. He exhibits automatic purposive movements of his hands when handling a knife or razor, but he never cuts himself. The essential feature of the automatic tics is that they are not absent-minded phenomena, but occur not only involuntarily, but while the patient is making every effort to control them.—*The Journal of Nervous and Mental Diseases.*

Cesarean Section.—Olshausen reports 118 cases of cesarean section of which 91 were for contracted pelvis. Of this number he himself performed 65 with three deaths, and his assistants 26 with six deaths. In describing the technique he advises the operator to make the abdominal incision very high. It should begin considerably above the umbilicus and terminate 8 or more cm. from the symphisis. In opening the uterus the incision is made across the fundus and down the anterior or posterior surface, according to the position of the placenta, which should be avoided. The dilatation of the superficial veins is usually a guide to the placental site. Twenty minutes before the operation, 0.12 gram of ergotin is given and no local measures are taken to prevent hemorrhage from the uterine incision. Compression of the cervix in any way is superfluous and undesirable, as it is apt to predispose to secondary hemorrhage. The suture employed is in two layers; the first takes only the muscular wall as deeply as possible, and the second is a continuous suture passing through the peritoneum and the upper layer of muscular tissue. Catgut is used as suture material.—*Zentralblatt für Gynäkologie.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, March 10, 1906.

THE PHARMACOPEIA FETICH, AND OTHER THINGS.

A RECENT meeting of the Suffolk District (Mass.) Medical Society was devoted to a discussion of proprietary remedies and of the means best adapted to bring about a reform in the methods of their exploitation. The papers preceding the discussion, which were read by Drs. Frank Billings of Chicago and Frank G. Wheatley of North Abington, are published in the *Boston Medical and Surgical Journal* of March 1. Dr. Billings' paper was practically the same as the one read at Portland, Ore., last summer and recently published simultaneously in most of the State medical journals. It was devoted chiefly to ridicule of the uncouth names which manufacturers have seen fit to give to their preparations and of the "literature" in which they set forth the therapeutic virtues of these remedies. The absurdity of many of these names and of many of the claims of the manufacturers is patent, and nothing is easier than to make fun of them. As a remedy for the evil, the author urged the all-sufficiency of the Pharmacopeia to meet the therapeutic needs of the physician. "The Pharmacopeia," he said, "furnishes a list and description of chemicals and drugs, more than enough to meet the wants of the most ardent believer in drug therapy." Dr. Billings seems, however, to be a rather recent student of the good book, for he expresses sorrow that acetanilid—the *bête noir* of the Chicago wing of pharmaceutical reformers—"was made official in the last [not the last, but only the latest, we trust] Pharmacopeia," apparently unaware that it has been official for ten years. Dr. Wheatley's paper was in a measure a corrective of the one which preceded. The author put his finger on the cause of the "nostrum evil"—to adopt the term of the least judicious of the advocates of pharmaceutical reform—which is the therapeutic nihilism of Osler and others who are looked up to as guides in medical practice. It is only natural that young men who have been taught that no drug has any efficacy in the treatment of pneumonia and other so-called self-limited diseases, when confronted with a dying patient will grasp at any straw in the effort to save, and, finding only blank despair in the pages of their text-books, turn in their extremity to the rosy promises of cure in the literature of the makers of proprietary and patented remedies. This author also sends his hearers and readers to the Pharmacopeia as treating of "all the agents we need to use" though he also includes the Dispensatory, which fortunately treats of many non-official as well as of official remedies. In the discussion which followed the reading of these papers, Dr. White of Boston made the assertion that he had never in the fifty years of his practise, "prescribed a single remedy outside the lists of the Pharmacopeia of this or other countries."

The one ray of light in all this blackness of pharmacopeial conservatism was emitted by Dr. Morton Prince. He took occasion first to draw a sharp line of distinction between quack medicines exploited in the lay press and the secret pharmaceutical preparations advertised only to the medical profession—a distinction which is persistently ignored, to the detriment of pharmaceutical reform, by the *Journal of the American Medical Association* and its Council on Pharmacy and Chemistry. He deprecated justly the prescribing of secret remedies, and thought the medical journals might contribute to the reform by "a reasonable elimination of the most objectionable advertisements." But, "it is to be remembered," he said, "that if the journals advertise, the medical profession prescribes. This means that public opinion to-day is on the side of the manufacturers." The limits of an editorial article alone prevent us from reproducing entire the remarks of Dr. Prince as reported in our Boston contemporary. He has shown, as no other contributor to this vexed question has succeeded in doing, the true way of pharmaceutical reform. If medical men will refuse to prescribe remedies the composition of which is unknown, the "nostrum evil" will be at an end. But the physicians of this country are, as we have said before, not babies to be guided by a certain coterie of pharmacologists and therapeutic nihilists—a queer combination—whose slogan is, Back to the Pharmacopeia! and who seem to think the way to reform the manufacturers of proprietary remedies is to class them with the makers of quack medicines. The sentiment expressed in the couplet, "It is a sin to steal a pin," has made many a professional thief, and the same principle adopted by the intemperate organ of the American Medical Association and its State satellites will assuredly drive some of the weaker and less honorable manufacturing chemists into the ranks of the avowed "patent medicine" men.

The attempt to coerce practitioners of medicine to a strict adherence to the drugs official in the Pharmacopeia is less wicked, but more foolish. How many physicians can echo Dr. White's assertion that he has never prescribed any but pharmacopeial remedies? We hope, for the sake of their patients, that they are few in number. The latest revision of the U. S. Pharmacopeia has admitted a number of remedies of undoubted worth. Why were these admitted? Simply because the medical men of the country had been using them, though unofficial, and had found them indispensable in their practise. If they had confined themselves, as Dr. Billings would have had them, to the remedies declared official by the seventh revision of the Pharmacopeia, these new drugs would still be "secret nostrums" and among the *noli me tangere* of the unco guid. A physician high up in the councils of the American Medical Association recently sent a letter to the organ of the Association in which he exposed the absurdity of the contention that "ethical" practitioners should confine themselves to pharmacopeial drugs, and the editor of the organ answered that he had set up a man of straw. But Dr. Billings, the treasurer, we believe, of the Association, and an ex-

president, refutes the contention of the editor-secretary, and swears by the Pharmacopeia as the guide of practise for all ethical prescribers.

The Medical Record is heartily in favor of pharmaceutical reform, but it despairs of any progress so long as the cause is in the hands of the foolish and discordant Chicago missionaries. A little common sense and a little restraint in the use of invective would go a long way to bring about a reform which now seems impossible.

TAX-FREE ALCOHOL.

Numerous attempts have already been made by enlightened statesmen to secure for this country the manifest and manifold advantages that would accrue to countless industries were the ill-advised revenue tax of something over two dollars a gallon, now imposed on grain alcohol, removed. Each well-meant effort has, however, been rendered ineffectual either through the illogical and often fanatical opposition engendered by self-interest or a mistaken sense of duty, or through the perhaps still more exasperating passive resistance offered by the tergiversations of the divers Circumlocution Offices whose function it is to prepare the way for legislative consideration, but whose delays and vacillation cause many worthy measures to die a natural death of old age before final action can be taken. For some weeks the Committee of Ways and Means has again been considering the question, the subject of its deliberations being a bill sponsored by Representative Hill of Connecticut, and having for its object the placing of ethyl alcohol on an industrial parity with methyl alcohol and gasoline. The enormous handicap upon American manufactures in competing with European products coming from countries such as Germany, where the use of ethyl alcohol is exempt from the restrictions existing in this country, is a matter of common knowledge, and need not be discussed at this moment, nor is it necessary to point out how advantageous to the farmer it would be were he allowed to ship a portion of his grain in the compact form of alcohol, which would also serve as fuel for his agricultural machinery. It is stated that the greatly increased consumption of gasoline and its congeners, owing to the constantly growing prevalence of motor machinery of all sorts, must soon be followed by a relative insufficiency in the supply of those commodities, which will entail a rise in price, whereas tax-free alcohol is well adapted to subserve the same purposes with little or no alteration in the motors, and an appreciable pecuniary advantage.

Leaving aside all of the purely commercial aspects of the question, recent experiences have demonstrated the danger both to eyesight and to life attending the employment of wood alcohol in the arts and industries, and it is equally well-known to how great an extent the same agent is employed in the adulteration of cheap beverages, flavoring extracts, preparations of Jamaica ginger: it is even used, according to the Health Commissioner of New York, in the manufacture of communion wine. Given an untaxed grain alcohol, the temptation to resort to sophistications of this sort would cease to exist and the health and earning power of the artisans in many branches of industry would no longer be jeopardized. The loss of revenue to the government involved if such a measure were to be enacted is one that the ingenuity of legislators could easily compensate in other ways, while the moral and economic turpitude of a tax that assails not only the country's industries but also the physical welfare of its inhabitants, is sufficiently apparent to render all considerations of revenue production entirely beside the mark. The objections of the total abstinence advocates may be met with equal positiveness, for ethyl alcohol may, without detriment to its technical applications, be "denaturized" in such a way as to render its use as a beverage impossible to any but those casehardened topers who even now take kindly to wood alcohol itself and the matter of illicit redistillation would be no more difficult to deal with than is the work of the "moonshiners" at present.

While institutions of learning are already allowed tax-free alcohol for their laboratory purposes, the benefits of cheaper—even though "denaturized"—alcohol to the medical profession, both in research work and in practise, would be very great in numerous ways that it is hardly necessary to suggest, and it is highly desirable that physicians should use their influence in support of a measure which will mean so much for the material and hygienic welfare of the country.

The Transmission of Syphilis to the Third Generation.

It has often been claimed that syphilis cannot be transmitted beyond the second generation, but proofs have been accumulating which seem to demonstrate that such a restriction does not in reality exist. Competent authorities are now agreed that degenerative or dystrophic effects may be transmitted to the third generation, although the idea that the disease may likewise be transmitted in its active or virulent state has not been universally accepted. C. F. Marshall, writing in *Treatment* for December, 1905, calls attention to the recent advances in the study of this subject, particularly by Fournier and Tarnowsky. In a series of over one hundred cases collected by the former, only a small proportion of the descendants were found to be free from syphilitic stigmata. Many of these were seen to be of such a character, however, that they could be accepted as evidence of ancestral syphilis only by enthusiastic followers of these doctrines. Admitting the possibilities of the transmission of the degenerative effects of syphilis to the third generation, that of the virulent type is more difficult of proof, although a number of apparently undoubted cases are now on record. Time and treatment are the two most important factors in the process. It is well known that the signs of hereditary syphilis may be delayed until the procreative age, and in this way an individual afflicted with hereditary syphilis might transmit the disease in a virulent form to the offspring. That this does not happen more commonly may be ascribed to the fact that marriage is not apt to take place with the subject in the condition noted, and at this time the disease is usually attenuated by time, and also by treatment if this has been used. The two chief obstacles to actual proof of transmission to the third generation are the possible reinfection of the second generation and the intervention of another syphilitic genitor. The latter factor always constitutes a stumbling block, for, although we can have no doubt of the relationship between any given child and its mother, it

must be acknowledged that we have no means of proving paternal parentage by scientific methods.

Vascular Spasm and Fibrosis.

There is a certain symptom complex associated with the onset of old age which we have learned to ascribe to definite and well-marked changes in the kidneys, the heart, and the blood-vessels. It is often difficult to determine which of these constitutes the primary lesion, for when the patient comes under observation all three are likely to be affected. There is one group of these cases in which the vascular symptoms predominate to such an extent that the disease may be assumed to reside primarily in the vessels rather than in the kidneys. In a recent communication, H. A. Hare (*Therapeutic Gazette*, December, 1905) describes this class as characterized mainly by high arterial tension, without any renal lesions demonstrable by the ordinary symptoms or by uranalysis. Hare distinguishes three types of high tension; in the first, the tension persists as the result of a spasm due to prolonged nervous stress combined with certain abuses as to habits of life, food, and drink. In the second, there is, in addition to the spasm, a gradually developing fibroid change in the vessels. The third includes cases in which after a prolonged period of high tension, there develops more or less suddenly a persistent low tension, in which the arteries are relaxed and distended to such a degree that they resemble veins. In accordance with these clinical distinctions, the histories are given of a number of cases which show an astonishingly high arterial tension not affected very much by the usual remedies. The heart seems to have escaped here sufficiently to maintain the tension. As Hare points out, however, it is quite possible for the muscles of the larger vessels to undergo hypertrophy, as fibrosis in the peripheral vessels increases, in a manner similar to that which takes place in the heart. And likewise it is equally probable that vascular compensatory hypertrophy may give way just as the cardiac variety does. This rupture of compensation is looked upon by Hare as a fortunate circumstance, for it often gives the heart a rest and allows it to recover from its fatigue, and life in this way may be saved. It is also possible for the affected vessels to recover their power if the peripheral fibrosis is arrested, but cardiac stimulants in these cases are not indicated as much as rest and the proper employment of alteratives and vascular sedatives. It is evident, moreover, that in cases in which the high tension is due to fibrosis the nitrites are of little value compared with the iodides. A knowledge of the points here noted will, in cases similar to those described, lead to the giving of a better prognosis than would otherwise be indicated, and to the institution of a different mode of treatment from that usually employed.

The Smoke Nuisance.

At the meeting of the New York Academy of Medicine—a body which under the present public-spirited and intelligent administration is well fulfilling its mission as the guardian of the people's health—held March 1, resolutions were passed reminding the Health Department of its duty in the enforcement of the law against pollution of the atmosphere by coal smoke. It is full time something was done to abate this evil unless we are content to sacrifice the beauty of our Italian sky to the greed of wealthy corporations. The records show that there has been a progressive decrease during the past few years in the number of complaints by Health Department inspectors, yet it is apparent to even the casual observer that the number of offenders against the smoke law is steadily increasing. Electric light is a great convenience, and even a necessity, but we need not barter our glorious sunlight to obtain it. There are some nuisances entailed by modern progress which must be endured, but for the smoke nuisance there is no excuse. Bituminous coal can be burned without this wilful waste of carbon, and it is strange that those in charge of power-houses and other large consumers of soft coal should not see that the prevention of smoke by suitable devices, or even by more careful stoking, would effect a very appreciable economy in fuel. They should be made to see it. One by one the great cities of the East are being devoured by the black smoke beast—even tidy Philadelphia is becoming grimy and soot-soiled—and if New York is to be saved, speedy and energetic action must be taken by the Health Commissioner. We have gone back to dirty streets, but let us at least keep the air clean.

News of the Week.

English as She Is Wrote.—The following is one of the articles of the proposed Constitution of the new Association of State Medical Journals: "6. Expulsion: Any member of this Association which shall publish an advertisement of any remedy which is disapproved by the Council of Pharmacy and Chemistry of the American Medical Association for twelve months after due notice of such disapproval shall have been mailed to the last known address of the persons duly qualified as representatives of such member, shall be dropped from this Association; and shall not be eligible to reelection to membership until it shall have complied with the requirements of the Council's rules for a period to be determined by subsequent ruling, but not less than one year." We would suggest that the Council on Pharmacy and Chemistry analyze this and publish its ingredients, for in its present form it is a secret article and therefore unethical.

A Health Commissioner for Brooklyn.—A bill has been introduced into the Assembly by E. C. Dowling, and one into the Senate by Charles Cooper, having the object to create the office of Health Commissioner for the Boroughs of Brooklyn and Queens, and thus take from Commissioner Darlington control of the affairs of the Health Department in those two boroughs. At present Brooklyn is represented by an assistant sanitary superintendent, and the physicians of the two boroughs believe that the Health Department of that part of the city cannot be administered with satisfaction to either the medical profession or the public because of lack of authority and direct responsibility. The bills have the endorsement of Dr. Campbell, President of the Medical Society of the County of Kings, and of Bird S. Coler, President of the Borough of Brooklyn.

A Medical Papyrus.—Advance copies of a work, the first of a series of publications on Egyptian archeology, have been received from Leipzig by the University of California, at Berkeley. It is the work of Dr. Geo. A. Reisner, Hearst lecturer on Egyptology in the University. The series is dedicated to Mrs. Phoebe A. Hearst, who, in the interests of this institution, bore the expense of expeditions to Egypt, Peru, and other countries, occupying five years. The volume contains the text of the medical prescriptions and incantations contained in the original papyrus, which was brought to the

camp of the Hearst Egyptian expedition in 1901 by a peasant. The papyrus belongs to a period between the twelfth and eighteenth Egyptian dynasties. Medical knowledge at that time, judging from the character of the compilation, consisted of a great number of small collections of prescriptions by different physicians, preserved at different towns or in different temples. The prescriptions in this are less systematically arranged than those of the Ebers papyrus.

The American Laryngological, Rhinological, and Otological Society.—The twelfth annual meeting of this society will be held under the presidency of Dr. Jas. E. Logan of Kansas City, Mo., on Monday, Tuesday and Wednesday, June 11, 12, and 13, 1906. Prizes have been offered by the following members of the society: J. E. Sheppard, M.D.: Topic, "The Best Classification of Non-Suppurative Affections of the Middle Ear," the same to be based as far as possible on pathological research; prize, $100. D. Braden Kyle, M.D.: Topic, "Atrophic Rhinitis." Prize, $100. Charles W. Richardson, M.D.: Topic, "What Operative Treatment Offers the Best Results for the Cure of Chronic Suppurative Frontal Sinusitis;" prize, $100. Norval H. Pierce, M.D.: Topic, "Original Work on Rarification of the Labyrinthine Capsule;" prize, $100. Edward B. Dench, M.D.: Topic, "Chronic Non-Suppurative Inflammation of the Middle Ear;" prize, $100. The above-named prizes may be competed for by members of the society only, and competitors are requested to present their papers to the Secretary before April 15, 1906. The successful paper for each prize will be read at the annual meeting. Competitors are requested not to sign papers, but to inclose name in a sealed envelope. The Council further announces that the society holds for the encouragement of research a fund of $500, the whole or a portion of which may be awarded at the discretion of the Council, to any of the society's members presenting an essay embodying original work in subjects pertaining to laryngology, rhinology, or otology. The Council reserves the right to make no award, if in its opinion the essays are of insufficient merit. All essays submitted must be anonymous, being designated by a motto or device, the writer's name and address accompanying the essay in a sealed envelope inscribed with the same device or motto as the essay. The Secretary is Dr. Wendell C. Phillips, 40 West Forty-seventh street, New York City.

Separation of College and Hospital.—At a recent meeting of the Board of Directors, action was taken separating the management of the Angelus Hospital from that of the College of Physicians and Surgeons of Los Angeles, Cal. Dr. C. W. Bryson was elected Dean of the college, and Dr. Chas. B. Nichols President of the Board of Directors of the hospital. Dr. James P. Booth was elected to succeed Dr. Nichols as editor of the Los Angeles *Medical Journal,* published by the college.

Formaldehyde Disinfection.—The Illinois State Board of Health has been conducting a series of experiments in its laboratory in formaldehyde disinfection, and as a result the board now feels justified in recommending formaldehyde for use in disinfection after contagious diseases, if employed with potassium permanganate, and with 40 per cent. aqueous solution of formaldehyde. It believes that in properly sealed rooms positive and reliable disinfection can be secured by the use of three and one-half ounces of potassium permanganate and one pint of formaldehyde solution to each 1,000 cubic feet of air space.

Seaside Hospital for Tuberculous Children.—John D. Rockefeller has offered to give the Association for the Improvement of the Condition of the Poor $125,000 toward the erection of a permanent seaside hospital for children suffering from tuberculosis of the bones and glands, on condition that a like amount is raised before July 1 and that the permanent maintenance of the hospital is assured. Various donors have already pledged themselves to contribute sums amounting to $42,000. It is said that the interest in the project is to a great extent due to the prominence into which the Sea Breeze Hospital at Coney Island was brought by President Roosevelt's visit last summer.

Decision Against a Board of Examiners.—The Board of Medical Examiners of the State of California revoked the license of a woman physician of Los Angeles on the ground of alleged unprofessional conduct. The case was taken to court, and recently the Supreme Court has handed down a decision in favor of the doctor, restoring her right to practise. The decision further contains the statement that the statute of 1901 is "vague, indefinite, and uncertain."

San Francisco Polyclinic Banquet.—The sixteenth anniversary of the Polyclinic was celebrated on February 16 with a banquet at the Union League Club, Dr. Leo Newmark serving as toastmaster. After a most enjoyable evening, the following officers were elected for the ensuing year: *President,* Dr. Chas. G. Levison; *First Vice-President,* Dr. Henry L. Wagner; *Second Vice-President,* Dr. Geo. W. Merritt; *Treasurer,* Dr. Louis Bazet; *Secretary,* Dr. Martin Regensburger. Among the other physicians present were Drs. Wilson, Shiels, Langley, Porter, Zobel, Evans, Bruns, Carpenter, and Ryfkogel.

Harvey Society Lectures.—The twelfth lecture in the Harvey Society course will be delivered by Professor Theobald Smith of the Harvard Medical School, at the New York Academy of Medicine on Saturday, March 10, at 8:30 P.M. Subject, "The Parasiticism of the Tubercle Bacillus and Its Bearing on Infection and Immunity." All interested are invited to attend.

The San Diego County (Cal.) Medical Society has reelected the officers of the preceding year to serve during 1906, Dr. J. M. French, President, and Dr. T. L. Magee, Secretary and Treasurer.

The Training of Nurses.—On March 29 a symposium on the training of nurses will be held at the New York Academy of Medicine, to discuss the question of the overtraining of nurses and to suggest remedies.

The Lisbon Congress.—Sir Patrick Manson will not deliver his proposed address at the International Medical Congress, and Prof. Waldeyer will take v. Bergmann's place as Germany's official representative. As already noted in the MEDICAL RECORD, America will be represented by Dr. N. Senn of Chicago.

The New York Society for the Relief of the Ruptured and Crippled reports that in 1905 963 patients, mostly children, where treated in its hospital at Forty-second street and Lexington avenue, and that 44,157 treatments were given outside. The committee which makes this report states that the hospital needs funds. Every year it runs $40,000 behind its permanent subscriptions and endowments.

The New York Orthopedic Dispensary and Hospital.—During the year just ended 4,220 patients were treated in the dispensary and hospital, and 3,431

visits have been made by the hospital staff to the homes of patients. This year the expenses will be considerably increased. Owing to the entirely inadequate accommodations for the nurses, it has been found necessary to add to the hospital property a small building on Fifty-eighth street, which will be used as a nurses' home, and to relieve the congested consulting rooms.

Hazed Medical Student Sues.—A student at the Creighton Medical College, Omaha, is about to sue the faculty for $50,000, on the ground that as the result of hazing he has been completely incapacitated. He states that he was dragged from his classroom by sophomores, who intended to throw him into a ventilating shaft. He fought, and was kicked in the back, his spine being injured, and he has had to use crutches ever since.

Dr. J. B. Mickle, superintendent of the Metropolitan Hospital on Blackwell's Island, has handed in his resignation, to take effect on March 31. Ill health is the cause.

St. Francis Hospital Dedicated.—The new St. Francis Hospital, occupying the entire block bounded by One Hundred and Forty-second and One Hundred and Forty-third Streets, Brook and St. Anne's Avenues, and containing 400 beds, was dedicated last week by Archbishop Farley.

Metropolitan Hospital and Dispensary.—At the annual meeting of the Metropolitan Hospital and Dispensary, held on March 1 at the old hospital building, 248 East Eighty-second Street, it was announced that ten donors had given $500 each toward a new hospital building. The Building Committee was authorized to sell the present hospital site at the proper time, and immediately to purchase the new building site already selected.

The Bushwick and East Brooklyn Dispensary at Myrtle and Lewis Avenues has received a gift of $10,000 from Peter Wyckoff of Williamsburg, who has presented a similar amount to each of several other charitable institutions.

Record Fasting.—Sacco, the Hungarian fasting expert, has completed a test fast of forty-five days under observation in London, and claims the record. During this period he smoked 952 cigarettes and drank twenty-two bottles of table water. At the conclusion of the test he had lost fifty-five pounds. His respiration was 23 and pulse rate 84, and he is reported to have been in satisfactory physical condition.

Centenarian Diversions.—At a marriage recently solemnized in a Kentucky town, the bridegroom was 101 and the bride 100 years of age. Their courtship is said to have been an "intermittent" one of seventy years' duration. On March 3 a court in Washington, D. C., found a man alleged to be 108 years of age, guilty of habitual drunkenness.

The Widener Home for Crippled Children at York Road and Olney Avenue, Philadelphia, erected at a cost of $2,000,000 by P. A. B. Widener as a memorial to his wife, was opened on March 3. The institution comprises a set of magnificent buildings and a park of thirty-five acres, consisting of woodland, lake, and gardens. Dr. DeForest Willard, surgeon-in-chief of the institution, in his opening address announced that Mr. Widener had set aside a further sum of $3,000,000 as an endowment fund for purposes of maintenance.

Benzoic and Salicylic Acids in Foods.—Dr. Wiley, chief chemist of the Department of Agriculture, on February 26 presented before the House Committee on Interstate and Foreign Commerce some of the results of his experiments upon his "poison squad" with salicylic acid as a food preservative. Although deleterious to health, he declared that salicylic acid is less harmful than benzoic acid, boracic acid, or any of the other preservatives. He asserted that benzoic acid unquestionably is injurious to health if taken into the system regularly. He thought that the occasional use of such foods as contain benzoic acid, although harmful, might not be noticeable. Cranberries, he said, contain enough benzoic acid to make them undesirable as an article of daily diet.

Street Noises.—Fifty women, representing the West End Women's Republican Association, appeared before the Aldermen's Committee on Public Health March 1 to protest against street noises. Their efforts were especially directed toward getting the board to pass an ordinance restricting hucksters, scissors grinders, etc., to certain streets.

Leprosy Hospital in the Hawaiian Islands.—Dr. Walter R. Brinckerhoff of the Harvard Medical School has received the appointment as director of the United States government leprosy research hospital which is to be established on Molokai, the island on which the lepers are now segregated.

Obituary Notes.—Dr. Joseph Edgar Wells of Brooklyn died on February 27, in his forty-first year. He was a graduate of Jefferson Medical College and had practised in Brooklyn for eighteen years.

Dr. William A. Drake of New York City died on March 1, at the age of thirty-nine years. He was graduated from New York University Medical College in 1889.

Dr. Samuel D. Brooks of Springfield, Mass., died on February 27, of angina pectoris, a few days before the completion of his ninetieth year. He received his medical diploma from the Pittsfield Medical College in 1841, and then went to Norwich, where he practised until 1848. In 1853 he was made superintendent of the State Almshouse at Monson, and in 1858 he was appointed superintendent of the New York Juvenile Asylum. He held this post until 1871, and during this time instituted many reforms in the institutional care of children. He then returned to Pittsfield and engaged in general practise, which he continued until about fifteen years ago. Dr. Brooks was a true son of the Revolution, as his father fought in that war.

Dr. J. E. Bingham of Walla Walla, Wash., died on February 19 of Bright's disease, at the age of sixty-one years. Dr. Bingham was born in Williamsport, Penn., and was graduated from the Jefferson Medical College in 1868. In 1870 he went to the Pacific coast and served for a time as acting assistant surgeon in the United States Army, and he later was a member of the State Board of Medical Examiners.

Dr. Joseph Hils of Woonsocket, R. I., died on February 23, in his fifty-seventh year. Dr. Hils was born in Canada and received his medical degree from McGill University in 1873, since which time he had practised continuously in Woonsocket. He was a consulting surgeon at St. Joseph's Hospital, Providence, and a member of the Woonsocket Hospital staff since its foundation in 1888.

Dr. John C. Spray of Chicago, Ill., died on February 20, at the age of sixty-one years. He was graduated from the Medical School of Northwestern University in 1869, and was superintendent of the Dunning Institutions from 1878 to 1889. He was well known as an alienist, and was frequently called as an expert in legal cases in which questions of insanity were involved.

Dr. William H. Hinton of Ogden, Utah, died on February 19, of meningitis, at the age of thirty-seven years. Dr. Hinton was born in Missouri, and received his medical education at the Rush Medical College. He served as railroad surgeon on several lines until two years ago, when he commenced practise in Ogden.

Dr. Thomas N. Birnie of Springfield, Mass., died of Bright's disease in Orlando, Fla., on February 26, at the age of fifty-one years. Dr. Birnie was graduated from Yale University in 1876 and from the College of Physicians and Surgeons in New York four years later. For the last fifteen years his health had been very poor.

Dr. F. Griffin of Mapleton, Ia., died on February 6, at the age of fifty-nine years. He was born in Boston, Mass., and in 1864 enlisted in the army and served through the Civil War, at the close of which he began the study of medicine, and was graduated from Rush Medical College in 1869. He practised in Wheatland until 1878, when he removed to Mapleton and had practised there ever since.

Dr. C. D. Osburn of Sherwood, Ore., died on February 19 of heart disease. He was a graduate of Jefferson Medical College in the class of 1886.

Dr. Robert C. Hutchinson, surgeon of the S. S. *St. Louis* of the American Line, died of pneumonia on February 27 and was buried at sea. He was forty-nine years old and was graduated from the Medical Department of the University of Pennsylvania twenty-five years ago. He practised in Trenton, N. J., until eight years ago, when he took up a sea life for health reasons.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

DR. CHALMERS ON INFANTILE MORTALITY—CANCER OF THE STOMACH—PREVENTION OF PHTHISIS—HOSPITAL LETTERS—ALCOHOL AND IRRESPONSIBILITY.

London, February 16, 1906.

Dr. A. K. Chalmers, Medical Officer of Health for Glasgow, has been investigating the history of infantile mortality by means of statistics which he has collected, extending over the last half century. He read a paper on the subject last week in London. From the tables he presented it appeared that the mortality increased largely at the early part of that period, then met a check and recently revived. The causes were diverse; some were hereditary, and therefore outside the influences of administrative supervision. The contrasts shown by the figures were great, the mortality being higher in some of the smaller Scottish towns than in populous centers. A very instructive table showed the infantile mortality in Glasgow during two years of each decade from 1870 to 1902. Earlier figures were not reliable, and doubt as to the correctness of some later returns may be felt, especially as to such diseases as those returned as digestive, nervous, and tuberculous. A large number were ascribed to immaturity. Dr. Chalmers thought artificial feeding chiefly due to poverty, and suggested that not a few doctors did not understand the conditions applicable to the feeding of infants. As to the use of sterilized milk, he said doctors were divided on the problem, or as it might be called, the conundrum.

The surgical treatment of cancer of the stomach was the subject of a paper at the Clinical Society by Mr. Moynihan. It was based on 50 operations, viz., 35 of gastroenterostomy with 5 deaths; 10 of gastrectomy, 3 deaths; 5 of gastrotomy, no death; 3 of jejunostomy, no death, 6 of exploratory laparotomy, 1 death. He considered gastroenterostomy indicated when an irremovable growth caused pyloric obstruction, but when there was no such hindrance at the outlet the relief was not commensurate with the risks. In suitable cases it prolonged life and let the last weeks be passed in tolerable comfort. As to gastrectomy, improvements in technique permitted a wider range of cases than formerly, not only for cure but even as a palliative. In the five cases of gastrostomy the growth caused obstruction at the cardiac end. Jejunostomy, he said, was adapted for cases in which gastroenterostomy is impossible, by reason of extensive involvement of the stomach and gastrectomy, contraindicated by secondary deposits. It may prolong life for a brief period, sometimes very important. As to exploratory operations to confirm diagnosis, Mr. Moynihan declared they were not, as some fancied, devoid of risks. When close scrutiny and handling of parts is necessary for diagnosis they may be done, but when the insertion of a finger suffices the clinical diagnosis needs no corroboration. The frequent evidence of cancer at the pylorus and the regular invasion of the curvatures were facts well brought out in his series. He believed a diagnosis between pyloric and prepyloric cancer was often possible by careful attention to the onward march of symptoms. A previous history of gastric ulcer had been noted in twenty-four out of thirty-nine cases examined on this point. He observed that both ulcer and cancer affect the same portion of the stomach wall, and thought chronic inflammation might be a precursor here as in other parts of the body. The insidious nature of the disease rendered early diagnosis difficult, but he hoped more careful application of clinical methods would lead to earlier recognition, and that the surgeon would be more often called to *make* a diagnosis rather than to *confirm* one arrived at by waiting until too late.

Mr. Mayo Robson, who had operated on 120 cases, also urged the importance of early diagnosis. He was rather in favor of exploratory laparotomy, and thought the risk not great if done early enough. He would advise it when medical treatment was of no avail in a few weeks.

In reply to questions by other speakers Mr. Moynihan said he always removed the growth straight away whenever possible, without a preliminary gastroenterostomy, unless the patient was very weak. In over 50 per cent. of his cases ulcer had been diagnosed years before cancer developed. In his opinion chronic dyspepsia was generally due to ulcer, vomiting being rare and hematemesis more rare still. Hospital records he considered unreliable unless the point had been specially looked for. He never did enteroanastomosis, as in his operation it was impossible, as the upper end of the opening was more than an inch below the duodenojejunal flexure. He used clamps, as they saved time. He removed all glands, whether obviously cancerous or not.

The association for the prevention of consumption is issuing a memorial to every public authority, directly or indirectly reponsible for the public health, urging them to exercise all powers vested in them for checking preventable disease. It is pointed out that the chief problem is the destruction of expectoration, and to secure that all phthisical patients, at every stage, should be under supervision and instructed as to the danger to themselves and others arising from the sputum. They should be surrounded by proper precautions, or, if necessary, removed and isolated. But such a task is beyond the power of any single authority, and requires the cooperation of all medical officers and municipal authorities. Voluntary notification has been tried in eighteen out of the twenty-nine London boroughs, and in Manchester, Liverpool, Brighton, and other towns, and has been, it is declared, very successful. It is compulsory in Sheffield, but this may be thought an extreme measure by some, and so it is suggested that it need only be obligatory on Poor Law doctors, and perhaps in hospitals and dispensaries. Recommendations for the domestic isolation of advanced cases and for institutional isolation are made, and it is said in them municipal forethought and energy would find an opportunity of effectually controlling dissemination of consumption. For early cases, sanatoriums might be provided, but these require time and money. Meanwhile, effective supervision of advanced cases is urged.

Tuberculosis follows in the train of poverty. Better housing, food and other improvements of the lot of the poor are advocated, but the complete attainment of all needs means the abolition of poverty and a revolution in the habits, character, and inclinations of the poorest classes. Improvidence, self-indulgence, want of cleanliness, and so on, all tend to poverty and disease. But though poverty, vice, and shiftlessness cause consumption, that disease in turn causes poverty. Out of 4,000 consumptive paupers under Dr. N. Raw of Liverpool, 60 per cent. became poor because they were phthisical. The national association urges that protection against consumption is as much a duty of sanitary authorities as against typhoid fever, and every precaution taken is also antagonistic to all infectious diseases, and conduces to the health and vigor of the community.

The Charity Organization Society has a special meeting on Monday to consider the question of Hospital Subscribers' Letters of Recommendation. Mr. Nelson Hardy read a paper on the subject in which he maintained that the system was condemned by all medical authorities. In 1896 the Hospital Reform Association recommended

its abolition, and since then the British Medical Association has passed a resolution in the same sense. The Sunday and Saturday Funds receive a proportion of letters. On the other hand, King Edward's Fund requires no such return from participating institutions. Inability to pay for adequate treatment should be the only qualification for hospital help. Obscure or interesting cases might be sent with a note from the local practitioner when a consultation fee could not be paid. The chief difficulty of any such arrangement is the overcrowding of the out-patients' departments with slight cases which ought to be treated elsewhere. General practitioners are ignored by the hospitals and by too many of their staffs, and the injustice is a trying one. Moreover, the hospitals too often become direct pauperizing influences. There was some discussion of Mr. Hardy's paper in which Drs. Tirard, and Latham, and Mr. Owen expressed more or less agreement as to the abolition of letters, while Sir E. Currie and Mr. Chapman had doubts as to whether it would be possible to abolish letters, and whether the absence of the out-patients' departments was as bad as represented. They deprecated haste and urged further inquiry before coming to a decision.

On Tuesday evening Dr. F. S. Toogood gave an address at the Medico-Legal Society on "Alcoholism and Irresponsibility." The principle of the liberty of the subject had, he said, become in this country, a perfect fetish, and the fear of curtailing his freedom of action let a man inflict the direst injuries on himself and those dependent upon him. The danger of the community to-day was not that sane persons should be confined in asylums, but that insane persons could retain their liberty and involve their families in financial and social ruin. The dread of legal proceedings made doctors reluctant to certify until the facts were so marked as to convince a common jury. Dr. Toogood argued that it ought to be impossible for an inebriate to obtain drink. At present no relief can be obtained by a drunkard's relatives. An ordinary alcoholic was morally, though not legally, of unsound mind, but he did things under the influence of the drug which if done in his sober moments would effectively brand him as insane. The State has admitted the principle of compulsory restraint in the Inebriates' Act. It should make that statute of use by removing the necessity of the inebriate's consent and substitute a form of judicial inquiry.

MEDICAL EDUCATIONAL NEEDS IN KOREA

To the Editor of the Medical Record:

Sir:—Medical fees in Korea depend upon the result of treatment, as in China. No cure, no pay. Improvement in condition is held to merit a moderate recognition on the part of the patient or his friends. Full cure is followed, sooner or later, usually quite promptly, by a gift of rice, eggs, poultry, nuts, fruit, seaweed, or other eatables in quantity according to the circumstances of the family and the service rendered; a money consideration, a pig or two, perhaps so much as a bullock being added in many cases. A prescription of forty ingredients naturally enjoys more popularity among physicians than one of ten, since it commands a higher price, and the doctor is his own druggist and usually gathers many of his own drugs from the three kingdoms of nature. His surgical case contains only a few blades and needles of four-inch length, never washed, always rusty and clotted with the secretions from earlier operations. Commonly they are heated red-hot when used.

This is not an atmosphere congenial to a young doctor educated in an American medical college, nor is he likely to find himself able to exact payment of his bills without regard to the success of treatment. In a country where day's wages range below fifty cents and chairs and bedsteads are a luxury for the very wealthy, a man trained abroad would find medical practice decidedly uphill work.

It is for these and other reasons that it is held necessary to educate in their own country the young men who, in considerable numbers, are now anxious to form Korea's first generation of scientifically trained physicians. The missionary doctors in three or four recently built hospitals are taking hold of the problem and giving to some twenty or thirty such aspirants the best instruction possible with the time and facilities they have at command.

Text-books in the vernacular are indispensable. Dr. O. R. Avison has translated parts of Grey's Anatomy, and has prepared elementary works upon chemistry, physiology, materia medica, and surgery. Botany, practice, obstetrics, and nursing, are subjects that have been taken up by other workers. For lack of funds some of these manuscripts are being duplicated on the mimeograph. That they should be printed and so made serviceable, not alone to the young men under training now in hospitals, but to a coming generation of pioneers of medicine in Korea is a very important ma
interested. It seems a small th
these books should be provided for
America. A committee has been org
pose of receiving funds for this object.
bers are Drs. W. W. Keen and H. Au
Philadelphia and Dr. R. W. Lovett of Bo

C. C.

East Orange, N. J.

OPEN-AIR TREATMENT OF PN

To the Editor of the Medical Recor

Sir:—Several years ago I read somewh
well-known New York physician (I do not r
said that if he had pneumonia, he would rat
in one of the city parks than in any hospit
The statement has been in my mind ofte
and has helped me to work toward what I consid
pretty sure cure for pneumonia, and if the future proves this to be correct, then what an army of pneumonia patients have died, who might have been saved! Last winter and this I have been treating my pneumonia patients with wide-open windows, but have had some heat in the room also. I keep the windows open in zero weather, both day and night, also when it storms, in fact, all the time until the fever falls. Last winter, during a little blizzard the mother of a young man, sick with pneumonia, closed the window to keep the snow from blowing into the room. The patient at once found difficulty in breathing and insisted on having the window kept open.

I have treated five cases in this way, and all recovered; but it is to describe the treatment adopted in the last case that I write this letter. The patient was a mechanic, aged forty-two years. He had been working from twelve to fifteen hours a day repairing machinery, and to keep going he used liquor very freely. I found him in a very nervous, cyanotic condition, panting for breath, pulse high and jerky, temperature over 104°, respirations irregular, between forty and fifty. Owing to his condition, I thought he had only one chance in ten to recover. The whole right lung was consolidated. I had his bed moved alongside of and close to an open window. I put a quilt from the top of the window to the farther side of the bed, thus making an awning of it, and practically putting the patient's head and chest out of doors. During the night the temperature was down nearly to zero. I covered the affected side of his chest with one of the kaolin preparations. On the fourth day the pulse and temperature fell to normal; the respiration remained high until after the ninth day, but fell slowly during the time. Resolution followed the usual course, but the pulse and temperature remained normal or nearly so.

G. Fred. Pitts, M.D.

Warwick, N. Y.

Progress of Medical Science.

Boston Medical and Surgical Journal, March 1, 1906.

Photophobia: a Nasal Reflex.—Edmund D. Spear says that the eye is automatically protected from injury from exposure to bright light, and that it is not the eye alone which produces the symptom-complex known as photophobia. It has been shown that there is a relationship between the so-called erectile tissues within the nose and similar tissues about the ciliary region of the eye. It is a common experience to have a bright light induce sneezing, but the eye is not the real source of the irritation which produces the sneezing. The eye serves to carry the impression to the nerve center; this is transmitted by the sensitive filaments of the fifth nerve in the nose, especially the region above the turbinates, and is sent inward again through connecting ganglia to motor nerves which terminate in the thoracic muscles. The author reports a case of a bell-boy in a hotel who was obliged to await calls in front of a row of arc lamps. He suffered great distress in the eyes. Examination revealed no ocular trouble, but there was obstruction throughout the middle nasal fossa by hypertrophied turbinates. Treatment directed to this part finally relieved the photophobia. The author contends that when light causes one to blink or wrinkle the forehead, the nose is often at fault rather than the eyes themselves.

New York Medical Journal, February 24, 1906.

The Treatment of Joint Tuberculosis in the Open Air in a City Hospital.—R. A. Hibbs refers to two cases of spinal disease with discharging abscesses, both of which steadily deteriorated while in the wards of the hospital. They were then transferred to beds on the roof of the hospital

located on one of New York's densely populated streets, being brought to the ward only a short time each day for the dressing of the abscesses, etc. The change to the roof was at once marked by a vast general improvement in every way. They are still seriously ill, but the author declares that the change has transformed their condition from one of hopelessness to one in which the chances of ultimate recovery are immensely better.

Prostatic Albuminuria.—E. G. Ballinger declares that this form of albuminuria is a not infrequent cause of error in the diagnosis of the so-called orthostatic postural, physiological, and cyclic albuminuria. He concludes that the secretion from an hyperemic or an inflamed prostate is albuminous, while that from the normal gland is not, or is present in such a small quantity that, unless the seminal vessicles are massaged, the urine passed will not give the tests for albumin. This is apparently a constant symptom of chronic prostatitis and may be depended upon in the diagnosis. The periodic increase in the prostatic discharge, along with the striking similarity between the symptoms of intermittent, postural, orthostatic, and cyclic albuminuria, and prostatorrhea makes the possibility of mistakes in the diagnosis extremely likely when this fluid flows back into the bladder and does not appear at the meatus. This regular increase every ten to thirty days, and the analogy between the uterus and the prostate, suggest a relation between the causes of this condition and menstruation.

Rheumatic Fever.—J. V. Shoemaker discusses the etiology and treatment of this common malady. He does not believe that it is, properly speaking, an infectious malady. Although in many instances infections with several forms of pathogenic bacteria may occur, this septicemia is secondary, accidental, and not incidental. Typical cases may occur without it. The blood in acute articular rheumatism is sterile. It may be that certain products of the muscles are a proximate cause of the disease. As to remedies, the author prefers salicin supplemented by local applications of wintergreen oil, the joints being enveloped in cotton and bandaged with flannel. He condemns the use of salicylic acid and all the coal tar derivatives. For accessories he has found the alkalies very useful, especially the citrate of potash in the liquor ammonii acetatis. Some iron preparation is generally required. This may be given separately, as the tincture of the iron chloride or some of the newer combinations, or it may be given at the same time as the alkalies, in the form of Basham's mixture, liquor ferri et ammonii acetatis. When the pulse is rapid and the heart action weak, it is advisable also to combine strychnine with the preceding; or the infusion of digitalis may be given internally, combined with the alkali (such as potassium citrate or sodium bicarbonate) and the strychnine may be given hypodermically, at suitable intervals. For the hyperpyretic cases cold affusions or the cold bath give the best results. The bowels must be kept open, and as the tonsils are doubtless the site of entry of infectious organisms, an antiseptic mouth wash should be freely used. The patient is allowed a moderate amount of food, broths, toast, butter, weak tea or coffee, and an occasional egg. All articles liable to ferment in the stomach should be withheld. Meat is allowed only after the decline of the fever when convalescence seems assured.

Cholecystectomy.—J. F. Erdmann reports twenty-seven cases, analyzing their symptoms and describing the technical details of the operation. Of the entire number all but two recovered. One death occurred in a man of 27 years with thirty-three stones in a distended and elongated bladder, containing typhoid bacilli in the bile, complicated with a diseased appendix containing eleven concretions. The second death was in a man who vomited black matter after the operation. The appendix was removed in sixteen out of the twenty-seven cases. Eight had gangrene of one or more coats of the bladder. The indications and contraindications for the operation are enumerated by the author as follows:—Indications: Perforations by trauma; ulceration other than due to abscess or gangrene (see case of typhoidal perforation); obliteration, or stricture of the cystic duct; chronic cholecystitis with thickened walls; atrophy; gangrene; acute suppuration; enlargement by dilatation; these latter are usually due to either calculus obstructions, strictures or angulations of the bladder, etc.; marked adhesions; hourglass contractions; chronic or recurring cholecystitis, or cholelithiasis and malignancy. Contraindications: Apparently healthy bladder in cholelithiasis and pericholecystitis; perforations into other viscera, when difficulty of closure of the anastomosis is great; perforations in the suppurative variety when adhesions are extensive, and where life would be jeopardized by such radical interference; malignancy when extensive, and those cases where hurried operation is indicated to save life.

Some Difficulties of Diagnosis and Operation in Diseases of the Biliary Tract.—W. P. Carr states that when choleystitis is present in early cases with no obstruction of the bile ducts there are but two symptoms of diagnostic value, pain and tenderness in the region of the gall bladder. Physical signs are usually wanting. Tenderness is of more significance than pain. We are obliged to exclude disease of the stomach, pancreas, liver, pleura, kidney, and appendix and superficial inflammation of the abdominal wall or ribs. The various differential points are enumerated, but in certain affections of the pancreas, liver, and appendix, a preoperative diagnosis is impossible. The greatest difficulty arises in those cases in which disease coexists in two or more of the organs enumerated. Cholecystitis and pancreatitis are often associated as are also cholelithiasis with chronic appendical disease or cancer of the gall-bladder. Carr does not believe that it is possible for the surgeon to ssure himself of the patency of the common bile-duct without opening the duodenum. Excision of the gall-bladder under such circumstances would be unfortunate unless we were assured of the patency of the common duct, and it might prove fatal unless drainage of the duct was provided for at the time. Even if the common duct is open at the time of operation it may become obstructed at some future time in such a way that the obstruction cannot be removed and the gall-bladder will then be of great value for draining the bile into the intestines. Only when malignant disease of the bladder exists is cholecystectomy, in the author's opinion, justifiable.

American Medicine, March 3, 1906.

Cause of Epilepsy.—Otto Lerch advances the theory that the basis of epilepsy is a diseased brain, congenital or acquired. He thinks that the large number of patients in whom a neuropathic constitution and epilepsy can be directly traced, the character of the diseases that cause it, and the large variety of lesions that are found in the epileptic brain prove this proposition. The same train of symptoms occurring under the most varied conditions in patients of all ages uninfluenced by sex, climate, and disease, calls for one direct cause to produce the attack, and this he takes to be congestion and edema. The widely accepted theory of autointoxication he considers with the rest of etiological factors as a remote cause producing congestion and edema.

Chronic Urethritis and an Improved Method of Applying Medication to the Urethra.—E. G. Ballenger says the worst complication that is likely to follow a chronic urethritis is a stricture, consequently this should be borne in mind during the entire treatment. The pathology is essentially a chronic inflammation of the subepithelial tissue (and especially around the follicles) which passes through two stages, that of infiltration and that of contraction. The most rational method of forestalling a stricture is by the treatment of these conditions with the medicated sounds. The ointment may be massaged into the follicles and depressions where the germs are protected from irrigations and injections. The exudation thrown out around these follicles is frequently the starting-point of a stricture. No other single treatment combines so many beneficial factors, *i.e.* dilation, cold, massage and medication uniformly applied to the entire membrane and depressions. The extensive nervous connection and the widespread symptoms that result from injury or disease of the prostatic urethra justify its being called the solar plexus of the pelvis, and many vague, indefinite pains, symptoms, and sexual weakness may often be relieved by the proper medication of this part of the urethral canal.

The Practical Side of Mosquito Extermination.—Henry Clay Weeks discusses the scientific basal work of the entomologists and others; the origin of the practical phase of extermination; the persistency of visionaries; the spread of the idea to large engineering operations; its relation to malaria and yellow fever, its bearing on economic questions such as property values, taxation, scenic improvement, betterment of the poor, etc. He gives illustrations of progress and relief, the success in the New Orleans epidemic from mosquito work and at Panama by Asst. Surgeon Gen. Dr. Gorgas, comparison with other public works in needs, cost, and importance. The reclamation of the Roman Campagna, the outgrowth of the American Mosquito Extermination Society.

Effect of Posture on Cardiac and Vascular Murmurs.—R. D. Rudolf calls attention to the marked effects of posture upon cardiac and vascular murmurs, some of these only being present in certain postures while others are louder in one position than in another. Thus the venous hum, heard in the root of the neck in cases of anemia and various conditions of lowered vasomotor tone, is often only audible when the patient is vertical, while the arterial bruit is often only heard when he is recumbent. As regards cardiac murmurs, it may be generally stated that all systolic ones, if altered at all by posture, are louder in the recumbent than in other postures. Murmurs occurring at parts of the cardiac cycle other than the ventricular systole, if altered at all by posture, are louder in the vertical

than in other positions. The murmurs chiefly affected by changes in posture are the so-called "functional" ones, which are always systolic, and the chief one of which occurs in the second and third intercostal spaces close to the sternum, but posture often has considerable influence upon those due to organic disease. The manner in which posture effects these changes is discussed, and the conclusion is reached that the results are brought about chiefly through the influence of gravity. Dr. Rudolf urges that in every case in which it is considered necessary to auscultate the heart or vessels, this examination should be conducted in both the recumbent and vertical postures; and says that in the description of any heart murmur it should always be stated what postures the patient was examined in when the murmurs were of the nature described.

Journal of the American Medical Association, March 3, 1906.

Goundou and Ainhum.—F. C. Wellman reviews and criticises the various theories of the causation of goundou and ainhum. As regards the former (the African dog-nose disease), he rejects all the theories that have been advanced—that it is due to syphilis or yaws, to atavism, to bony malformations, and to larvæ, all of which, he says, are based only on conjecture. The tumors are doubtless a hyperplasia, probably due to an osteoplastic periostitis with a very definite cause not yet demonstrated. As regards ainhum, he says that no definite and undisputed cause for the lesion has yet been proved, but he thinks that there is most to be said in favor of da Silva Lima's view that it is due to traumatism. The splay-footed negro is especially liable to such, and the groove around the toe in this disease, both macroscopically and histologically, is a cicatrix. The later fatty and atrophic conditions in the amputated toe are not yet fully explained, but may depend on local cicatricial formations or may be of trophic origin.

Tuberculosis and Patent Medicines.—G. R. Pogue thinks that our therapeutic nihilism and teaching that only outdoor treatment is effective for tuberculosis has had a bad effect and has driven many victims of the disease to the use of patent medicines. He was recently told by a prominent pharmacist that while the sale of patent medicines had notably fallen off, he still sold large quantities of certain of them to consumptives. Climatic resorts to which consumptives flock are a bonanza for the advertising quack and patent medicine vender whose stock argument is that physicians admittedly have no cure for the disease as compared with their unfailing panaceas. The poor consumptives are only too ready to grasp at any straw, hence they fall readily into the hands of these quacks. Our therapeutic nihilists, as regards consumption, could do better, Pogue thinks, if they would turn their talents in some other direction when they write for the information of the laity.

Surgical Repair of Injured Nerves.—J. S. Horsley discusses the pathology of nerve degeneration after injury and the regeneration that takes place, especially after surgical union of divided nerves. He holds that, while early operation is advisable in some cases of crushing injuries or when suppuration has occurred, or where there is compression from a callus or a tumor, no operation for nerve suture should be abandoned because of the length of time that has elapsed since the trauma. Cases have been reported in which many years have elapsed between the injury and its surgical repair. He reports at length an interesting case of nerve implantation for complete traumatic paralysis of motion in the forearm except in those parts supplied by the ulnar nerve, and of sensation except in those parts of the skin supplied by the ulnar and musculocutaneous nerves. Two operations were performed, both in the upper arm, with an interval of more than a year between them. In the first operation the median nerve was united to the ulnar, marked improvement following; in the second, the musculospiral nerve was united to the median and fairly good restoration of function resulted. Trophic disturbances, ulcers, and crumpling of the nails of the middle and index fingers appeared, but disappeared after the second operation. The special features of the case are discussed; the facts indicate an anomalous nerve supply for the extensors of the forearm, either a high bifurcation of the musculospiral or a free communication between the anterior interosseous of the median with the posterior interosseous of the musculospiral. The trophic disturbances on the fingers are attributed to an anomalous distribution and partial degeneration of the radial nerve. The article is illustrated.

Spinal Anesthesia by Magnesium Sulphate.—Referring first to the work of Meltzer and Auer on the anesthetic action of magnesium salts, published in the MEDICAL RECORD of December 16, 1905, H. A. Haubold and S. J. Meltzer relate the histories of seven cases in which magnesium sulphate was employed, in solution, by intraspinal injection to produce surgical anesthesia. The authors say: "As far as seven cases permit any conclusions, the following statements may be made: Intraspinal injection of magnesium sulphate is capable of producing anesthesia, and, if carried out with caution, seems to be a safe anesthetic. The following plan would seem the best, at least for the present: To inject about 1 c.c. of a 25 per cent. solution of magnesium sulphate for every 18 or 20 pounds of body weight and wait about two hours. It is probable that by that time the analgesia will be sufficiently advanced to permit the performance of an operation on any part of the lower half of the body. A small dose of chloroform, however, should be administered to divert the patient's attention and to hasten and complete the anesthesia. Immediate washing of the spinal canal should follow the operation in all cases." Further experience will be needed before it is possible to say whether or not the method will serve for general anesthesia in operations on the upper half of the body. The necessity of having the salt chemically pure and the solutions sterile is self-evident.

The Lancet, February 17, 1906.

A Case of Persistent Aberrant Thymus.—The patient of E. W. Sharp was a woman of 22 years who had had a swollen neck for eleven years, the swelling extending from beneath the posterior border of the sterno-cleido-mastoid muscle to the anterior border of the trapezius and passing behind the clavicle. It was removed with some difficulty, owing to adhesions and an extension by a fibrous pedicle into the left posterior cervical triangle. The mass removed was about the size of a potato and had the gross structure of a lobulated gland. The microscope revealed it to be the thymus. The author can find no record in literature of a thymus thus situated. There were no signs of malignancy found, but merely a general hyperplasia of the structure.

A Saccular Dilatation of the Small Intestine.—In a female infant five weeks old with a tumor on the right side of the umbilicus and general stomach and bowel disturbance resulting in death from asthenia, E. Cantley found on autopsy a cyst immediately below the liver, and considerably larger than a normal stomach. It lay in the mesentery and arose from the bowel at a distance of fifteen inches from the pylorus. It communicated with the bowel by two openings. The duodenum and a small part of the jejunum above the origin of the cyst were much dilated and hypertrophied, while below the intestine was thin-walled and collapsed. Opposite the cyst the lumen of the canal seemed somewhat narrowed from pressure, but there was no true stricture. Both cyst and intestines contained normal bile-stained contents. Microscopically, the wall of the cyst was identical with that of the intestine from which it arose, the muscular tissue being considerably hypertrophied. The author admits that the child might have been saved by surgical measures, but he did not feel justified in recommending an operation.

Pneumothorax Due to Muscular Exertion in a Healthy Lad.—W. G. Nash reports the case of a boy of 18 years, who, while stooping over during a football game, felt a severe cramp in the right side of his chest, just below the nipple. It was supposed that a rib had been broken. He had much pain and considerable dyspnea. It occurred to the author that the symptoms might result from lung rupture, as he was able to exclude rib fracture. Four days later all the signs of pneumothorax had appeared. Later the air was drawn off with an aspirator, and the patient recovered without incident. In this case there was no suspicion of tubercle, and there had been no illness likely to cause an emphysematous condition. Moreover, the severity of the symptoms at the outset pointed to a more severe lesion than the rupture of an emphysematous bleb. In the author's opinion the accident resulted from a superficial rupture of the lung near its lower anterior margin. A lung distended from violent exercise, as was the case here, would be more easily lacerated than an empty one. When any part of the lung is suddenly compressed it may burst. In this particular instance it is possible that the engorged lung margin was probably squeezed between the diaphragm lying over the liver and the anterior chest wall. Nash is not an unrestricted advocate of aspiration in most cases, though it was done here. The risk of sudden death from puncture of the chest he does not regard as a negligible quantity.

A Method of Removing Carcinoma of the Ascending Colon.—In the method recommended by F. D. Bird, the abdomen is entered through the sheath behind the rectus internal to the linea semilunaris. The tumor is located, the transverse colon is pulled down and severed between two forceps. The branches of the middle colic artery are secured. This devascularizes a considerable portion of mesocolon which can be quickly severed. Forceps are then placed on the ileum four inches from the junction of the gut with the large intestine, and the gut is divided. The distal end now depends from the wound, so that the whole portion to be resected is hanging by the ileo-colic

artery and some peritoneum. This blood-vessel is ligatured far back, the isthmus of tissue left is divided close to it, and the resected gut, two forceps, and the ileo-colic glands fall out of the wound all together. There is no need to investigate the important ileo-colic lymphatic area, for it has gone, but the mesocolic region should be examined for glands which may have escaped the section. Thus four, or at most five, arteries have to be tied; the transverse colon is divided at right angles to its lumen, but the ileum, if it approaches the caliber of the colon closely enough to allow of apposition, is severed in a direction obliquely downwards to the mesenteric attachment, which, of course, increases the size of the open end. If the disproportion be too great the ileum is also separated at right angles, the patent lumen to be afterwards applied by means of temporary sutures to an incision proportionate in length in the fundus of the colon about two inches from the gaping end, through which the stay ligatures are pulled, reversing Maunsell's method, and the new ileo-colic junction is quickly made by through-and-through sutures, to be reinforced after the ileum is pulled back by a continuous Lembert suture. The end of the colon being closed, the operation, but for ordinary detail, is completed.

British Medical Journal, February 17, 1906.

Some Abdominal Disorders which Resemble in Their Symptoms Acute Intestinal Obstruction.—After an enumeration of the classical features of acute intestinal obstruction, G. Heator declares that they may be simulated by the following conditions, respectively: Biliary or renal colic, perforative peritonitis due to the rupture of a gastric or duodenal ulcer, gangrenous appendicitis or ruptured appendix abscess, tuberculous peritonitis, acute hemorrhagic pancreatitis, torsion of an undescended testis or relation of an ovarian cyst, rupture of an ectopic gestation, and embolism or thrombosis of the superior mesenteric vessels. Illustrative cases are given under several of these headings. The author notes that the intestinal walls are so delicate and their nervous supply so intricate that any interference with their vascularity or the free flow of their contents may in a short time produce such pathological changes as almost to preclude restoration of function, even though the cause of the trouble may be removed. Hence comes the urgency of a rapid and accurate diagnosis. We cannot "watch the case," and so deliberately decide upon the preferable course to pursue. Therefore mistakes in diagnosis not infrequently occur, and one must often adopt measures based upon what is at the most but a provisional opinion rather than run the risk of allowing an acute obstruction to remain unrelieved.

Stagnation of Food in the Stomach.—A. McPhedran discusses some of the questions bearing on the relation between gastric and intestinal digestion. It is now known that under the stimulus of the acid of the chyme the duodenal mucosa elaborates a substance which is the stimulus causing the pancreas to pour out its peculiar ferment. As soon as the chyme is neutralized the secretive elaboration is checked. Duodenal peristalsis has by this time carried it on into the small bowel. Then the pylorus relaxes to allow more chyme to pass through, and the process above outlined is repeated. The chymification of an ordinary meal requires from six to seven hours. When this is delayed we have one of two conditions at work: First, deficient gastric expulsive power, or, second, abnormal difficulty of the passage of food through the pylorus. Probably the most common cause of deficient expulsive power is the overloading of the stomach with food; especially food not properly masticated. Those who thoroughly chew their food rarely overeat. Pyloric obstruction may be spasmodic or organic. The only positive symptom is vomiting; all the others are indefinite. Treatment calls for recognition of the main principle that the stomach must empty itself within the normal period. This implies the careful regulation of dietetic hygiene, especially the ingestion of food proper in character, and always thoroughly masticated. Baths, douches, compresses, and massage are all valuable adjuvants. Drugs are of little use. Bitter tonics and stimulants often aggravate the condition. Sedatives and antiseptics are preferable. Shontium bromide has proven of especial value. The natural sodium salicylate is also of service. In cases due to pyloric obstruction we should not be too hasty in resorting to surgery. We should make an effort to lessen the acidity by giving a liquid or very soft diet free from particles and irritants, and the use of antacids for the relief of pain and the lessening of excessive acidity. Regular lavage should be done for a time if there is material retention, and, after emptying the stomach, some sedative, as bismuth subcarbonate in full doses, may prove useful. Large doses of pure olive oil are often of benefit in soothing the stomach; they have the effect, also, of lessening the secretion of acid (Pawlow). If necessary, rectal feeding may be depended on for a short time, and then a gradual return made, first to a liquid diet, and later to solid food.

Obstruction of the Bowel Produced by the Appendix.—The patient of R. W. Leeming and M. I. Dick was a boy between four and five years of age with evidences of bowel obstruction calling for operation. The small bowel was traced to the seat of obstruction, but this point was fixed and the gut could not be followed up further. The median incision was extended to above the umbilicus when the part between the distended and collapsed bowel was found. In this position, on one side of the bowel, was a tumor about the size of a walnut, white, and apparently full of fluid. On the opposite side was a narrow piece of bowel apparently knotted to the small bowel. A careful examination showed that the narrow piece of bowel was the appendix, which had passed over the bowel itself and then through a hole in the mesentery, and the white tumor was the constricted end full of secretion, etc. The end of the appendix was removed and the obstruction cleared. The patient, however, unfortunately sank from shock.

Antidiphtherial Serum by the Mouth.—A. M. Pilcher has the greatest confidence in the oral administration of this remedy, provided there is no violent urgency present at the time. The stomach must be empty and vomiting absent. A list of thirty-eight cases is tabulated, all but two of which gave prompt results. In one the administration was apparently without effect, though the child recovered. In only one instance was this method supplemented by that of injection, laryngeal symptoms having come on suddenly during the night.

Berliner klinische Wochenschrift, February, 12, 1906.

Parasites in the Blood of a Case of Yellow Fever.—Schüller rehearses the long list of parasites which different observers have described as occurring in the blood of this disease and adds a fresh one of his own to the number. The material he worked on consisted of two slides sent to him from the New Orleans epidemic at the instigation of Dr. Wyman. The author notes that the average size of the red corpuscles of the yellow fever blood was increased to a diameter of from 8-10 μ. In addition considerable numbers of especially large red corpuscles were found which exhibited irregular, thin edges. Other peculiarities in color and conformation of the erythrocytes are also noted but the author's most striking observation is concerned with the identification of certain bodies which he considers may be regarded as parasites belonging to the sporozoa. He describes and illustrates many different phases in the life history of this putative organism, and asserts his belief that the sporozoites or merozoites of the parasite invade the red corpuscles and either destroy it directly or after further stages of development of the organism have taken place in the interior of the cell. The organisms appear to be present in the leucocytes also. Spirochetes, which do not, however, resemble those of syphilis were also found in the preparations, but the author does not draw any conclusions from their presence.

Münchener medizinische Wochenschrift, February 13, 1906.

A Clinical Test for Fat in the Feces.—Hecht describes the following procedure for making quantitative determinations of the fat in the feces. About 10 c.c. of the stool are placed in a wide-mouthed flask of about 300 c.c. capacity and a small piece of potassium hydrate and enough water to cause liquifaction are added. The flask is then warmed on the water bath, and after ten minutes about 100 c.c. of 96 per cent. alcohol are poured in and the heating is continued for twenty minutes longer. A funnel placed on the flask serves as condenser. The mixture is acidified with concentrated hydrochloric acid, using as indicator a few drops of a 1 per cent. alcoholic solution of alkali blue, and is filtered into a porcelain dish, the filter being washed with a little additional alcohol. The alcohol is then driven off on the water bath, which takes about an hour, and the residue is dissolved in as little ether as possible and is filtered into a special flask which is so made in two parts, the upper of these being a narrow graduated tube. The ether is evaporated by heat and enough hot water is poured into the flask to cause the fatty acids to float up into the graduated portion of the tube where the amount of fat may be directly read off from the scale.

The Production of Satisfactory Milk for Infants and Invalids.—Hempel describes the methods by means of which it has been found possible at a special dairy to produce regularly milk having only about 1,600 bacteria to the c.c. This is effected by the most scrupulous asepsis in every detail of its collection. The cows are milked in a separate building having no connection with the stable, the animal's tail is tied out of the way, its abdomen is covered with a large apron of linen which leaves only the udder exposed, the milker wears a clean suit of white linen, and the udder is always washed before each milking. The milk is received in a sterile funnel placed in a covered sterile tin bucket. The author considers it of importance not to shake the

milk at any time, as this would tend to break up any existing colonies of bacteria, thereby facilitating their multiplication, and he has devised a special form of outlet tube for milkpails, etc., by means of which it is possible to draw off milk of homogeneous composition without any preliminary shaking. The bottles used for distribution are made without sharp angles and are closed with ground-glass stoppers; they are sterilized before use, and immediately after filling are cooled to 5° C. The author points out the changes in the point of view in regard to milk which have taken place since it has come to be recognized that sterilized milk is very inferior as a food and affords a much more favorable nutrient medium for bacterial growth than is the case with raw milk, and emphasizes the necessity for the further development of the dairy industry along the lines suggested.

The Poison of Eclampsia and Its Effect on the Treatment.—Zweifel relates the theoretical considerations which induced him to take up the investigation of the blood and urine of eclamptics with the expectation of finding sarcolactic acid present in both. Sarcolactic acid is produced in animals subjected to the influence of an atmosphere containing much less than the normal amount of oxygen, but is not present in the blood or urine of healthy human beings or animals under ordinary conditions. The author states that the detection and positive identification of sarcolactic acid in the urine is extremely difficult, but he was able to demonstrate its presence in the urine of eighteen successive cases of eclampsia. Furthermore, on examining placentas and the blood of the umbilical cord, it was found that in seven cases the proportion of sarcolactic acid was greater than it was in the maternal blood. The author points out that this theoretical consideration affords confirmation of the dictum which has already been deduced from practical experience, that the uterus of an eclamptic patient should in every case be emptied as promptly as possible, since it appears that the child is a source of manufacture for the deleterious sarcolactic acid. He also emphasizes the necessity for frequent examinations of the urine during the last three months of pregnancy, and points out that no symptoms such as headache, vomiting, or ocular disturbances should be overlooked. Zweifel does not believe in the use of morphine in eclampsia, and also expresses the view that treatment by hot packs and other sweating procedures is not only useless because it does not eliminate any poison, but is also directly injurious, since it concentrates the blood. On the other hand, bleeding followed by infusions of salt solution or of solutions containing one-half per cent. of sodium chloride and one-half per cent. of sodium bicarbonate represents a very valuable therapeutic measure. Another procedure of great value is gastric lavage. The vinegar of digitalis and the vinegar of squill are also recommended for their effect on the heart and urinary secretion.

Deutsche medizinische Wochenschrift, February 15, 1906

Are the Hemolytic Immune Bodies or Complements Ferments?—Liebermann is of the opinion that the immune body and complement do not belong to the class of the ferments; that is, that they are not substances which bring about reactions between other bodies without being directly concerned in the reaction themselves. He experimented on the hemolytic substances by adding to definite quantities of an emulsion of red blood corpuscles, first, definite quantities of inactivated immune serum followed by increasing amounts of complement, and, second, fixed amounts of complement followed by increasing amounts of inactivated immune serum. If these bodies were ferments in either case the amount of lysis of the red blood cells produced would increase in proportion as the amount of complement or of immune body respectively was increased in the two experiments. By determining the amount of hemoglobin present in the supernatent fluid by means of Fleischl's hemoglobinometer it was found that a fixed degree of lysis was soon reached which was not increased by further additions of the respective substances, so that the author feels justified in concluding that they are not ferments. This observation has a practical bearing of considerable importance in the matter of producing artificial immunity, as if the substances concerned were ferments it would be necessary to introduce only a certain quantity sufficient to induce satisfactory activity of reaction, but if they are not ferments much larger quantities must be used.

The Increased Arterial Pressure of Arteriosclerosis and Its Treatment.—Erlenmeyer attaches great importance in the treatment of arteriosclerosis to the reduction in the viscosity of the blood following the use of potassium iodide. This drug, by diminishing the frictional resistance of the blood current, gives rise to better nutritive conditions in the diseased districts, and it is to this property rather than to any reduction of blood pressure *per se* that its value in the treatment of arteriosclerosis must be ascribed. The author is in accord with the view of Krehl, that the rise of arterial pressure in arteriosclerosis may be the result of an attempt of the organism at self-treatment in the sense of its opposing the influences causing the disease. In cases of arteriosclerosis in which an increase of arterial pressure cannot be demonstrated its therapeutic increase is carefully to be effected. In doing this carbon dioxide brine baths at a temperature of 30° C. or less, are to be recommended. In cases with moderate increase of arterial pressure the viscosity of the blood should be reduced by progressively increasing amounts of potassium iodide continued over long periods of time. If the rise in blood pressure is great, small repeated phlebotomies must be resorted to in order to avoid the danger of vascular rupture, while at the same time the potassium iodide treatment is being begun.

Antefixation of the Uterus and Protracted Gestation.—Ahlfeld, who himself does not very often carry out ventro- or vaginifixation of the uterus, cites two cases of his own as well as a number of others from the literature which corroborate his theory that these operations conduce to an abnormally long period of gestation. Both of the author's own cases had had a ventrofixation done, and the pregnancy of the one extended from the middle of May to the 19th of March, and that of the other from the 26th of March to the 10th of January. In explanation of this tendency to protracted gestation the author suggests that through the abnormal direction of the uterine axis the presenting part is not so effectual in dilating the upper cervical segment as it should be, and as this latter action is supposed to be an important factor in inducing the onset of labor, pregnancy becomes unduly protracted under these conditions. Ahlfeld urges obstetricians attending the confinements of women who have been subjected to operations of this sort to publish data concerning the duration of pregnancy.

French and Italian Journals.

Syphilis of the Liver.—M. J. Milhit declares that the prognosis of hepatic syphilis varies according to the extent of the lesions. The prognosis should be guarded on account of lesions, especially renal, which often accompany and complicate this disease. Specific treatment is indicated,—injections of mercury biniodide associated with large doses of iodide. Certain authorities have advocated the application of a mercurial pomade over the region of the liver. Under the influence of specific treatment, slight congestions and simple jaundice disappear rapidly. In severe jaundice the treatment has no effect. In cirrhosis, considerable diminution in the size of the organ may be obtained. But very often the treatment is powerless to modify the lesion, either because it is too far advanced and the cirrhosis too well organized, or because there exists already amyloid degeneration, or because, perchance on account of secondary infections. The mercurial treatment should be followed up for a long time, and lack of success ought not to be taken as a proof that there is an error in diagnosis. The late visceral manifestations of syphilis are well known to be refractory to specific treatment. Together with the mercurial treatment the patient should be subjected to the régime for hepatic diseases. A prolonged milk diet is of great value. Renal complications may demand special treatment. Surgical treatment should be absolutely rejected.—*Gazette des Hôpitaux Civils et Militaires,* January 20, 1906.

New Technique in Mikulicz Resection of the Tarsus, After Padula.—Vincenzo Marcozzi describes the operation in a case of tumor of the astragalus, in which a modification originated by Padula of the Mikulicz resection of the tarsus was successfully undertaken, the results to the patient being most satisfactory, as he was able to walk well and easily without much of a limp. The patient had a sarcoma of the ankle, which began in the periosteum of the calcaneum, and was propagated to the other bones and to the skin. The conclusions given by the author are these: 1. The operation of Mikulicz is the best that can be used for resection of the bones of the tarsus and lower extremity of the leg. 2. Besides the astragalus and calcaneum, when necessary the cuboid and scaphoid may be removed without destroying the good functional results of the operation. 3. It is indicated for lesions of the tarsus and lower part of the leg, and of the skin and other tissues of the calcaneum when new growth or ulceration prevents healing. 4. The new incision of Padula through the soft parts avoids all the necessary structures, such as veins, arteries, and nerves, and gives the best results as to function. The incision begins at the anterior margin of the external malleolus, passes horizontally backward to the inner margin of the tendo Achilles, is prolonged with a slight lateral inclination down to the base of the heel, passes obliquely across the sole to the outer margin of the foot, behind the tubercle of the fifth metatarsal bone, and rejoins obliquely the original line at its beginning.—*Giornale Internazionale delle Scienze Mediche,* January 15, 1906.

Book Reviews.

Genitourinary and Venereal Diseases. By J. William White, M.D., John Rhea Barton Professor of Surgery, University of Pennsylvania, and Edward Martin, M.D., Professor of Clinical Surgery, University of Pennsylvania. Illustrated with 300 Engravings and 14 Colored Plates. Sixth Edition. Philadelphia and London: J. B. Lippincott Company, 1905.

A colored plate, opposite the title page, showing a number of highly-stained specimens of *Spirochæta pallida*, assures the reader of this new edition of White and Martin's standard work that it has been brought up to date; but the plate is newer than the text, for in the section on Syphilis, there is no mention of Schaudinn's alleged discovery of this spirochete, and nothing on the subject whatever beyond the statement that "syphilis is almost certainly due to the presence in the system of a specific microbe." It would be unfair to demand that a book which came out at the end of 1905 should contain an account of this discovery, for the revision of this part was no doubt completed and in type before anything definite was known regarding it; but this lack might have been supplied by a page inserted with the plate at the beginning of the book. As it is, one is led to expect too much, and is correspondingly disappointed in turning to the text for an explanation of the plate. This, however, is a minor point, and does not affect the value of the work as a thoroughly trustworthy guide in the diagnosis and treatment of diseases of the genitourinary tract. The text is clear and explicit, and the illustrations are numerous and well made. The greatest number of changes in the present edition are to be found, as one would naturally expect, in the section on diseases of the prostate gland. Minor changes have been made in other sections wherever necessary to bring the work abreast of the times and to keep it, where it has always stood since the appearance of the first edition, in the front rank of authoritative text-books on the surgery of the genitourinary system.

Saunders' Question Compends. Essentials of Materia Medica, Therapeutics, and Prescription Writing. By Henry Morris, M.D., College of Physicians, Philadelphia. Seventh Edition, Thoroughly Revised. By W. A. Bastedo, Ph.G., M.D., Instructor in Materia Medica and Pharmacology at the Columbia University (College of Physicians and Surgeons), New York City. Philadelphia and London: W. B. Saunders & Company, 1905.

In the new edition of this compend, the definitions, nomenclature, preparations, and doses have been made to conform with those of the recent revision of the U. S. Pharmacopeia. There also appear for the first time sections on diphtheria antitoxin, organotherapy, and thyroid extract. As a compend on Materia Medica it can hardly be improved.

Anatomy, Descriptive and Surgical. By Henry Gray, F.R.S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London. Edited by T. Pickering Pick, F.R.C.S., Consulting Surgeon to St. George's Hospital and to the Victoria Hospital for Children, London; H. M. Inspector of Anatomy in England and Wales; and Robert Howden, M.A., M.B., C.M., Professor of Anatomy in the University of Durham; Examiner in Anatomy in the Universities of Durham and Edinburgh, and to the Board of Education, South Kensington. New American Edition. Thoroughly revised and re-edited with additions by John Chalmers DaCosta, M.D., Professor of Principles of Surgery and Professor of Clinical Surgery in Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital; Consulting Surgeon to St. Joseph's Hospital. Illustrated with 1,132 elaborate engravings. Philadelphia and New York: Lea Brothers & Co., 1905.

The present edition of Gray's Anatomy has undergone a most thorough revision. The special sections on Histology and on Embryology have been omitted, but résumés of these important subjects have been interpolated in their proper place in the text whenever necessary. With this exception, the general arrangement has not been disturbed. The chapters that have received the most radical revision are those on the Lymphatic System and the Nervous System. The former of these now gives a most satisfactory account of the present knowledge of the subject. The chapter on the Nervous System is a great improvement on that in some recent editions; and, besides being accurate and sufficient, is also readable and interesting. The illustrations, which have always been a feature of this work, now number over eleven hundred, and about half of them are new in this edition. Both text and illustrations have been enriched from all available sources: and by omissions, alterations, and additions, almost every page bears witness to the judicious work of the editor. The printing, paper and general get-up of the book are all that can be desired. It is difficult to say which excites the greater admiration, the vitality of the original work of Gray, which has been able to survive so many editions at the hands of so many editors, or this newest American edition, the able editing of which insures this classic a continuance of its position in the forefront of books for the student and the practitioner. An anatomy is the first book for the medical student to buy, and the last for him to part with.

Blakiston's Quiz Compends. A Compend of Medical Chemistry, Inorganic and Organic, Including Urinary Analysis. By Henry Leffmann, A.M., M.D., Professor of Chemistry in the Woman's Medical College of Pennsylvania, and in the Wagner Free Institute of Science. Fifth Edition, Revised. Philadelphia: P. Blakiston's Son & Co., 1905.

The previous edition of this compend was issued eleven years ago. In the new edition are a few changes, notably the addition of paragraphs on the electrical relations of the elements, and on the classification of the elements. The sections on vegetable chemistry and part of that on animal chemistry are omitted. The misplacement of figures in the table of the composition of milk may prove misleading. The book is weak in definitions. The word "Medical" is inserted in the title of the book, and is upheld in the preface, but we fail to find any material changes in the text to justify the addition.

Opérations Plastiques et Anastomoses dans le Traitement des Rétentions du Rein. Par le Dr. Faxton E. Gardner, Ancien Interne des Hôpitaux de Paris, et de la Clinique des Maladies des Voies Urinaires de l'Hôpital Necker; Médaille de Bronze de l'Assistance Publique. Paris: Vigot Frères, 1904.

This book is a contribution to conservative renal surgery. After a short historical introduction, the author describes the technique and results of the various operations referred to in the title. The indications for these operations, and also their contraindications, are next discussed. The author then gives a series of fifty-nine cases treated on the lines advocated; these cases are chiefly collected from the literature of the subject, but some of them are here published for the first time.

Immunity in Infective Diseases. By Élie Metchnikoff, Foreign Member of the Royal Society of London; Professor at the Pasteur Institute, Paris. Translated from the French by Francis G. Binnie, of the Pathological Department, University of Cambridge. With 45 Figures in the Text. Cambridge: The University Press; New York: The Macmillan Company, 1905.

The original of this translation appeared in French in 1901 and summed up, the author says, the labors of twenty-five years. Since its publication the lore of immunity has been increased by many new observations, and it now appears that the doctrine of phagocytosis, which at first was in many quarters regarded in this connection merely as the *jeu d'esprit* of an imaginative zoologist, is destined to play as important a rôle in the theories of immunity as its originator had prophesied for it many years ago. As Metchnikoff takes pains to explain, there is not that radical discrepancy between his own views and those of Ehrlich which is often alleged, the differences being mainly those of the two standpoints from which the subject may be attacked. Metchnikoff's theoretical edifice is founded on the observations of the biologist, while Ehrlich interprets the same phenomena in terms of chemistry. The doctrines of the side-chain theory are entirely compatible with the results obtained by Metchnikoff, the only vital difference of opinion between the two schools being concerned with the habitat of the cytolytic and bacteriolytic ferments, or cytoses, under normal conditions. Ehrlich supposes them to be always free in the body fluids, whereas Metchnikoff contends that they are constituents of the phagocytes and are liberated only when in response to a stimulus of some sort phagocytolysis occurs. According to his belief, phagocytes may be free or fixed. The former are cells of the circulation and comprise the microphages or polymorphonuclear leucocytes, and the macrophages or large mononuclear cells. The fixed phagocytes are tissue cells, occurring in nearly all parts of the body, and closely resemble or are identical with the free macrophages. The microphages are the particular enemies of invading bacteria, while the macrophages destroy foreign cells of animal origin. The ferments or cytases of these cells which permit this action may be set free in the body fluids if the phagocytes are damaged, and may then be experimented with in the manner described by Ehrlich and his followers. It is impossible in a brief review to do more than sketch the barest outlines of the fascinating study which the brilliant Russian *savant* has elaborated, and as the translator has done his work so well that much of the vivacity of the original has been preserved, we can only commend the volume most heartily to those who would regale themselves with a scientific work of the highest importance, which is as agreeable to read as one of the "six best sellers."

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held February 1, 1906.

DR. CHARLES L. DANA IN THE CHAIR.

THIS meeting was held under the auspices of the Section on Otology.

Intracranial Lesions as Sequelæ of Chronic Purulent Otitis Media.—Dr. M. ALLEN STARR read this paper. (See page 369.)

Otitic Disease in its Relation to Intracranial Lesions.—Dr. CLARENCE JOHN BLAKE of Boston said that the diseases of the ear, precedent to intracranial disease of otitic inception, were mainly those which had their origin in an infection, and the character of this infection, the extent of tissue destruction accompanying it, the systemic condition of the patient accompanying it, with reference to the capacity for affording not only eliminal but also mechanical resistance to the extension of a suppurating process, as well as the contiguity of the otitic and cranial cavities and the character of their encapsulation had to be taken into consideration in the study of this subject from the otological point of view. He described the anatomy of the tympanic space, tympanum and post-tympanal bone in the infant and the adult and showed that the frequency of post-aural and progressive interlamellar osteomyelitis of the post-tympanal bone and squama, as a sequence of suppuration within the middle ear in the infant, was accounted for by the loose relationship of the individual bony parts. While the progressive developmental changes in the epitympanum and the mastoid, and in their cortical walls, presented a certain definable sequence, a comparison of the developed spaces in different adults showed such a difference in contour and in structure as to justify the assertion that there was no one bony structure in the human body which presented so many deviations from an arbitrary standard type as the normal epitympanum and mastoid process of the temporal bone. The same multiplicity of variations was found on the inner walls separating the mastoid from the cranial cavity. The primary inceptive changes in the tympanic mucous membrane, preliminary to a suppuration, were those of a serous exudative process which became characteristically altered by the presence of pus-producing bacteria. The microorganisms found in the pus, in cases of suppurative middle-ear diseases were numerous, the most important being the diplococcus of pneumonia, streptococcus, pyogenes albus and aureus, Friedlander's bacillus, the bacilli of diphtheria, tuberculosis, influenza, and pseudoinfluenza, the *Bacillus pyogenes*, *Bacillus fœtidus*, and *Bacillus coli communis*. In children the pneumococcus was isolated in pure culture more frequently than other organisms, the streptococcus coming second, and the staphylococcus third. In chronic suppurative cases a mixed infection was the rule. When suppuration broke through tympanic bounds the problem became a serious one, and it was by extension from the tympanum, epitympanum and mastoid that lateral sinus thrombosis, extradural abscess, cerebral and cerebellar abscess and meningitis ensued. The sequence of the extension of septic inflammatory process from the epitympanum to the mastoid cavity was first, through the connecting pneumatic cells, extending thence to the surrounding diploe and finally to such portions of the epitympanum and the mastoid cortex as might be more vulnerable. The less resistant cortical areas were usually found where the cortex was thin. The limitation of pus collections was determined largely by the mechanical resistance of the surrounding tissues, by the influence of gravitation and by the controlling effects of a secondary inflammatory process. A normal and constantly persistent mechanical agent for protection of the cranial cavity from invasion was the outward brain pressure, downward upon the superior and outward upon the posterior inner mastoid wall. When the extradural abscess had persisted for a sufficient length of time the exposed dura would be found covered with granulomata. In such instances the dura should be freed from granulomata by careful blunt curetting and dry scrubbing, care being taken not to penetrate laterally beyond the limit at which the adherence of the dura marked the boundary of the abscess cavity or to penetrate the dura itself. One of the complications to be looked for, especially in cases of prolonged suppurative disease of the mastoid was the implication of the lateral sinus, either by inflammatory thickening of its wall and consequent decrease in the lumen of the vein, or by formation of protective thrombus. The initial point of this invasion was usually upon the posterior mastoid wall, though it might also occur on the posterior superior mastoid wall. The thrombus might be either a flattened mural or it might entirely fill the lumen of the vein and extend downward to the entire occlusion of the jugular vein. In this case it was readily revealable by the general train of symptoms. He emphasized the importance of early operation in these cases, when once the suppurative character of the inflammatory process had been definitely determined and also, the importance, in all doubtful cases, at time of operation, of uncovering the sinus to a sufficient extent to permit free visual and tactile examination of the vein. Normally the vein should show a dark blue color, should be easily compressible by the finger, and a bent probe, with the convexity of the curve pressed across the vessel, should exhibit a flattened surface of the vein below and a convex surface above it. In the event of inflammatory thickening of the vessel wall, the deep blue color was lost and tactile examination was insufficient to descide between the resistance offered by a thickened vessel wall or an occluding thrombus, in which case the question must be answered by opening the sinus itself. A narrow bladed knife or straight manicure scissors were preferable to the hypodermic needle. If the thrombus was septically intact it might be curetted above until free bleeding had established effective lavage. Ligation of the jugular was not essential in all cases of sinus thrombus. The operation of ligation of the jugular alone, or when coupled with resection of the thrombosed vessel above the point of inferior ligation, was simple and secure, and there were as yet no evidences of prejudicial effects. In regard to extra and intradural and brain abscesses the general course to be followed in a case of suspected brain abscess of otitic origin should be first, the observance of all possible peripheral localizing symptoms and second, as complete an operative exposure as possible of the tympanic and mastoid cortical walls with a view to following surgically the course of septic infection. For this purpose the tympanomastoid exenteration was the most effective preliminary operation. The lymphoid encapsulation should be distributed as little as possible, consistent with free clearance of the abscess contents. In addition to drainage, lavage of the abscess cavity with warm, normal salt solution, under slight pressure, should be practised at the daily dressings unless contraindicated by immediate pressure symptoms or symptoms of cerebral irritation. With an intimate knowledge of the minute structure of this chosen field the aural surgeon had a primal duty in the prevention of intracranial complications of suppurative middle-ear disease. He emphasized the necessity of making as complete operative exposure of the possible paths of infection as possible and of limiting interference with the dura and brain substance to the degree of a safely indicable and rationally predetermined procedure. In regard to labyrinthine suppuration he said that in the light of recent knowledge the diagnosis of these suppurations would be facilitated, but the actual number of cases would probably decrease because of improved methods of treating middle-ear disease. The most reliable statistics indicated one case of labyrinthine suppuration in one hundred cases of purulent middle-ear disease. The reader of the paper described the etiology and pathology of this condition. The prognosis was a grave one, owing to the frequency of its complication with suppurative menin-

gitis. Surgical measures afforded the only hope of satisfactory treatment. The operation should consist of a complete mastoidtympanal exenteration and a sufficient area of the outer surface of the temporal bone should be removed to permit a clear view under illumination, of the internal tympanic wall. When caries of the labyrinth wall was found, a thorough opening of the labyrinth and the following of the suppurative tract would secure the best results. Fairly satisfactory results would follow thorough surgical treatment even in cases where serous meningitis had been previously established. No attempt should be made to secure primary closure of the post-aural wound.

Dr. B. Sachs said that for many years he had been in the habit of speaking of these cases as the result of meningeal irritation when in connection with ear diseases. The treatment of encephalitis seemed to him to depend upon whether the encephalitis was of the acute hemorrhagic or the suppurative variety. With regard to the diagnosis of temporosphenoidal abscesses the form of the aphasia struck him as being rather charaeteristic. It was not the aphasia one would expect; pure sensory aphasia was the exception. He said he could not recall a purely sensory aphasia as a sequel of otitic infection. With regard to cerebellar abscesses, cerebellar seizures pointed to a cerebellar involvement; in cerebellar seizures there was a distinct grouping of symptoms, pointing to involvement of the cerebellum; the symptoms which helped to locate the abscess in the vicinity of the cerebellum was the early involvement of the facial nerve, not in the way of a paralysis, but of electrieal degeneration. Brain surgery was not as satisfactory as it should be in this country and surgeons in this country were behind those abroad in this branch of surgery, and particularly were they neglectful in the avoidance of hemorrhage. He did not believe in draining brain abscess through the ear; the brain was such a delicate organ that nothing should be attempted in the dark.

Dr. George W. Jacoby said that the more he had listened the more he had been convinced that, notwithstanding all that had been said regarding the differential diagnosis between epidural and intracranial abscesses and different forms of meningitis, it was still a difficult matter. He then called attention to a point that he did not believe had received the attention it should have, which was serous meningitis complicating otitis media. During the course of an acute otitis there was a sudden acute onset of symptoms pointing to brain pressure, accompanied by reduction in vision, optic neuritis, and cerebellar symptoms. In such cases the diagnosis of suppurative meningitis or brain abscess was usually made. A puncture was made, but nothing found, yet the patient then improved and got well. In such a case, he said, they were dealing with this form of meningitis, a serous meningitis, and the opening, as by a puncture, was followed by a cure. In these cases the pressure was mostly in the posterior fossa, accounting for such symptoms. The results of lumbar puncture, evacuating a clear fluid without microorganisms or cells, were good. The symptoms resulted from the high pressure. Therefore in doubtful cases he believed in employing lumbar puncture with drainage; if no fluid was obtained he then advocated opening the ventricles of the brain, performing puncture in that way. He believed blood examinations were very important, especially noting the increase in the polymorphonuclears.

Dr. Hermann Knapp called attention to the fact that brain abscess situated in the anterior fossa resulted from conditions within the nose or sinus; in the middle portion, from the mastoid or tympanic cavity; in the posterior fossa it was the result of a pyemic process which came from the sinus. In the treatment of these abscesses he believed failure very often resulted from too small an opening. In cases of epidural abscesses large incisions should be made, and not mere punctures.

Dr. Edward B. Dench said that he had operated upon a case of septic encephalitis with a perfect recovery following. Blood count in brain abscesses as a diagnostic measure he believed of great value, especially the polymorphonuclear count. He did not entirely agree with the statements made regarding leucocytosis except that it was moderate in cases of thrombosis of the jugular vein. It was his personal opinion that otologists should operate upon these brain abscesses of otitic origin, and that they should enter above the zygoma. With regard to a bone flap he believed that it was better to make a large opening, and then, at some later period, fill in that opening with a celluloid plate or connective tissue. In sinus thrombosis one almost always found some thickening, but there was, in some cases, a rapid breaking down of the abscess. With regard to the ligation of the jugular vein he did not believe this was necessary in all cases; but he did not believe in ligating it and then leaving it *in situ*.

Dr. James F. McKernon said that the *x*-ray had been used in the clinics at Bordeaux, and also at Vienna, with varying successes, and that he himself had used it in two cases, in which only one was positive. The pus was where the radiograph showed it to be. He thought that in the future the radiograph might help them in the diagnosis of brain abscesses very much. With regard to the contraindications of the iodoform drain, as mentioned by Dr. Starr, in brain abscesses, he said he did not believe that anyone had better results than Maeewen, and he used gauze impregnated with equal parts of borie acid and iodoform, packing it in loosely. Dr. McKernon had used this method with uniformly good results. With regard to irrigating the brain abscess eavity with hot physiological salt solution, he said he advocated this in cases of brain abscesses eight or nine years ago, and had been severely criticised for attempting to irrigate an abscess cavity in the brain. The polymorphonuclear blood count had helped him considerably in diagnosing epidural abscesses and sinus thrombosis and was one of the most valuable adjunets in diagnosing these cases. Again, in every case of intracranial complication the time element entered largely in the successful issue of these cases.

Dr. T. P. Berens believed that the future in this eountry would develop specialists in brain surgery.

Dr. Sprague of Providence, R. I., reported two cases of suppurative meningitis which were of partieular interest when the blood count was studied. One was a mastoid ease showing the whites to be 20,000 and the polymorphonuclears 04 per cent. After the operation the patient did well for six weeks, when she was taken with nausea and persistent vomiting, with a rapid rise of temperature, and died after two or three days of meningitis. At autopsy there was found a widespread meningitis. Forty-eight hours prior to death the white eount was 28,000, while the polymorphonuclear percentage remained the same. The second case was one of suppurative meningitis and showed similar conditions at autopsy. During the illness the white count did not go above 7,500 and the polymorphonuclears amounted to 70 per cent. In another ease in which he had operated the white eount was 10,000 and then suddenly went up to 30,000. The brain was probed and half an ounce of pus was evacuated.

Dr. William M. Leszynsky said he had observed a case which illustrated the extreme diffieulty in coming to any definite eonclusion in diagnosing brain abscess. The patient had been operated upon for mastoid disease of suppurative type and then soon developed signs of meningitis. Lumbar puncture was done and a fluid escaped under high pressure. The patient then developed auditory aphasia with jargon aphasia. The disease being on the left side, it was assumed that a temporosphenoidal abscess was present, or one that involved the temporal convolution. After lumbar puncture had been done the patient began to improve, and on the following day the asphasia entirely disappeared and the patient made a complete recovery. It was difficult to base a diagnosis upon electrical irritability of the facial nerve. With regard to the cerebellar syndrome he believed it must be exceedingly rare, so far as abscesses were concerned.

Dr. Emil Gruening said that brain abscesses had never been opened and drained through the tympanic cavity by otologists. But if it was necessary to open through the roof of the tympanic cavity to remove disease, and a focus of disease was then met with, of course it should be removed, and through this opening.

Dr M. Allen Starr believed in an arraignment of all surgeons in this country for being so remiss in their work in brain surgery, and for the lack of proper attention being paid to this special branch, an important branch of surgery. Advances along the line of brain surgery had been made largely by Kocher, by Horsley, and by Macewen; but very few men in this country had taken up this important work. Dr. Starr wished, by his remarks, to stimulate work, in order to get a better percentage of recoveries in this important field of surgery. An exploratory puncture should not be made, but a wide opening; as a result of opening widely he had never seen a case of cerebral hernia, especially where the flaps were made of bone and replaced in a proper manner. Cerebral hernia as a rule was the result of sepsis. The danger of irrigation in these cases of brain abscess was only present when it was attempted through a small opening without any free exit for the fluid pumped in. With regard to the radiograph in brain abscesses, personally he had had only two cases radiographed, and with absolutely negative results in both. He had had a number of brain tumors radiographed, but without any benefit whatever.

Dr. Blake of Boston closed the discussion.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held December 14, 1905.

SECTION ON PEDIATRICS.

Dr. L. E. LaFetra in the Chair.

Cranial Gummatous Syphilis in an Idiotic Child.—Dr. Sara Welt-Kakels presented a boy, two and a half years old. There was no history obtained that pointed to lues in the parents. The child had never suffered from snuffles or any skin eruption He had six brothers and sisters living and well. At the end of the second year he had a discharge from the ear which lasted but a short time. At the same time he developed an abscess in the neck which was incised and healed after a period of four weeks. The first tooth appeared when he was two years old. He could not stand alone and made no efforts at walking and did not appear to recognize his parents. He did not speak even single words. While generally good-natured he occasionally became very excitable and destroyed everything within his reach. His appetite was voracious and he put everything in his mouth he could get his hands on, even paper and feces. Some five months ago a swelling appeared above the right eye and two months later a similar one appeared in the left temporal region. They caused no pain, and neither of these tumors had materially changed although he had been under treatment for some months. The boy was fairly well nourished, weighed twenty-five pounds, with skin and visible mucosa normal, with superficial lymphatic nodes enlarged. The face was apathetic, with rather a stupid expression, and he did not react to loud noises. The pupils responded to light and there was a left sided nystagmus. There was a slight loss of hair on eyelids and eyebrows. The bridge of the nose was somewhat sunken and he dribbled from the mouth and his hard palate was arched. The teeth were all present, some being carious. There were adenoids in the nasopharynx. Above the right eye on the frontal bone was situated a tumor the size of a fifty-cent piece, shaped like a watch crystal and not painful on pressure. The overlying skin was not reddened or otherwise changed. The consistency over the center of the tumor was elastic and in some parts gave the sense of fluctuation, whilst the circumference presented a hard ridge, apparently due to a reactive hyperplastic inflammation. Another somewhat similar swelling of the same character was found over the left temporal region. Exploratory puncture of the larger tumor revealed a bloody fluid which showed under the microscope very minute tissue threads. Very careful examination of the fresh and stained specimen failed to show the presence of the spirochete pallida. Dr. Welt-Kakels said that cranial syphilis in early childhood was not uncommon. Most frequently the long bones of the body were affected. Such an experienced observer as Hochsinger reported to have seen but four cases of gummatous syphilis among 600 nurslings with hereditary lues.

A Sugar of Milk Graduate.—Dr. Roland Godfrey Freeman presented this instrument which gave a fairly accurate measurement for all practical purposes.

Open Safety-Pin Swallowed by an Infant Six Weeks Old and Successfully Passed by Bowel Six Days Later.—Dr. Hedges of Montclair, N. J., reported this case. (See page 389.)

Hydrocephalus and Rachitis: Their Treatment by Radiant Energy, with Report of Cases.—Dr. Margaret A. Cleaves read this paper. She said that an agent which was able to penetrate not only bony structures but internal organs, tuberculous lesions, brain tumors, that had a predilection for lymphoid structures as evidenced by increased pigmentation in the spleen, that produced disturbances of the cellular equilibrium of the blood, that was destructive to germ life, that could so impair the vitality of the lining membrane of the seminal tubules as to prevent the reproduction of spermatazoa, and that could atrophy the Graffian follicles, could with perfect reason be expected to penetrate the cranial bones and act upon the effusion of fluid into the ventricles, acting at the same time upon the lining membrane or endothelium which was often finely granular and somewhat thickened. In so doing there would also be a helpful stimulus imparted to the brain structure itself, tending to the promotion of nutritive changes. Two cases were then reported in detail. The first case was a typical congenital internal hydrocephalus. The second case was diagnosed by four physicians as one of primary hydrocephalus. In this case the rachitic element was recognized at the first visit and although the opinion given as to treatment was based upon the slight symptomatic improvement obtained in the first case, the exhibition of *x*-ray energy was in this second case considered of comparatively little importance as compared with that of all the energies of the electric arc, from the lowest to the highest frequencies of vibration. As a matter of fact 14 *x*-ray exposures were made, and 16 arc light treatments given. The *x*-ray exposures towards the last were more of a perfunctory nature and continued for their moral effect upon the parents, in order to hold the child until the influence of light energy not only absorption but fundamental nutritive changes had been fully established. So strongly did Dr. Cleaves believe in the absorptive power of radiant energy that given any pathological condition with effusion she would expect to secure absorption and establish normal circulatory conditions, increase the oxygenating power of the blood, secure tonicity of muscular structerues and healthful functions from the use of light alone. In conclusion she emphatically stated that the report was not presented with the thought that in variant energy was to be found a panacea for hydrocephalus and rachitis, but to call the attention of the profession to the results obtained in the two cases, that the way might be open to further investigation of the subject. Such measure of success as was to be obtained would depend upon the character of a given case, *i.e.* the extent and duration of the pathological change. Treatment should be instituted upon the first manifestation of disease, even immediately after birth, but it should be administered with the full knowledge of the physics, physiological action and therapeutic technique of radiant energy, superimposed upon a knowledge of the pathology underlying the condition. It was well worth a trial. Because given conditions have always been regarded as in-

curable, was no reason that the profession should continue to so regard them. By radiant energy must be understood not only the *x*-ray, but all the energies of the spectrum of the electric arc.

Dr. Leslie Meacham said that he had seen the first patient at the end of the first week of treatment and he did not take much interest in it because he did not believe that anything could be done for the patient. When first observed there was no spontaneity and the patient appeared in a state bordering on coma; there was no movement unless the patient was aroused, and considerable stimulus was required to do this. The influence of the treatment seemed like the creation of a soul in the child, and after six weeks' observation the child was apparently normal, so far as intelligence was concerned.

Dr. Lewis Gregory Cole said that he had not seen the child when it first came under observation, but that when he did see it, the patient acted like a normal one.

Dr. Matthias Nicoll, Jr., said that there were not sufficient evidences of hydrocephalus in the second case reported and, in his opinion, it was not impossible that this was simply a case of rickets. While he had no doubt that the light treatment did have some effect upon the child's condition, one should remember that certain adjuvants as good food and good care aided greatly.

Dr. L. E. LaFetra said that the second case seemed to be to him one of rickets, pure and simple, and he believed that this case improved more rapidly than most cases did, and it was rational to believe that the light treatment was of additional value in the treatment of such cases.

Dr. Cleaves, closing the discussion, said that she could take a woman with an effusion in the pleural cavity so great as to produce dyspnea, with the heart pushed to one side, with the tappings showing evidences of new growth, etc., and could relieve her of her dyspnea from the time of the first treatment and cause the fluid to disappear; therefore one should be willing to believe that the fluid in the cerebral ventricles could be absorbed by the use of the light. She emphasized the importance of using this treatment so soon as the first manifestations of the disease presented themselves.

Gonococcus Vaginitis in Little Girls—Report of the Treatment and Results Obtained in a Series of Cases.—Dr. W. D. Trentwith presented this paper. He said that he had made note only of those cases which he had been able to follow to the end, so that results might be definite. In this series of twelve cases over 50 per cent. were infected indirectly by the father. That is, the mother had been troubled after her marriage with leucorrhea and on inquiry it was found had at some time or other had gonorrhea. Several cases which were infected by the sister ought also to be classed as indirectly infected by the father. One case had a discharge shortly after returning from a day nursery. The treatment was as follows: A soft rubber catheter, not larger than a No. 15 Fr. and a fountain syringe bag was provided. By means of a medicine dropper, connection was effected between the tubing of the fountain syringe and the catheter. The bag was filled with warm solution of potassium permanganate of the appropriate strength of 1-4000, then elevated three feet or more above the level of the bullocks, the child reclining on a duche pan, with the thighs flexed and abducted to the full extent. The catheter, lubricated with chondrus jelly or glycerin, was introduced into the vagina, and the full amount of solution allowed to flow. This was done two or three times daily, according to the severity of the case. A solution of potassium permanganate of the strength of 1-100 was prescribed; ʒvi to oij of water, which gave a solution of the approximate strength of 1-4000, and lent itself easily to any desired change in the strength. After the discharge became slight in amount and mucopurulent in character, the potassium permanganate was stopped and douches of equal parts of zinc sulphate and alum, ʒt to ot were given morning and evening. At each visit of the patient to the clinic, the same treatment was carried out. This was done not so much for the good that it did the child, as for its moral effect upon the mother. These cases were often long in getting well, because the mother neglected the treatment and must be impressed with its importance. When the discharge became slight and the child was using the zinc and alum douches at home, the physician used a solution of silver nitrate in strengths of 1-2000, 1-1000, 1-500, 1,250, 1-125 ʒi-ʒss were injected into the vagina. This usually completed the cure. The urethra became involved in only two cases of this series. By the application of a 10 per cent. solution of silver nitrate directly to the inflamed urethra the symptoms were relieved and the condition cured. The bowels were of course kept active and improper food prohibited. The mothers were instructed to keep the external genitals very clean by frequent washings with castile soap and dustings with talcum powder or boracic acid. The child should wear a napkin of bleached gauze, which could be thrown away. The mother was always informed as to the infectious character of the disease. The average length of treatment in the whole series of cases was four and a half months. Excluding two intractible cases the average time required was three and a half months. In the cases of primary infection in which treatment was begun under two weeks, the average length of time to obtain a cure was only seven weeks. He said that he had yet to see a case of vaginitis in which the catheter could not be passed without damage of any kind to the parts, provided gentleness was used and attempts to introduce it further were not persisted in after it met with obstruction in the vagina. The mother should be instructed as to the use of the catheter and should be made to pass it once or twice in the presence of the physician. It was not impossible that a neglected case of gonococcus vaginitis could go to womanhood, marry, and be the cause of gonorrhoea in her husband. In conclusion he emphasized the following points: 1. The great need for early diagnosis and treatment. 2. The necessity for frequent douching with large quantities of solution. 3. The non-use of absorbent cotton as a dressing for the parts. 4. The need for care and gentleness in the treatment. 5. That a case should not be considered as cured, until, not only the discharge had stopped, but it was no longer possible to find the gonococcus in the vaginal secretions microscopically. 6. The need of impressing the mother with the serious nature of the disease, and the necessity for treatment, until the gonococci had entirely disappeared. 7. The greater dissemination of knowledge among the men and women, who suffer from gonorrhea, as to its infectiousness to others, and its power to do, at times, great harm at a period remote from the time of primary infection, when the disease remained uncured. 8. The great necessity for care in keeping cases of gonococcus vaginitis out of the day nurseries and babies' hospitals because of the epidemic character which it assumed among the inmates.

Dr. Sara Welt-Kakels believed that most girls contrated gonococcus vaginitis from their mothers. Frequently women would come to the dispensary because the child was unable to walk; upon careful inquiry it would be learned that the child had been in the hospital with a specific vaginitis and had been sent home without the mother being informed as to the trouble, thus exposing other children in the family. She believed that Dr. Trenwith had been fortunate in effecting such quick cures. Often negative results were obtained with smears when positive results would be had by cultural methods. She used the same treatment as Dr. Trenwith, but the silver was used in stronger solutions and by means of a fountain syringe. The mother was always told the nature of the disease and instructed regarding proper disinfection of hands.

Dr. Henry Heiman said that this disease was one that was not easy to cure, and lasted not only seven weeks but sometimes even seven years. He preferred using Ultzman's posterior urethral syringe and had never seen any harm done by its use. He also used stronger solutions,

1 per cent. for the first week, used every day; 2 per cent. for the second week, used every second day; 3 per cent. for the third week, used every third day, etc., until the discharged ceased. He had found epidemic vaginitis in nearly every hospital in New York City. The only way to stamp out the disease in institutions was by adopting a rigid quarantine, such as would be adopted for diphtheria or scarlet fever.

Dr. G. R. Pisek believed that better results were to be obtained by packing the vagina than by the use of douches or irrigations.

Dr. G. D. Scott believed in the use of stronger solutions of argyrol or protargol in the treatment of gonorrheal vaginitis.

Dr. L. E. LaFetra said that at least nine-tenths of the cases of vaginitis seen in children were gonorrheal.

Dr. Trenwith, closing the discussion, said he did not claim any originality for this method of treatment. There was too much laxity among the people in the care of their hands after attending these cases.

Election of Officers.—*President,* Dr. Matthias Nicoll, Jr.; *Secretary,* Dr. John Howland.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, January 8, 1906.

The President, Dr. Thomas E. Satterthwaite, in the Chair.

Election of Officers.—The following officers were re-elected for the ensuing year: *President,* Dr. Thomas E. Satterthwaite; *Vice-President,* Dr. Ransford E. Van Gieson, of the Borough of Brooklyn; *Recording Secretary,* Dr. P. Brynberg Porter; *Chairman for the Borough of Manhattan,* Dr. J. Blake White; *Member of the Executive Council,* Dr. Reynold Webb Wilcox.

Presidential Address.—The President, Dr. Satterthwaite, in a brief opening address, reviewed the excellent scientific work done by the Association during the past year, and expressed the hope that the membership list of the Association, which was now 653, would be largely increased during his present term of office.

Symposium on Diseases of the Upper Air Passages.

1. Recent Advances in Diseases of the Upper Air Passages.—Dr. Wolff Freudenthal read this paper, in which he reviewed briefly the progress made by science in this special field during the past year or two. In the field of etiological research he said that much of importance had been published in recent years, and we now knew that several parts of the upper air tract were the portals for the entrance of infectious organisms. Tuberculosis and rheumatism were mentioned in this connection. Too much stress, however, had been laid upon the established fact that the faucial tonsils were found to be often involved in those two diseases, from which it was concluded that they constituted the main portals for many infectious microbes. Dr. Freudenthal said that he was not opposed to the removal of diseased tonsils, whether they were hypertrophied or not, but he could not agree with Gürich's claim ("die tonsillare Lokaltherapie des Gelenkrheumatismus"), made at the last Congress of Internal Medicine, held at Wiesbaden, in 1905, that the tonsils were the main portals of any infection, and required removal under all circumstances. The tonsils formed only one part of the great mass of adenoid tissue called Waldeyer's ring, and this entire area was apt to be the point of entrance for many germs, especially in its upper portion in the nasopharynx, where the well-known adenoid growths occurred. The speaker said that many years ago he presented the proof of his theory that the upper portion of this ring very often formed the portal for the primary infection in tuberculosis, and he thought this was equally true of other infectious diseases. More recently, his attention had been directed to the lingual tonsil, and he was surprised to find many enlarged lingual tonsils in tuberculous patients in his service at the Montefiore Home and the Bedford Sanatorium for Consumptives. Whether it was the cough that caused this glandular tissue to enlarge, or whether it was the manifestation of a primary infection, or of a secondary one extending from above, could not now be decided. There was a large field for future fruitful investigations in this direction. Dr. Freudenthal said that no one could deny the great progress that had been made of late in the treatment of tuberculous infections of the upper air tract, and it was not too much to assert that the great majority of the patients could be relieved of their dysphagia and the irritating cough that had its origin in some part of the upper air tract. Marked progress had also been made in relieving deformities of the face by the injection of paraffin. Unfortunately, however, the procedure was not without danger, as several cases had been reported in which total blindness of one eye resulted after such injection, caused by particles of paraffin getting into the arteria centralis retinæ, and acting as an embolus. Among other recent advances in the treatment of diseases of the upper air passages, Dr. Freudenthal mentioned tuberculin and the various rays, including the actinic, the Roentgen, the high-frequency current, and the rays emanating from radium. For the treatment of dry and atrophic catarrh of the nose, he mentioned the new suction method of Spiess of Frankfort. For the endoscopic examination of the maxillary sinus, Alfred Hirschmann of Berlin had devised several novel and useful instruments. He also called attention to the submucous resection of deflected nasal septa and spurs, especially after the method of Ballenger, and referred to the control of nasal hemorrhage by the subcutaneous use of adrenal extract, the injections to be made at the nearest accessible point to the bleeding area, as practised by Dr. H. J. Mulford of Buffalo. In conclusion, he referred to Dawbarn's method of constricting the upper part of the thighs or arms in order to decrease the loss of blood in the course of any severe operation where much hemorrhage was feared.

2. Hypertrophy of the Pharyngeal Tonsil; Lymphoid Hypertrophy at the Pharyngeal Vault, or "Adenoids."—Dr. Frank C. Raynor of Brooklyn stated that this condition, which was first discovered by Czermak, in 1860, and was brought practically before the profession by Wilhelm Meyer of Copenhagen, in 1870, attracted comparatively little attention in this country until the middle eighties. Since that time the subject had received a great deal of notice in medical literature. In some respects, the popular term, "adenoid" (glandlike), was unfortunate, for the lesion was not, anatomically, a true secreting gland, but was composed of lymph cells and connective tissue arranged in the form of a lymph node, which was covered by columnar epithelium, irregularly ciliated. These nodes were arranged in masses which varied greatly in size, shape, consistency, and attachment to the nasopharynx. They were not, strictly speaking, new growths, being only an overgrowth of the normal histological elements of the mucous membrane lining this cavity. The disease was principally one of childhood, but might be encountered at any age, for while the lymphatic tissue normally present usually atrophied about puberty, hypertrophied tissue remained indefinitely. The diagnosis could usually be made from the symptoms alone, and might be confirmed by examination of the nasopharynx with the rhinoscopic mirror, or, in doubtful cases, by a digital exploration of that cavity. When the faucial tonsils were hypertrophied in children, adenoids could be safely assumed in nine cases out of ten. In the treatment of adenoids but little could be accomplished medicinally when the disease was at all advanced. In mild cases, particularly in very young children, he had sometimes obtained relief by the instillation of liquid petrolatum, containing two grains of menthol and ten minims of eucalyptol to the ounce. This was best applied by dropping, with the ordinary medicine dropper, two or three

minims into each nostril, morning and night, the child lying on the back while the application was made, and kept in that position until the medicament had time to reach the nasopharynx. Speaking generally, the use of sedative and astringent applications in order to relieve symptoms was to be discouraged. The caustic applications recommended by some authorities, the speaker said he had never employed, and the thought the risk attending their use far outweighed any possible benefit that might be derived from them. After a brief review of the various surgical methods of treatment, Dr. Raynor said that the instrument he most favored was a modified Gottstein curette, with which, together with a specially-bent curette for the posterior wall, he believed he was able to clean out a nasopharynx quicker than in any other way. He operated with the patient lying on the right side, which was convenient for the operator and best for the patient when under an anesthetic, which he almost always employed, ether being the agent used. After the operation, the patient was kept in bed for a day or two, and confined to the house for a few days more. For the first twenty-four hours the patient should sleep on the side, in order that any secondary bleeding might be readily discovered. No local after-treatment was necessary. When adenoids and hypertrophied tonsils were both present, a very common condition, he usually attacked both at the same time, removing the tonsils first. The result of the operation for adenoids was usually highly satisfactory, and the improvement that took place in some children when freed from this disability bordered on the marvelous. In discussing the treatment of hypertrophy of the faucial tonsils, Dr. Raynor said he thought the only rational method of dealing with this condition was by a total extirpation of the diseased mass under general anesthesia. In other words, it should be treated as one would treat any other diseased lymphatic gland on which an operation was deemed necessary. This could not be accomplished by a tonsillotomy, as ordinarily performed, excepting in unusually favorable cases. Becoming dissatisfied with the results obtained from the use of the guillotine some years ago, the speaker said he began dissecting out the tonsils, gradually modifying his technique to the operation described by his colleague, Dr. W. H. Steers, in an article published in the Medical Record October 3, 1903, to which he referred for fuller details.

3. The Accessory Sinuses.—Dr. Hubert Arrowsmith of Brooklyn read a paper with this title, in which he briefly discussed the various diseases of the accessory sinuses, and methods of treatment.

4. Indications for Treatment in Acute Diseases of the Accessory Sinuses.—Dr. Henry L. Swain of New Haven, Conn., discussed this phase of the subject. He stated that ever since the invasion of this country by the first great epidemic of la grippe the number of cases of accessory sinus disease had largely increased, and many of the acute cases had developed into chronic empyemas, which frequently remained unrecognized, being called merely cases of chronic catarrh. The systematic transillumination of all cases of severe coryza would often, on the third or fourth day, show slight thickening of the shadow of one or all the sinuses. These subsequently cleared up in many cases, and were, without doubt, as he had been able to prove on several occasions in dealing with the maxillary and the frontal sinus, due to an accumulation of serum, which, when it did not become infected, was evacuated, and the patient was cured. From this it could be deduced that if the nose was kept clean of infected material, infection of the accessory sinuses might be avoided, and the first prophylactic indication, therefore, was not to neglect cases of mucopurulent catarrh. With every bad "cold" there was always a stuffy feeling about the head, pressure in the upper part of the nose, and, perhaps, headache, and this, in cases of frontal sinusitis, merged into a browache. The patient became conscious, sometimes suddenly, but more often gradually, that most of the ache was confined to the brow over one or both eyes, with a feeling of weight and pressure, and tenderness of that portion of the brow nearest the nose. When, with this, there was one-sided mucopurulent discharge, or when the discharge was freer on one side than the other, usually with more flow between the daily hours of nine and three o'clock, the symptoms pointed strongly to frontal sinus involvement. Transillumination was of distinct value in confirming the diagnosis. Or, by spraying out the nose with cocaine and suprarenal solutions, and then cleansing it, first by blowing and then by wiping out the middle meatus, one could frequently readily detect a stream of pus flowing down from the anterior part of the middle meatus toward the back of the nose, giving the assurance that the discharge came from the frontal sinus region. Usually, also, the anterior end of the middle turbinate bone was swollen and club-shaped. In later cases one saw almost always granulation tissue at the anterior end of the middle turbinate bone, blocking the opening of the infundibulum, which was just above and behind the point of junction of the middle turbinate with the side wall of the nose. The introduction of a probe into the lower part of the infundibulum, and producing a gentle backward and forward motion would frequently result in pumping down the fluid so directly from the frontal sinus that an absolute diagnosis was immediately established. The first indication for treatment was to relieve the pain by establishing good drainage. After reducing the swelling by the use of mild cocaine and suprarenal solutions, the introduction of a probe into the frontal sinus through the natural passages was often perfectly easy, and usually painless. The probe, of a proper curve, should, if possible, be passed into the frontal sinus cavity itself. When this proved impossible, after repeated efforts by competent hands, owing to blocking of the outlet, it was perfectly proper to remove the anterior end of the middle turbinate in order to accomplish a satisfactory entrance and establish free drainage from the frontal sinus. Dr. Swain then briefly reviewed the symptoms and indications for treatment in acute diseases of the other accessory sinuses, including the anterior and posterior ethmoid cells, the sphenoid, and the antrum of Highmore. In all these cases the methods of treatment were essentially similar to those described for the frontal sinus.

Dr. Satterthwaite said that Dr. Charles H. Knight, who was to have read a paper upon the serum treatment of hay fever (see page 379), would be unable to be present on account of illness. In order that this phase of the subject might not be left out of the discussion, Dr. Satterthwaite said that he would like to give his personal experience with Dunbar's serum. For a number of years he had been a sufferer from hay fever, the attack usually coming on the second of July. Last summer he was persuaded to give Dunbar's pollantin a trial, and he did so, introducing it both into the nostril and the eyes, and his attack of hay fever, instead of lasting twenty-eight days, as it had hitherto done, was over in twelve days. He attributed the curtailment of the attack either to the pollantin or to the fact that he had spent a good deal of his time in July in playing golf.

Dr. Joseph W. Gleitsmann said that while his personal experience with the serum treatment of hay fever was limited, he had come to the conclusion, from his reading and observation, that the same serum would not answer in all cases, and that we needed a different serum here from that employed abroad. The speaker said that the statement made by Dr. Freudenthal that tonsillitis could no longer be regarded as a local disease, and that rheumatism was a very potent factor in its production, was now recognized by all. Especially in the type of tonsillitis in which the follicles and lacunæ were invaded, local remedies alone were not sufficient. Dr. Gleitsmann said he was glad to hear Dr. Freudenthal speak of primary tubercular infection of the lingual tonsils. Personally, he had observed a few such cases, and he had in mind one particular case in which the primary infection of the tonsil could be demonstrated beyond the shadow of a doubt. The patient was a woman, in whom the disease began in the lingual

tonsil and extended to the pharynx. The disease was very extensive, and drastic measures were adopted to eradicate it. The patient was entirely cured, and fourteen years had now elapsed, without any signs of a recurrence. She had never had any symptoms of pulmonary tuberculosis. Dr. Gleitsmann said that in selected cases of tuberculosis he was still in favor, as he had been for a number of years, of injections of a good preparation of tuberculin, either the older preparation of Koch, or, preferably, the preparation of Dr. Carl von Ruck of Asheville, N. C. The speaker agreed with Dr. Raynor that the thorough removal of adenoids necessitated the use of an anesthetic, and he believed that the operation could best be done in the upright position.

Dr. Bryan De Forest Sheedy said he had found it quite impossible, in the majority of cases, to probe the frontal sinus, and he was not in agreement with what had been said in regard to the treatment of frontal sinusitis by the open, external operation. The matter of packing the sinus externally and maintaining an opening there was more serious than it was usually regarded to be, and the marked deformity it might give rise to should not be overlooked. In regard to the examination by transillumination, the speaker said he had found the method unsatisfactory and wholly unreliable, as we were apt to be misled by the varying thickness of the normal bone and tissues in different individuals. Personally, he had given up the use of the light altogether, excepting as an aid to other means of diagnosis. In adrenal and cocaine solutions we possessed two valuable remedies for the reduction of swelling of the nasal tissues, and in the early stages of frontal sinus disease they would often give the patient wonderful relief. The results of treatment obtained by this conservative method were much better than they had been heretofore, and the number of cases that progressed into the chronic stage would doubtless be largely decreased thereby. Dr. Sheedy said he did not regard the existence of even advanced pulmonary tuberculosis as an indication for the induction of premature labor, as had been advised by some. He considered the removal of adenoids without an anesthetic as cruel, even in young children, and favored the practice in vogue in the London City Hospital, where it was obligatory upon the surgeon to give an anesthetic in those cases, although there they preferred chloroform to ether. A small amount of ether would spare the child much pain, and render the operator's work easier and more thorough.

Dr. H. Beaman Douglass said he agreed with Dr. Sheedy in regard to the unreliability of transillumination in the recognition of frontal sinus disease; in his clinic they had discarded the method entirely. In regard to probing the frontal sinus, he did not claim that the probe had entered the sinus until its presence there could be verified by the *x*-ray. While the introduction of cocaine had proved a great advance in the recognition and treatment of diseases of the upper air passages, it had also revealed other problems that were still unsolved, and where patients a decade ago complained of unrelieved obstruction, they now demanded to be relieved of the mucoid or mucopurulent discharges from which so many of them suffered.

Dr. Lewis A. Coffin said that in the removal of adenoids or tonsils he did not think it mattered much what instrument the operator preferred, or what the position of the patient might be; the chief point was to remove the offending growths, and remove them thoroughly. In the removal of adenoids he usually preferred to do the operation under chloroform anesthesia. While transillumination could not be solely relied upon in the diagnosis of frontal sinus disease, it was a valuable accessory in the recognition of that condition. Dr. Coffin said he had failed many times to introduce a probe into the frontal sinus, and in those cases where he succeeded he always liked to verify its presence there by taking a radiograph with the probe in position.

The discussion was continued by Drs. Lee M. Hurd and Robert C. Myles and closed by Dr. Swain.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 3, 1906.

	Cases	Deaths
Measles	1903	45
Diphtheria and Croup	405	61
Scarlet Fever	222	5
Smallpox	.....	.....
Chickenpox	180	.....
Tuberculosis	475	225
Typhoid Fever	47	7
Cerebrospinal Meningitis	29	21
Typhus Fever	.....	.....
Yellow Fever	.....	.....
Cholera	.....	.....
Totals	3,251	364

Successful Surgical Intervention in a Case of Accidental Scalping.—Colle describes this case. The scalp, which had been torn from the head, was still adherent in the occipital region. The periosteum and the skull remained intact. The scalp was shaved and the two surfaces were then disinfected. The scalp was sutured in its entire circumference. The operation was performed without chloroform. It was entirely successful, for in eighteen days the wound was cicatrized. The patient, who at the time of the accident was in the eighth month of pregnancy, gave birth to a child at term one month later.—*La Presse Médicale.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending March 3, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	Feb. 10–17	5	..
San Francisco	Feb. 10–17	12	..
Delaware, Wilmington	Feb. 17–24	2	..
District of Columbia, Washington	Feb. 10–24	9	1
Florida, Jacksonville	Feb. 17–24	5	..
Kentucky, Covington	Feb. 15–22	1	..
Louisiana, New Orleans	Feb. 17–24	11	..
Maryland, Baltimore	Feb. 17–24	7	..
Massachusetts, Boston	Feb. 17–24	1	..
Michigan, Ann Arbor	Feb. 17–24	1	..
Ohio, Cincinnati	Feb. 16–23	2	..
Tennessee, Memphis	Feb. 17–24	8	1
Virginia, Petersburg	Feb. 1–26	17	..
Wisconsin, Appleton	Feb. 17–24	3	..
Green Bay	Feb. 17–24	3	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Jan. 6–20	10	..
Canada, New Brunswick—			
Kings County	Feb. 18	Present.	
Queens County	Feb. 18	"	
Sunbury County	Feb. 18	"	
York County	Feb. 18	"	
Toronto	Feb. 10–17	2	..
Winnipeg	Feb. 10–17	1	..
Chile, Iquique	Jan. 20–27	..	4
China, Shanghai	Jan. 13–20	1	1
Ecuador, Guayaquil	Jan. 28–Feb. 4	..	5
France, Paris	Feb. 3–10	11	..
Gibraltar	Feb. 4–11	5	2
Great Britain, Bristol	Feb. 3–10	1	..
Greece, Athens	Jan. 22–Feb. 5	5	..
India, Bombay	Jan. 23–30	..	10
Calcutta	Jan. 13–20	..	55
Karachi	Jan. 21–28	9	3
Madras	Jan. 20–26	..	22
Rangoon	Jan. 13–20	..	38
Italy, General	Feb. 1–8	..	33
Rome	Dec. 16–23	..	1
Russia, Moscow	Jan. 20–Feb. 3	12	1
Odessa	Feb. 3–10	23	1
St. Petersburg	Jan. 27–Feb. 3	4	3
Spain, Barcelona	Feb. 1–10	..	5
Seville	Jan. 1–30	..	11
Turkey, Alexandretta	Jan. 27–Feb. 3	20	4
Constantinople	Jan. 28–Feb. 11	..	11

YELLOW FEVER.

Cuba, Habana	Feb. 11	1	..
Ecuador, Guayaquil	Jan. 28–Feb. 4	..	9

CHOLERA.

India, Calcutta	Jan. 13–20	..	43
Madras	Jan. 20–26	..	2

PLAGUE.

India, General	Jan. 13–20	4652	3938
Bombay	Jan. 23–30	..	62
Calcutta	Jan. 13–20	..	32
Karachi	Jan. 21–28	7	6
Madras	Jan. 20–26	..	3
Rangoon	Jan. 13–20	..	23
Russia, Province of Astrachan	Dec. 25–Jan. 2	8	5

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 11. Whole No. 1845. | New York, March 17, 1906. | $5.00 Per Annum. Single Copies, 10c.

Original Articles.

THE BORDER LINE IN MEDICINE AND SURGERY.*

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NEW YORK.

Not a few cases of disease occupy that debatable ground which may be called the border line of medicine and surgery. No more fitting subject suggested itself to me for presentation this evening, feeling sure that it would lead to a profitable interchange of views, should I be fortunate enough to bring out certain salient features for discussion.

In our city the physician and surgeon can consult together, and though the former has not the difficulty of many a rural practitioner, who has to debate with himself, he is not freed from the responsibility of helping to reach the decision whether a given case be subjected to surgical or medical treatment; whether, in fact, the former is best adapted to relieve the patient from the malady which is undermining health or threatening life. At the present time asepsis enables the surgeon to do successfully much that could not be undertaken in the earlier years of my medical career. Pyemia, septicemia, and kindred complaints have become such rarities in well-conducted institutions, and as attendants on the operations performed by careful surgeons, that the physician is at ease in his mind on that score, and can with clear conscience, and with great hope of success, recommend surgical exploration and operation. It is worth while, however, to draw attention to certain conditions which may have a deterring influence even in cases of serious need.

Operation may be refused, owing to the patient's mental attitude, self-existing, or brought about by the intervention of relatives or friends. It should be our aim, then, to study the causes which underlie such a state of mind in order to obviate and overcome its dangerous effect. One of the most difficult objections to meet is that founded on a limited experience. The contention is that a relative or friend resorted to surgery with unsatisfactory or fatal result, whereas the statement had been made by the surgeon that all would go well. Herein lies the unfortunate part of the subject; and it is well for surgeons to realize that unfulfilled predictions, and a too great optimism in a given case may be the means of loss of life, or continued invalidism in another. It may mean, as in two cases recently observed, either that the undertaker is preferred to the surgeon, or that ill-health is endured. Surgeons at times take too roseate a view, when conservatism and more moderate statements would have left a better effect upon the minds of the family and friends.

Certain operations, moreover, are at times performed, which amount practically to taking surgical chance in hopeless diseases. It is the position of a drowning man catching at a straw. If, in addition, a large fee is charged, the laity are apt to take a serious view of the matter, and surgery is brought into more or less of disrepute. Operations, too, which may be viewed in the light of curiosity performances, are likely to generate the same effect. These may be denominated such as are undertaken where there is no reasonable hope of cure by surgical intervention, in order to more fully, if possible, make out the exact state of affairs. The mode of reasoning adopted in such cases has much plausibility. It is argued if the disease be the worst supposed to exist, then this of itself will eventually prove fatal, and, in consequence, lest perchance some other condition may be discovered which might be relieved, an operation is to be recommended.

In dealing with the border line cases it is in my judgment advisable to obtain as nearly as possible an accurate diagnosis before resorting to surgery. In this we find more or less diverging views, not alone between physicians and surgeons, but somewhat between each of these classes. It is easier at times to cut the Gordian knot than to attempt a solution of the difficulty by slower methods. In other words, careful attempts, employing all available means, should be made to form a correct diagnosis before resorting to the knife, except in cases of great urgency. It is customary amongst certain physicians and surgeons to believe that to make the diagnosis as the result of surgery is the better method. The difficulty, however, lies in the fact that by this course an unnecessary operation may be performed, or that the operation having been begun, may need to be repeated in another direction, because the incision has disclosed that the organ or viscus supposed to be affected is free from disease, and has brought out the fact that another organ is the site of trouble. Examples of this are not difficult to find: for illustration, allusion may be made to renal calculus, leading to appendectomy; gall-bladder disease mistaken for appendicitis, or renal trouble, and vice versa. Owing to reflected pain, pneumonia or pleurisy may simulate appendicitis or an acute abdominal disease needing operative procedure.

The rule, which should be formulated in the physician's mind, is that no operation should be performed without a careful examination of the body by a person competent to form an intelligent opinion. I have known surgeons on several occasions to refuse to operate, because they had found conditions in organs overlooked by the physician who had called for their services. Here allusion may best be made to the need of a careful cross-examination of the patient as well as an investigation of any conditions present on the body in order to determine if any luetic infection has existed which might have a bearing on diagnosis, and lead to an attempt to produce a cure by antiluetic measures. It

*Read before the Practitioners' Society of New York, February 9, 1906.

is certainly disappointing to cut into a morbid growth, removing a portion for the microscope, or to remove the growth, and then ascertain that it is of a specific nature which yields to specific treatment later administered. It would be wise to use this means first, and employ the knife if failure occurred. The objection is that at times an apparently beneficial effect is produced at first by the employment of these measures, where the course of the case with operation or the result of a post-mortem examination proved the growth not to be of a specific character. Such objection does not, in my opinion, have as tenable ground for insisting on operation first, as that above made for the reverse method of procedure.

Again, a thorough inquiry should be made as to medicines, which have been taken or administered. This holds good more especially where the debatable point is about nervous disease,—unconsciousness, or lethargy, for example, where otitis media had existed, being taken to indicate the possibility of meningitis or brain abscess. Past experience brings to my mind the following notable example in this direction, bromism, from large doses, of a bromide preparation in a susceptible person, being the explaining cause of somnolence with which a man who had suffered from otitis was brought to New York to be operated on for brain abscess.

But this inquiry is not needed in brain or ear cases alone; it may be of value in abdominal cases as well. Here it is necessary to consider medicines of an iritating nature, those of a sedative character, and especially such an astringent as lead. Moreover the possibility of accidental taking of a poison, or self-administration of the same with suicidal intent, is to be considered. It is at times stated that lead medicinally administered will not produce toxic effect. This statement is not correct, as observation of cases to which I have been called, and of one to whom I had given lead for loose bowels, has proved to my satisfaction. It should be remembered, also, that corrosive sublimate may not produce salivation, though taken by the mouth.

Not infrequently the physician may object to a second operation being performed upon a patient exhausted by diseased conditions and an operation for their relief—as after an operation for the overcoming of pelvic conditions, nephropexy is performed upon both sides. In case of a bad outcome from any of such operative procedures, not alone the surgery of such given case is brought into discredit, but, as I have already stated, surgery in general will receive from inconsiderate people readily, and from those also who reflect, a bad reputation. It is, however, to be borne in mind that if the patient has been informed that he or she may require two operations, and has expressed a positive wish for having everything attended to on one occasion, then the surgeon is so far absolved, as he has conscientiously believed that the patient was in a condition to have the extra operation.

Another question which may arise in this border land, relates to the assertion which is at times made, that if an operation is performed, then the state of the viscera, etc., having been observed, we are sure of the internal conditions. There exist enough cases which show that growths which an attentive inspection seemed to prove to have been of a malignant nature can disappear. This has occurred with palpable tumors supposed hence to be malignant and inoperable. Such cases baffle both sight and touch, and are in all probability to be considered as inflammatory masses. They also teach us that the disappearance of palpable masses in the abdomen must not be inevitably ascribed to medication used, or to light therapy where that has been employed.

Now that I have spoken rather fully as regards the surgical side, let us turn to the medical and reflect for awhile about the surgeon's complaint of the physician. Dr. McBurney read a paper at one of our meetings lamenting the late stage at which the surgeon, in not a few instances of malignant growth, was called upon to operate. It was then pointed out that the delay was frequently due to the patient having failed to appreciate the nature of the malady, or that any malady existed which required active measures. This was more especially regarding external growths, as of the breast. If at times physicians delay too long in these cases where sight and touch help in the ability to make out morbid growths, it is much more the case when we consider internal processes—cancer of the stomach, bowels, etc. At that meeting it was regretted, if my memory is correct, by physicians, that the necessary uncertainty too often delayed the question of operative intervention beyond that point where a radical operation could result in a cure. Of course this will only excuse physicians who make a careful study of each case, and where uncertainty is due to irregularity in the development of the phenomena of disease. Time is a great factor in the establishment of a diagnosis, and what was uncertain to a medical predecessor may, by the natural development, have become clear to the one who succeeds. This occurs so frequently that I am sure each can bring before his mental vision sufficient illustrations.

Physicians, in considering the etiology of disease —especially, though not exclusively, of the abdomen—need to bear in mind the possible influence of previous operation in the production of the pheomena of which the patient complains. Two recent cases have particularly emphasized this to me —one a case of obstinate vomiting occurring nine months after ventral fixation, cured by operation by a fellow member, Dr. W. T. Bull. Another, also of ventral fixation, with partial ovariotomy, having bowel symptoms with mucous colitis since.

Many as are the important considerations which demand attention both of the physician and surgeon, a few may be considered this evening because of their bearing on the propriety of an operation. Among the first in the mind of the laity is the question of heart strength. Not a few people fear that the heart will fail under anesthesia or subsequent thereto. Hence a careful study of its state is a help to the patient. Compensated valvular disease is no objection to a carefully performed operation, and it has at times been a surprise to me to notice how well patients with organic heart disease have stood operative procedure. The same has been true as regards hearts which were symptomatically weak, but which were able to carry patients not only through the period of anesthesia and operation, but also through that of convalescence.

The records of operations for empyema on persons who for some time may have had hearts so rapid and feeble that so-called cardiac stimulants were constantly employed to overcome the depressing influence of septic absorption will prove this contention. The same has been observed as regards weak hearts in operation for bowel obstruction. I have elsewhere alluded to a remarkable case in which a fellow surgical member and I were each rather fearful about the outcome for a lady somewhat advanced in years, who had had symptoms of cardiac weakness, and yet stood a rather long opera-

tion involving not only the section of a band compressing the lower part of the ileum, but also a resection of the injured portion of the bowel, making a complete recovery. The same favorable statements could be made by our gynecological members about certain necessary operations in their department. Yet this must be tempered by my previous allusions to inoperable cases.

No better place can be found for mention of the great advantage accruing to the patient by the employment of a thoroughly competent anesthetist who devotes himself to the study and practise of anesthesia. I have on several occasions been able to persuade people to have a necessary operation done by assuring them that a person of that class would have charge of the administration of the anesthetic. Most of us can go back to the time when the person who administered the ether or chloroform was craning his neck to get a view of the surgeon's work instead of minding his own business, with the not infrequent consequence which comes to people who attempt two things at the same time, whether it be riding two horses, mounting two stools, or attempting to study an operation and give an anesthetic.

In cases of jaundice of any considerable duration there is danger of hemorrhage leading to a fatal result after operation. Hence the physician has a double duty in so much as he should bear this in mind when treating obstructive jaundice, and decide at as early a date as possible in regard to the probable need of surgical intervention. If the necessity should be decided to exist, then a study of the blood coagulation time should be made. Formerly five out of six succeeding cases operated on because of obstructive jaundice by my advice, and by the foremost surgeons of this city ended fatally within a week after the operation from hemorrhage. Such a result was very discouraging, and for some time I had a strong mental disinclination to overcome before advising deeply jaundiced people to submit to operation. That it still exists the above remarks prove, but I have been impressed with the necessity of early operation in suitable cases.

More instructive have been the operations upon the kidney for decapsulation. They have tended to show the ability of patients with nephritis to resist, not only anesthesia, but also the operation. At one time physicians feared anesthesia if albumen and casts were present. Instead of this determination, it is important to ascertain the sufficiency of the kidneys—a little albumen and a few casts may exist for years after they were the cause of fear as regards the patient's ability to take ether and to overcome surgical procedures. In recent times the very careful studies made about the conditions of each kidney have been of marked benefit where disease of one kidney may demand operative relief. It may interest you to know that I have at times been consulted by the family physician in regard to the propriety of decapsulation of the kidneys, recommended to their patient by enthusiasts on no stronger basis than that the urine had a slight amount of albumin and a few casts.

The physician has not infrequently to consider carefully whether the degree of anemia present is such that he should not advise surgical interference until an attempt, where circumstances admit, had been made to bring about a better blood state. In each case of severe anemia it is wise to attempt this as above said, circumstances permitting.

The question arises whether it is better to have an absolute limit below which no severe operation would be performed. This limit has been set at 30 per cent. of hemoglobin (Mickulicz). Yet, as it is claimed that operations of some severity have been successful where the amount of hemoglobin has been below this, we can only reach the conclusion that other circumstances than the hemoglobin hold must at times be the determining influence. If there is an opportunity to improve the blood state where the hemoglobin is low, then prudence would caution physician and surgeon to postpone operative procedure.

The presence of diabetes in a person to be operated upon always produces a certain amount of fear as regards the outcome. Yet much will depend upon the type of the disease. Naturally, the rule should be that only operations of urgent necessity should be attempted upon those having the severer types. Trivial abrasions, such as the careless manicurist may produce on the toes, or which may follow a slight injury, have at times such serious outcome that a careful study should be made of any person having sugar in the urine who seeks surgical help.

The physician is obliged also, in view of certain published results, to face the question whether he shall immediately seek surgical aid in case of collapse due to shock from stomach perforation, etc. The surgeons have found that the old rule, to wait for operation until the shock has passed, has usually a bad result, or, rather, a worse outcome than the immediate performance of laparotomy with repair of damage.

At the close of the paper I may ask, are certain palliative operations of such value to the patient as to be inevitably seriously recommended? Assumed that the primary disease cannot be removed and that death in time is inevitable, is it worth while to recommend such operations as the production of a gastric fistula in cancer of the esophagus?—or artificial anus in an inoperable cancer of the rectum not markedly obstructive? I must confess that I do not feel inclined to urge the patient to dubious palliation, and I believe that we can best take council with the family or near friend of the patient upon this subject, placing the matter candidly before them; and if they decide against attempts at surgical palliation, I do not consider that they have acted very unwisely. I have been led to these considerations by a patient who refused an operation for artificial anus, which I recommended, because he had witnessed the life of a friend who had one. Moreover, it has rarely been my lot to witness a more unsatisfactory existence than that of a patient in whom a gastric fistula had been made by my advice for cancer of the esophagus. But in any case where a doubt exists about a possible cure, as in certain bowel growths, or in such as a rational doubt may obtain as to the nature of a process, then I would advocate an operation.

Many other matters seemed to claim consideration—as age, the condition of the arteries, defective vitality, etc.—but it seems to me that I have introduced in a rather haphazard way sufficient subjects to be of interest to you, and such, more particularly, as I have found at times causing me rather anxious thoughts, when considering the best for a patient who occupied this borderland of surgery and medicine.

A Prejudiced Opinion.—The Canadian nurse is preferred in the United States to her sister worker of American birth. Physicians in all the great cities on the "other side" readily admit their preference for Canadians. When asked his reason for invariably telephoning "Send a Canadian," a New York doctor replied, "They have steady nerves and are more obedient."—*Canadian Magazine.*

FEVER IN TERTIARY SYPHILIS.

By DUDLEY N. CARPENTER, M.D.,
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THE *Lancet* for November 25, 1905, states that though it is well recognized that fever may occur in the secondary stage of syphilis, its occurrence in the tertiary stage is not so well known and may cause difficulty in diagnosis. It quotes the following case of Dr. A. Birt, reported in the *Montreal Medical Journal* for October:

"A man, aged forty years, who had chronic urethritis and stricture, for which he had undergone operation, complained of loss of flesh and strength. A painless enlargement of the liver had been detected by a genitourinary specialist. There was no history of alcoholism, syphilis, or malaria. The complexion was sallow and the temperature and urine were normal. The liver was moderately and the spleen a little enlarged. A tentative diagnosis of congestion or early cirrhosis of the liver was made. Under treatment the patient improved. Eight months later, when he was again seen, he had much changed for the worse. For two or three months his health had failed and he had lost weight and strength and had suffered from cough, night sweats, and pains in the lower part of the chest and right shoulder. The chest and sputum were repeatedly examined for tuberculosis with negative results. The patient was pale and sallow, but not jaundiced. The feces were scanty, dry, and pale. There was a constant evening rise of temperature to 100° or 101° Fahrenheit, a morning remission to subnormal and profuse night sweats with occasional slight chills. The liver was moderately enlarged and had a well-defined margin. It was very tender, and on deep respiration dragging pain was felt over it and radiated to the right shoulder and upper chest. The spleen was somewhat enlarged, palpable, and tender. Two months later light was thrown on the diagnosis by the detection of a small tender node at the costochondral junction. Only then did the patient admit that he had contracted syphilis eleven years previously. Under moderate doses of mercury and iodide of potassium astonishing improvement took place. After forty-five grains of the iodide had been taken the fever disappeared. The appetite promptly returned and the pains ceased. In six weeks he gained twenty-two pounds in weight and in seven weeks the liver, which measured six and three-quarters inches in the right nipple line, had receded to the costal margin and was no longer tender. Complete recovery ensued.

"When fever occurs in tertiary syphilis, night sweats, loss of weight, and pain in the chest often occur and the disease is liable to be mistaken for tuberculosis or malarial fever. In the *Transactions* of the Association of American Physicians for 1898 Janeway has reported six cases of syphilitic fever in which the patients were treated for tuberculosis. Syphilitic fever has also been mistaken for typhoid fever and for septicemia."

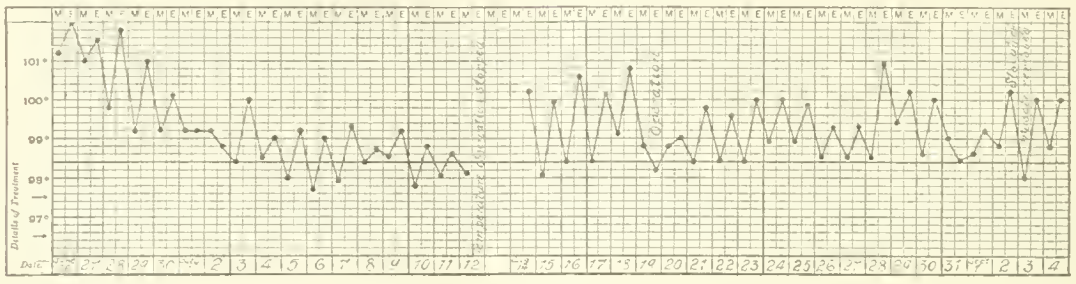

CHART 1.

This difficulty in diagnosis of fever in tertiary syphilis has recently been illustrated by two cases under treatment at the U. S. Naval Hospital, Puget Sound. It would seem, therefore, of interest to report these cases in some detail:

CASE I.—Male, aged twenty-four years, admitted June 26, 1905, with remittent fever, said to have originated at Panama, the first attack of fever having occurred while his ship was at that port. He was treated with quinine and arsenic for several weeks and was able to return to duty. The fever soon returned, however, and he was transferred to this hospital. Quinine had been given in large doses. Examination on entrance showed the patient to be emaciated and sallow. Family and past history negative (syphilis denied). Habits, good. Chest and abdomen apparently normal. Urine normal. Quinine was stopped at once and Fowler's solution with an iron tonic pill was given. Examination of the blood was made daily without finding the malaria plasmodium. The hemoglobin (Tallquist) was 95 per cent. There was no leucocytosis.

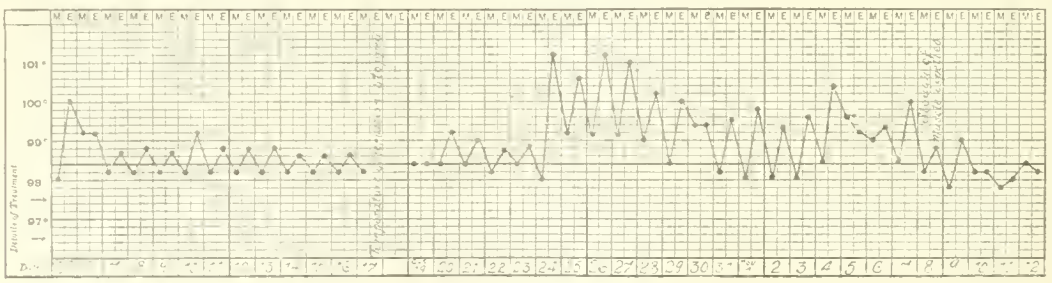

CHART 1, Continued.

On June 30 the patient had some cough, and as he had been sweating at night with occasional chills his sputum was examined for several days without finding the tubercle bacillus. On July 7 a slight swelling over the sternal notch was noticed

and he was accused again of having had syphilis, with admission on his part that he had had the disease four years ago, but believed himself cured owing to long-continued and careful treatment. The diagnosis was therefore changed and specific treatment instituted. He was given gradually increasing doses of protiodide of mercury in pill form, with ungt. hydrargyri externally over the swelling. In a few days there was a decided improvement in his appetite and strength and some gain in weight. He was allowed to get up from his bed and for a week the temperature was not taken. It was believed that the slight evening rise was due to syphilitic cachexia. The return of sweats, headache, and slight chills caused the temperature to be again determined on July 15. On July 28 there was a decided increase in the swelling extending from the sternal notch along the border of the right sternocleidomastoid muscle.

The protiodide pills at this time had to be discontinued, and potassium iodide was given. By August 12 there was a decided loss of flesh and strength, and for a week the swelling was carefully watched in view of operation. The protiodide pills were again cautiously used. It was finally decided to make an exploratory incision. Therefore on August 19 he was given chloroform, and an incision to the bone was made over the sternum, extending upward and exposing the lower part of the sternocleidomastoid muscle. A pocket of thin brown pus was found at the sternal attachment of the muscle, the base being formed by a small area of necrosis of the anterior surface of the sternum. Several necrotic fragments of bone were removed by the curette. The anterior border of the sternal portion of the muscle was necrotic and a small sinus extended beneath it for a distance of about three inches. All the affected muscle was removed and the sinus curetted. The upper part of the incision was sutured and an iodoform gauze drainage wick inserted through the lower opening of the incision. The patient felt much improved after the operation. There was a decided gain in strength and appetite.

Daily dressings of the wound continued, the bone being gradually covered by granulations. On August 29 the protiodide pills had to be again discontinued and the potassium iodide given alone. The sinus in the neck did not heal readily, and on September 2 a large piece of necrotic muscle was discharged. At this time the nasal bones showed signs of necrosis, although there had been a purulent nasopharyngeal catarrh for several weeks and necrosis was suspected. A small ulcer of the velum palati appeared on September 9.

The treatment was now changed to a fresh mixture of mercury and potassium iodide. Malt extract was given as a tonic. Local treatment of these ulcers by saline irrigation, Seiler's solution, H_2O_2, silver in solution or in solid stick, and powdered iodoform, all were faithfully used. There would be a partial healing and then a fresh area would become involved. During October, tonic pills and cod liver oil were given. Finally on October 18 there was so little improvement of these discharging ulcers and the open sinus in the neck that it was decided to omit the mercury and give the potassium iodide alone. Observation seemed to show that with the mixed treatment containing mercury whenever the dose was moderately increased the lesions became aggravated. The potassium iodide was rapidly pushed to 120 grains daily, and on November 8 another slough of muscle was discharged from the sinus. From this time on the sinus of the neck rapidly healed, the ulcer of the palate gradually closed, and the discharge from the nose ceased. The patient gained his former weight and strength, and finally on December 8 he was discharged from the service with no open lesions. There had been no fever for nearly two months. The usual "saddle nose" resulted from necrosis of the nasal bones and the right sternocleidomastoid muscle was reduced to a thin band.

Case II.—Male, aged twenty-seven years. This patient was admitted with the diagnosis of bronchitis chronica and suspected phthisis. There was a history of syphilis contracted eleven years ago, and it was stated that syphilitic treatment had been recently used. Examination on entrance, July 11, 1905, showed the patient to be emaciated and anemic. Examination of the heart, lungs, and abdomen gave negative results. Family and past history negative. He complained of slight dry cough and pain in the chest, with headache and sweats at night. There was no appetite and the bowels were costive. The cervical and submaxillary glands were enlarged and there was a marked pyrrhœa alveolaris of both jaws. The urine was normal. The blood contained no malarial plasmodia. The sputum was examined daily for several days without finding tubercle bacilli. Over the sternum, at the junction of the manubrium and gladiolus, there was a slight swelling, tender to the touch.

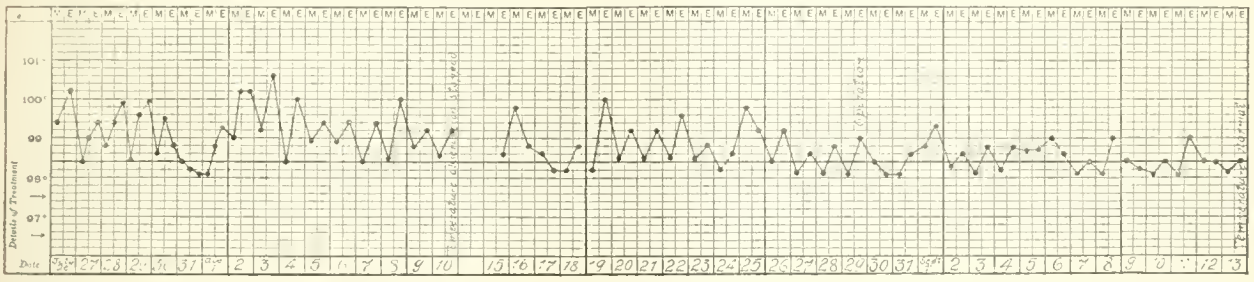

Chart 2

The treatment instituted was mercurial ointment locally to the swelling on the sternum, and potassium iodide internally, beginning with five grains and gradually increasing the dose. The pyrrhœa alveolaris was treated by having the teeth scaled and then giving a mouth-wash of Dobell's solution with hydrogen peroxide swabbed on the gums once daily. During the latter part of July, cod-liver oil and iron tonic pills were given. During August moderate doses of mercury were given by inunction for ten days, followed by pills of protiodide of mercury.

There was a decided improvement at first, and the swelling over the sternum apparently subsided, but the inflammation of the gums finally compelled the withdrawal of the mercury. The patient began to lose flesh and strength again. On

August 26 the potassium iodide was resumed and malt extract given as a tonic. The diagnosis at this time was changed to syphilis and the swelling over the sternum was believed to be due to syphilitic necrosis.

On August 28, under chloroform anesthesia, an exploratory incision was made. The periosteum was reflected and two areas of caries of the bone found beneath; one, three centimeters in diameter and the other about one centimeter in diameter, small and irregular. These were thoroughly curetted and irrigated, then a gauze wick was led through the periosteum and the incision closed above and below. There was immediate relief to the pain in the chest after the operation, and for nearly three weeks a decided gain in strength and health. The wound healed quickly and the sinus closed on September 23. On September 14 the potassium iodide was stopped and mercury again tried, but on September 28 it was necessary to withdraw the mercury, owing to an increase in the pyrrhœa alveolaris and the appearance of a new area of tenderness over the lower part of the sternum.

On September 30 a small nodular swelling was noticed over the right side of the frontal bone. This increased in size until on October 6 it was decided to give mercury again cautiously in a fresh mixture with potassium iodide. On October 11 the nodule on the frontal bone had increased to the size of a walnut, with decided evidence of fluctuation. On October 18 the mixed treatment had to be again withdrawn and ascending doses of potassium iodide were alone used, the patient taking 135 grains before the physiological action was apparent. The pain over the lower part of the sternum disappeared and there was a slight decrease in the size of the swelling on the day when he was discharged from the hospital and from the service, November 1. He also gained in flesh and strength and there had been no fever for nearly two months.

These cases are not only of interest in showing the difficulty of diagnosis in cases of tertiary syphilis with fever, but the results of the operative treatment indicate a possible cause for this hectic fever. Observation of the mercurial treatment also emphasizes the necessity of administering mercury with caution in such cases. Although it is a well-known saying that "mercury cures and potassium iodide relieves," both of these patients improved more rapidly when the iodide alone was used. The danger of large doses of mercury in syphilitic cachexia being realized, yet its use being regarded as a necessity to produce a cure of the disease, it was only after repeated trials, in both these cases, that the real value of the iodide was appreciated.

A MORE LIBERAL DIET IN TYPHOID FEVER.*

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This subject has been approached with some hesitancy for two main reasons: First the profession, as a whole, is strongly opposed to more liberal feeding in enteric fever, and one who advocates it runs the risk of sacrificing, to some extent at least, the confidence which may have been reposed in him by his brother physicians; second, an argument in favor of a more liberal diet might be misconstrued into one for too full a diet, and thus do harm.

I wish to present to you the results in a small number of cases, twenty-six in all, which I have treated on a more extended dietary during the past year. The results have been no better, as far as ultimate recovery goes, than in cases treated with a more restricted diet, but my patients have been far more comfortable, happier, and have, I think, convalesced more promptly.

The treatment, dietary and otherwise, of all diseases has changed from time to time, but it must be acknowledged that typhoid fever, from the days long before it was separated from other continued fevers (1813–1837) to the present time, has been rather a notable exception. Following the precepts of Hippocrates, Galen, Celsus, and a long line of distinguished physicians urged a very rigid diet during the acute stage of fevers, consisting chiefly of barley water and the like. In the latter half of the seventeenth century the teachings of Thomas Sydenham, who followed a vigorous antiphlogistic plan, had a strong influence on the feeding in continued fevers. Water-gruel and barley-gruel represented his dietary with the addition of a few spoonfuls of broth several times a day. During the eighteenth century and the early part of the nineteenth, the diet became more liberal, but was exclusively vegetable. Farinaceous gruels, fruit juices, and soft fruits were allowed. Very restricted diet prevailed, however, until the time of Graves of Dublin, whose influence was felt in the latter part of the first half of the nineteenth century. He was considered to have very liberal ideas as to feeding in fevers. He recommended well-boiled gruel with sugar and lemon juice or panada, of which a spoonful was given every third hour. In France, Brossais, arguing from the basis that all febrile conditions depended upon gastro-intestinal irritation, urged a most rigid diet in fevers. The doctrines of Brossais were attacked by Trousseau, Hérard, Monneret and others, and were finally overthrown in 1857.

Milk did not come into favor until the last third of the past century, but since that time it has been almost the sole dependence in typhoid fever.

It would appear from the foregoing that there has been a gradual, very gradual, tendency to increase the amount of food given in continued fevers ever since the time of Sydenham, and I should not be surprised, if in less than fifty years, those looking back over our exclusively milk diet will feel much the same sympathy for our patients as we feel for those poor fellows of not so long ago who, though parched with thirst, were allowed little or no water. The argument advanced by the advocates of the milk diet is, that, on account of the inflamed and usually ulcerated condition of the small intestine in typhoid fever, liquid food should be given. They seem to forget that milk ceases to be a fluid the moment it reaches the stomach, and that all food which is properly prepared and digested reaches the ileum, the most common seat of greatest inflammation, in a more or less fluid form. In view of the latter fact it would seem that the food in typhoid fever only needs to be finely divided and digestible, and to be accompanied by a sufficient amount of water. E. K. Herring puts it rather aptly when he says, "It should be free from strings and stones and skins and bones."

It has been proved experimentally that the digestive and absorptive powers, during typhoid fever, fall off only five to ten per cent., so that impaired digestion is not sufficient argument in favor of milk alone.

*Read before the George Washington University Medical Society, November, 1905

It has long been recognized that typhoid fever is a general infection, the bacilli having been found in practically all the tissues of the body; the intestinal lesions, therefore, are by no means the whole matter for consideration

Curschmann's analysis of the causes of death in 580 cases of typhoid fever (Nothnagel: "Encyclopedia of Practical Medicine") shows: Severity of infection, 46.9 per cent.; intestinal perforation, peritonitis, 16.5 per cent.; hemorrhage, 7.8 per cent. Thus it may be seen that only a little less than half died from the severity of the infection, whereas a little less than one-fourth died from intestinal lesions. Taking these as representative figures, it is quite clear that we have twice as much to fear from the inability of the patient to withstand the severity of the infection, as we have from the intestinal lesions. It would seem equally clear, then, that the first indication is to maintain the bodily vigor at the highest point possible. It has also been suggested by Barrs (*British Medical Journal*, 1897) that starvation would tend to prevent the healing of ulcers in the intestine, in the same way as in similar conditions in other parts of the body. It also seems likely that if the patient were allowed a greater variety of food during the febrile stage, there would be much less likelihood of bad results from indiscretions during early convalescence.

For several years I have been inclined to break through the ironclad rule of almost an exclusively milk diet; so very cautiously and with many fears and misgivings have I done so. So great has been the prejudice in favor of an absolutely liquid diet, as represented by milk with the occasional substitution of animal broth or tea, that the physician is almost afraid to take the risk of suggesting any change, knowing full well that, should anything go wrong he would be held responsible, if not by the patient and his friends, certainly by the profession, because of reckless feeding.

Since typhoid fever cannot be aborted, nor influenced by any form of specific medication, our efforts are directed toward so ordering the general conduct of the case as to avoid complications and to hasten recovery.

The trend of thought of the present day is toward the belief that most diseases are due to specific poisons, and that recovery depends upon, either the exhaustion of that poison, or the development or an antibody of some sort, which renders it innocuous.

It becomes necessary, then, to keep the patient in the best possible condition to withstand the ravages of the disease until such time as recovery shall take place.

Since many are exposed to typhoidal infection who do not develop the disease it is very evident that some have greater resisting powers than others, and it is probably due to this fact that we have not all had the fever. It seems reasonable to suppose that a long attack is due, in part at least, to the inability of the individual to overcome the poison. Therefore, we should do all we can to develop the resistive power, or in other words, to keep up the strength of the patient. To accomplish this end we must give sufficient food. Now it is almost impossible to give milk alone in sufficient quantity to supply the needs of a man through a long illness, even though it comes nearer to being a perfect food than any other article.

Voit's table shows that the normal man of an average weight of seventy to seventy-five kilos (150 to 165 pounds) doing a moderate amount of work requires a total food value of 3,000 calories per day to maintain the body in good physical condition. It has also been estimated that the body at rest requires 2,300 calories. Now the man suffering from typhoid fever would certainly require a larger food value than the man at rest because of the greater energy evolved in fever, if from no other cause. This excess would be hard to estimate accurately, but it has been placed at 500 calories, which would bring the total food value requirement up to 2,800 calories, for a patient suffering from typhoid fever.

Now if 180 c.c. (six ounces) of milk, representing 200 calories, be given every two hours day and night, the total food value would, in twelve feedings be 2,400 calories; but few patients are wakened every two hours for food, so that nine feedings, at most, would be given, representing but 1,800 calories. Thus it is readily seen that the usual exclusive milk diet falls short by 1,000 calories, more than one-third of the supposed requirements.

Chittenden's experimental work in physiological economy has apparently proved that, so far as those in heath are concerned, a food value of 2,000 to 2,500 calories, representing about half the nitrogenous food previously supposed to be necessary, is quite sufficient to maintain a perfect bodily and mental equilibrium. Of course this new scale rather throws doubt on all former calculations as to the bodily requirements in health and to some extent also in disease. But aside from all economic calculations it is well known that an exclusively milk diet, six ounces every two hours, does not satisfy the craving for food. We also have the most practical evidence of insufficient nourishment in those suffering from typhoid fever in their enormous loss in weight. Of course we recognize the fact that no matter how carefully we feed these patients there will surely be a loss in bodily weight, but it need not be so great.

In selecting a diet for typhoid fever patients the following important points should be borne in mind: It must be highly nutritious; it must be easily digested; it must be innocuous; it should be palatable. The food must possess sufficient nutritive value to maintain, as far as possible, the bodily equilibrium. Since the digestive functions are likely to be somewhat impaired, the food must be of such a kind and so prepared as to throw as little extra work upon them as possible. The food must be innocuous. Neither by its coarseness, bulky residue, gas-producing or other properties, should it tend to cause the serious complications of hemorrhage and perforation. Outside of the comfort and pleasure which palatable food affords the sick man, Pavlov has shown that it has an important bearing on its digestibility.

It has been my custom of late to begin the treatment of a case of typhoid fever, no matter on what day of the disease it may come under my care, with the regulation six ounces of milk every two hours, night and day while awake. Animal broths are given in place of milk, to vary the monotony for those who can take milk, and as a substitute for those who cannot. Each day, after the subsidence of the more acute symptoms, such as headache, I ask the patient if he is hungry, and as soon as he replies in the affirmative a soft-boiled or poached egg is allowed, and if well borne, the number is gradually increased to three or more a day. The next additions are jelly or blancmange, custard, soft toast, the carefully selected soft part of baked apple, or rice which has been boiled four hours. The last to be tried are scraped beef or chop, very finely divided chicken and baked potato, the latter only when digestion seems specially good.

I do not want to be understood as advocating so full a diet in every case, but each case should be

studied individually, and when, from the condition a more liberal amount seems advisable, it should be given.

I cannot but believe that most of the foods mentioned are quite as digestible, far more palatable, and less likely, if anything, to cause perforation or hemorrhage by their local action or gas production than milk. It is well known that milk often produces tympanites, that it leaves a large residue after digestion, and is more likely to cause impaction than almost any other food. Often in typhoid fever large curds are detected in the evacuations. It is then customary to reduce the already insufficient supply of milk by further dilution. Why not try something else?

Before analyzing my tabulated list I would like to call attention to one case whose unusual severity has materially raised the averages. This woman had fever for 97 days, was in bed 127 days, and in the hospital 135 days. Of course such a lengthy illness is uncommon, but it must be included.

In the deduction of averages I have disregarded small fractions as immaterial.

I wish to thank Dr. Homer Fuller, late resident at the Garfield Hospital, for having taken from my histories the data in this table.

Case No.	Day of Disease on Admission.	Day of Disease, Temperature Normal.	Day of Disease, Out of Bed.	Total Hospital Days.	Relapse.	Hemorrhage.	Delirium.	Highest Temperature.	Widal Reaction.	Complications.	Result.
No. 1..	15	63	67	71	No	Yes	Yes	104.6	Pos.	Hem.	R.
No. 2..	9	44	54	55	No	No	Yes	104.6	Pos.	Delir.	R.
No. 3..	3	31	40	50	No	No	No	104.8	Pos.	No	R.
No. 4..	2	32	40	49	No	No	No	103.8	Pos.	No	R.
No. 5..	5	45	61	63	No	Yes	No	105.6	Pos.	Hem.	R.
No. 6..	4	41	55	56	No	Yes	Yes	105	...	Hem.	R.
No. 7..	6	31	42	46	No	No	No	103.6	...	Pleur.	R.
No. 8..	6	97	127	135	Yes	Yes	Yes	105	Pos.	Hem.	R.
No. 9..	4	20	39	46	No	No	No	104	Pos.	No	R.
No. 10..	7	61	55	82	Yes	No	No	105.6	Pos.	No	R.
No. 11..	6	44	54	53	No	No	No	105.6	Pos.	Pleur.	R.
No. 12..	15	36	50	35	No	No	No	105	Pos.	No	R.
No. 13..	6	57	58	63	No	No	No	104.2	Pos.	Osteom.	R.
No. 14..	7	20	40	41	No	No	No	102.8	Pos.	No	R.
No. 15..	10	29	39	32	No	No	No	104.4	Pos.	No	R.
No. 16..	5	24	38	41	No	No	No	104.2	...	No	R.
No. 17..	9	47	61	56	No	Yes	No	104.8	Pos.	Hem.	R.
No. 18..	15	43	39	30	No	No	No	102.8	Pos.	No	R.
No. 19..	5	9	22	20	No	No	No	102.6	Pos.	No	R.
No. 20..	22	53	73	59	No	No	Yes	106	Pos.	Delir.	R.
No. 21..	6	11	22	18	No	No	No	104.2	Pos.	No	R.
No. 22..	8	16	30	27	No	No	No	103.4	Pos.	No	R.
No. 23..	3	24	39	48	No	No	No	104.4	Part	No	R.
No. 24..	3	44	53	85	No	No	No	105.2	Pos.	No	R.
No. 25..	3	38	48	45	No	No	No	104	Pos.	Phleb.	R.
No. 26..	1	51	61	31	No	No	No	104.2	Pos.	No	R.
Average.	7	39	50	52	2	5	5				

Of these 26 cases all recovered. The shortest duration was 9 days, the longest 97, the average 39; the earliest day on which a patient was out of bed was the 22d, the latest, the 127th, the average, the 59th. The shortest stay in the hospital was 18 days, the longest 135, the average 50.7. (The last figures, relating to the number of days in the hospital, are of no value, as the date of admission was in some cases very late, while others left before they were completely recovered.) There were two relapses; in five cases one or more hemorrhages occurred, but in only one instance, as it happened, had an exclusively liquid diet been exceeded before the occurrence of hemorrhage. Delirium was present in five cases. Other complications were not more numerous than usual except pleurisy, which was twice recorded.

While I know that twenty-six cases form far too small a number from which to draw conclusions of any great value, yet it is my belief that the careful personal observation of even a few cases should be recorded, for it will require the weight of evidence of many clinicians to shake the implicit faith of the profession in the exclusive milk diet.

From my own experience I am prepared to say that the more liberal diet is certainly not deadly; if it possesses no special advantages neither does it show special disadvantages. The advocates of the more liberal diet, among whom I take my stand, claim that the patient is more comfortable; that the attack is slightly shortened; that convalescence is more prompt, and that neither relapse, hemorrhage, nor perforation is more frequent.

The advantage which is most apparent is the increased comfort of the patient. Typhoid fever is at best long and tedious, and we are all familiar with the days and weeks during which our patients clamor for more to eat. The pangs of hunger are much harder than nany other discomfort that they are called upon to bear after the first ten days of fever. Now if more liberal feeding does no harm this one advantage—the comfort of the sick man—is sufficient argument in favor of its adoption, but more is claimed.

F. C. Shattuck (*Boston Medical and Surgical Journal*, Vol. 148, 1903) reports a mortality of 10 per cent. in 233 cases on an exclusively milk diet, while the mortality was but 8.45 per cent. on an enlarged diet. Fitz's analysis of the cases of typhoid fever in the Massachusetts General Hospital (*Boston Medical and Surgical Journal*, 1899) shows that the mortality was less in Shattuck's cases, on a more liberal diet, than in those of his colleagues, on a milk diet; and that relapses were 2.9 per cent. less frequent in the liberally fed. W. H. Smith has brought these statistics up to 1902, and shows that in 563 cases, hemorrhage, perforation, and relapse were no more frequent among the more liberally fed.

Shattuck's diet list is about as follows: Minced lean meats, scraped beef, soft part of raw oysters. Soft crackers with milk or broth, soft puddings without raisins, soft toast without crust, blancmange, wine jelly, apple sauce, and macaroni.

Of course the way to become convinced is to try the system, but those who are interested will find instructive articles, besides those already mentioned, by Marsden (*The Lancet*, January, 1900), the late F. A. Packard (*Therapeutic Gazette*, 1900), Murrell (*Medical Brief*, St. Louis, 1900), Morris Manges (MEDICAL RECORD, 1900), and H. A. Hare (*Therapeutic Gazette*, 1904). The latter states that his attention was first called to this matter by an attack of typhoid fever, during which, though he had no appetite, yet he felt underfed. He felt that he was attacked on the one hand by the bacillus of Eberth and on the other that his powers of vital resistance were being reduced by partial starvation. Two of the most thoughtful articles on the subject are by J. B. Nichols (*American Medicine*, Vol. 9, No. 18, and MEDICAL RECORD, 1905). Thayer's translation of Bushuyev's article has attracted wide attention, and although the latter's results were excellent, I am not yet, nor do I ever expect to be ready to advise such a diet for typhoid fever patients as he advocates. It is rather too much on the order of that for a day laborer.

It is far from my intention to speak ill of the bridge which has carried so many safely over, and indeed, from long experience, I have a most wholesome respect for the milk diet in typhoid fever, but I do believe that the pendulum is making a belated swing toward more liberal ideas with regard to feeding.

1315 NEW HAMPSHIRE AVENUE.

THE CURABILITY OF TUBERCULOSIS.

By HENRY F. LANGHORST, M.D.,

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I WISH, in brief, to report a few cases of tuberculosis that have been under my care during the past five years. As the results obtained were favorable, the review of these cases may tend to dispel the gloom that dominates the prognosis of tuberculosis and make the word sound less ominous.

These reports have not been thoroughly worked out since the sputum was not examined for bacilli and tuberculin was not used as a diagnostic aid, but since these aids to diagnosis are often uncertain, the possibility of making a diagnosis, on the symptom group associated with the physical signs, seems reasonable. We must remember that statistics show that tuberculosis, either healed or active is found in 80 per cent. to 90 per cent. of all people. Since only 12 per cent. die, the difference between 85 per cent. and 12 per cent. shows the great percentage of cases that recover. When one realizes the omnipresence of the tubercle bacilli and the many avenues through which infection may occur, these statistics do not seem excessively high. If the history of the cases, showing evidences of healed tuberculosis, in the lungs, were carefully investigated, the inquiry would reveal in many instances a history of prolonged or tardy convalescence following the zymotic diseases, especially measles, pertussis and influenza.

V——. Age three years. Family history negative. Child had measles, six weeks previous to my first visit. Cough persisted, child grew emaciated, refused to eat, had fever and chills. On examination found her greatly emaciated, drowsy, with rapid respirations, loose cough with loud râles, temperature 101°, and pulse 150. Physical examination revealed râles over entire chest, bronchophony over right apex posteriorly. Increased fremitus and dullness was also present. The child had lost about fifteen pounds in weight and presented an appearance which did not inspire much hope of ultimate recovery. She developed enuresis with an alkaline, foul smelling urine. Her teeth were rapidly decaying and numerous alveolar abscesses were present. She had subnormal morning temperature with afternoon rise to 101° to 102½°.

She was placed in a perambulator and was wheeled out in the fresh air every day. Her chamber at night was well ventilated and during the day was flooded with sunlight. Her diet consisted of milk, cream, eggs, rice, and other easily assimilated foods. She was given three drops of creasote carbonate after meals in milk. This was increased to eight drops. She was also given calcium hypophosphite in syrup after meals. Under this treatment she began to show improvement after the first week. The second week she began to observe things about her and at the end of the second month was able to walk unaided. She made a complete recovery in three months. Her enuresis yielded to hexamethylenamine and fluid extract of arbor vitæ.

R. B——. Age six years. Father had attack of pulmonary trouble while a young man, which got well however, after a season of out-door life in Canada. It was evidently tuberculosis. The boy had many attacks of false croup and had bronchitis every winter. Had pneumonia once. The family moved from Chicago to the country, seeking to benefit the boy's health. While out in the country the maid of the family was taken with tuberculosis, which her physician failed to recognize. The maid expectorated quite a good deal and was often left in charge of the boy. Her condition finally become serious and she left for Denver. Two weeks before the boy came under my care he had an attack of bronchitis following measles. His convalescence was slow and he continued to have fever. His appetite was poor and he was rapidly losing in weight. On examination a well-developed chest was found; limitation of motion on the left side was very apparent; his face was flushed and temperature registered 103°. The only evidence found was in the left side near the nipple. Here crepitant râles were found with bronchial breathing; fremitus was increased but dullness could not be clearly made out on account of the heart. His temperature would run up to 103½° every afternoon and was normal, until noon. His cough was troublesome and of a hacking character. The diagnosis rested between an unresolved pneumonia and tuberculosis. The subseqeuent course proved it to be tuberculosis. He was put in a sunny, well-ventilated room and given increasing doses of creasote carbonate (m. 3 to 10 t. i. d. in milk). Absolute rest was made imperative. Alcohol rubs were given when fever was high. In a week's time his fever did not exceed 102°. He was now taken out of doors every day in a go-cart and spent most of the time in the open air. He continued to improve so rapidly that at the end of two months his afternoon temperature was only 99½°. At this time, unknown to me, the parents took the child to Dr. N. S. Davis, Jr. to get his opinion, as they doubted the diagnosis of tuberculosis. He substantiated the diagnosis and recommended the out-door treatment. At the end of three months the temperature was normal and no signs of disease were present. The following winter he developed a sore throat, the culture showing a grip infection. He soon recovered from this, but for a week developed an afternoon rise of temperature. This soon disappeared, however, on the exhibition of creasote. He is well at this time (two years later) and is again in the city.

O ——. Age four years. No history of tuberculosis in the family. The boy was healthy until he contracted measles, which occurred about two months before he came under my observation. He continued to cough following the measles, and gradualy began losing both in weight and strength. He would lie in his crib with half-closed eyes, and was in a lethargic state. He refused nourishment and developed a jaundice. His stools were clay-colored and bowels were constipated. His temperature was 101° and pulse 160. His cough was loose and frequent. He was greatly emaciated and seemed too weak to even move his arms. The chest was filled with râles, and bronchial breathing was detected in both the apices posteriorly. This was very marked. This occurred in February. A good hot fire was continued day and night and the windows kept well opened. A screen was placed before the bed to protect him from draughts. He was given sodium phosphate to move the bowels, and small doses of nux vomica and hydrastis were given until the jaundice cleared. In addition to this he was given creasote carbonate in four-drop doses. He gradually improved. His appetite became better and the jaundice disappeared. His temperature never was excessively high, and remained normal after the third month. His cough did not

disappear until July. He was given calcium hypophosphite during the last three months with apparently good results.

P——. Age three years. At the age of one year she had an attack of pneumonia with delayed resolution. She was not expected to live at this time, and hovered between life and death for about three weeks. She subsequently recovered after a tardy convalescence. She contracted whooping-cough in August 1905, and the parents used different nostrums without result. In the middle of September I saw the child at my office and was surprised at the change that had taken place in an interval of two months, when I had last seen her. The child was constantly crying and making a conscious effort to suppress the cough. She was extremely emaciated. weighing only nineteen pounds. Every attempt at moving her would result in a crying fit which in turn would bring on a paroxysm of coughing. An eroding discharge issued from her nostrils. On the forehead were two small ulcers that she persistently kept picking. She would sink together and lie in a heap. She was unable to hold herself erect. Many râles were heard over the whole chest. The whole right side seemed congested, fremitus was increased, on that side, and percussion elicited dullness. A satisfactory examination could not be made. Her rectal temperature was 101°, pulse 140. She remained in about the same precarious condition the next month, during which time a troublesome diarrhea developed. In September her appetite began to improve and she gained in strength; her cough grew less and she became cheerful and would laugh and talk. This was considered a good omen, since she was so very irritable, whining and crying almost continually, the previous two months. At the present writing (November) she still continues to improve, and for the past week has been able to walk unaided. Very little hope was entertained for the recovery of this patient in the beginning, but a very hopeful prognosis can now be given. The treatment consisted of out-door life all the day, a well-ventilated room during the night, creasote carbonate from three to eight drops in milk after meals, dovers powder and chalk mixture for diarrhea, calcium hypophosphate in two-grain doses. Lime water was given with milk. Small doses of nux vomica and hydrastis were also given. In this case as in the others the calcium hypophosphite seemed to act very beneficially.

A——. Age twenty years. Student. Family history of pulmonary trouble. Had pneumonia twice. First came under my attention while suffering with an attack of tonsillitis with marked involvement of the glands of the neck. His temperature was 101°, the pulse 130. His pulse persistently remained rapid. The adenitis persisted after all evidences of tonsillar inflammation had disappeared Guaiacol ointment gradually reduced the swelling. An afternoon rise of temperature and a continued rapid pulse directed attention to the chest. He had a slight hacking cough which was attributed to a slight catarrh of the throat. His chest was the typical one generally associated with pulmonary tuberculosis, namely, a long narrow chest. Expansion was limited on the left side. Auscultation revealed bronchial breathing in left apex with prolonged expiratory murmur. Cogwheel respiration over left side. The vesicular murmur on right side was weak, assuming more of a bronchial quality. Impaired resonance over left side. In view of the physical findings and symptoms a diagnosis of incipient phthisis was made. He was requested to give up his school life and lead an active out-of-door life. He followed instructions and his temperature and cough disappeared. He is again pursuing his studies preparing himself for the ministry. He has been advised to abandon his aim and choose a life which will demand more out-door activity.

U——, student. Age seventeen years. Family and previous history negative. Complains of loss of appetite, weakness and cough. He attributes the cough to fumes from furnace in the department of mechanics. He has a slight fever 99°, pulse 90. Prolonged expiration in right posterior apex with cogwheel respiration. No dullness nor râles. Chest poorly developed. Was given nux vomica and Blaud's pill and five drops of creasote carbonate. He was kept from his studies and given out-door employment. He soon regained his strength and has grown quite strong.

Before mentioning another instance, I wish to describe in brief a case of glandular tuberculosis that seemed the focus of many infections.

W——. Age twenty-one years, was afflicted with tuberculosis of the cervical and axillary glands. The glands were repeatedly removed by Dr. A. Bevan but the process continued. Sinuses were present which discharged pus. This condition persisted for five years when he succumbed to tuberculous peritonitis. His sister developed a cough with loss in weight and an afternoon rise of temperature (101°). Physical signs indicative of tuberculosis were present. She was ordered from the house, and out-door life, full diet and creasote carbonate were prescribed. She made a symptomatic recovery. Another sister living below had an ulcer on the tibia which took on a tuberculous appearance. A boy living three doors away developed an attack of tonsilitis with involvement of the glands of the neck. The glandular enlargement persisted. The glands were removed, once, by Dr. E. Senn. They recurred but since have become smaller and are held in abeyance by ultra violet ray treatments. In the next house to this subject of glandular tuberculosis, a school boy of eight years developed a cough accompanied by rapid emaciation. His family history was unquestionable in reference to tuberculosis. He had no previous pulmonary affections. His pulse varied between 100 and 120. Temperature varied between 101° and 103°. The physical signs were positive. To the right of the spinal column at the sixth dorsal vertebræ marked bronchial breathing with bronchophony could be detected. Crepitant râles were present and dullness was elicited. He was taken out of school, out in the fresh air, given a liberal supply of food and with this carbonate of creasote and syrup of calcium hypophosphite. He responded immediately and in a month his temperature was normal and the cough nearly gone. He had gained about six pounds. He has made a perfect recovery and his lungs seem perfect.

These instances are but a few of many that could be recited. They are occurring every day in the practice of all physicians. Many are not recognized, but under tonics and rest recover spontaneously, the only evidence of the tubercular process being a scar in the lung.

That this disease is yielding to the well-directed efforts toward its extermination is attested to by the figures of the statistician. The key note of success in the treatment of this disease is an early diagnosis. It does not require a laboratory, nor extraordinary diagnostic acumen to make a

diagnosis of incipient phthisis. A careful study of the patient and a proper interpretation of the physical findings will result in an early diagnosis. Proper therapeutic and hygenic modalities now directed against the invading enemy will so reinforce nature as to make her conquest an easy one. Once the enemy has been repulsed we can assist in perfecting a system of defense that will withstand the daily onslaughts of this ubiquitous germ.

THE CONSERVATIVE TREATMENT OF URETHRAL STRICTURE.*

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To many it may seem that the last word has been said upon urethral stricture, that the various forms of treatment are clearly laid down in the modern text-books on genitourinary surgery, and that there is little left to be written upon this subject.

On the contrary, I believe that the average general surgeon, and even some genitourinary specialists, have a very wrong conception of the condition and the treatment usually indicated. Many of these men are teachers in the medical colleges, and the students are told that urethral strictures should be dilated when that is possible, and when it is not they should be cut, either by internal or external urethrotomy. This is correct, and while certain men may have very proper and well-defined ideas as to when dilatation is impossible and when cutting should at last be advised, there are too many surgeons who have but a poor understanding of the possibilities of dilatation or else too little patience and practice to manipulate the tight stricture of small caliber. Cutting, therefore, is frequently advised in cases that should be dilated.

Strictures fall into the surgeon's hands in one of two ways: The patient has retention, and his family physician is unable to enter the bladder with either his soft rubber catheter, silver catheter, or even perhaps with the Gouley instrument, and the surgeon is called. Other cases present themselves for treatment without any acute symptoms, the patient knowing that he has stricture and appreciating an increasing difficulty in voiding urine, becomes alarmed and seeks his physician's, and, subsequently, the surgeon's aid.

I venture to state that in both classes of cases, if the stricture be fairly tight and dense, the surgeon will recommend some cutting operation. He will be particularly likely to so advise the patient, if the latter is a working man who has little time and money to devote to the improvement of his urethral caliber. It has long been common teaching that the man of this class can be cut and returned to his regular occupation almost immediately, while time can only be spared for dilatation by the individual of larger means and greater leisure.

This is one of the greatest errors that have been passed to succeeding generations of surgeons. The poor man, after a so-called successful urethrotomy, leaves the hospital, passing a greatly improved stream of urine, and feeling quite confident that his trouble is over. He is told that sounds must be passed at more or less frequent intervals for the succeeding year, and that if, after that time, no contraction occurs, he will be cured. That he does not in the great majority of cases return for this treatment is a matter of common knowledge to all surgeons in institutions where much of this work is done.

It requires but little knowledge of surgical pathology to appreciate the fact that cut surfaces in constant apposition, are more than likely to unite, even if urine is regularly passed over them, and this is the condition after all internal and many external urethrotomies. Agnew[1] said: "However valuable may be incision, it must not be deemed a radical cure for stricture, notwithstanding what is said to the contrary by sanguine urethrotomists. The 'splice', of which so much is said, and which occupies the gap between the sides of the divided parts, is granulation tissue; and the resulting cicatrix will always retain that invincible power of contraction. The tendency to coarctation in the canal, it is true, is lessened, but it is not destroyed; and hence the patient must be instructed to pass a metal sound once or twice every month if he expects to keep out of the hands of the surgeon at some future time."

The brilliant results claimed by active urethrotomists have no doubt in many cases been due to the fact that the supposed stricture was really a point of physiological narrowing in a normal urethra.

Dr. Otis taught that the urethra was a tube of even caliber from the bladder to the meatus; and that any encroachment upon its lumen was a stricture, and should be cut. Four points of narrowing exist in the normal urethra. (1) At the meatus. (2) At the proximal end of the fossa navicularis. (3) About midway in the pendulous urethra. (4) At the bulb. It is easy to understand that "splicing" a normal urethra in a young man will "cure" his "stricture".

The main objections to cutting operations are the following:

1. Several weeks' detention from business, a very serious drawback in these days of active struggle for existence.

2. The fact that, after operation, the individual has to be treated for a year or more, in practically the same manner as if no operation had been done, and his stricture had been gradually dilated.

3. The mortality rate. This is a much disputed point, but I believe it to be at least 5 per cent. in both internal and external urethrotomies.

J. William White[2] makes the following statement regarding mortality from internal urethrotomy: "The practitioner who decides to cut a stricture anterior to the bulbo membranous juncture, must do so with the full knowledge that there are at the very least two chances in a hundred of losing his patient. There should certainly be definite and well grounded reasons for accepting this risk, and the operation which involves it should show results unmistakably superior to those of gradual dilatation—a procedure with practically no mortality."

A trifling operation that is so easily done that it is done far too frequently, is meatotomy. While it is often necessary to enlarge a meatus, it is easy to cut too freely, and the resulting lack of resistance to the stream of urine sometimes interferes seriously with the muscular tone of the bladder. The gaping meatus also invites venereal infection.

I will not enter in detail into the treatment of stricture by gradual dilatation. This paper has been written as a plea for this more conservative means of treating stricture, and I will only mention briefly what I believe to be the important points in a method of treatment that is not new, but is neglected by some colleagues.

In men beyond middle age the anterior urethra should be thoroughly flushed before any instru-

*Read before the Associated Physicians of Long Island, October 21, 1905.

mentation. In younger men it is safer to make this a rule, although I do not believe that the sound bladder is easily infected by the germs ordinarily found in the anterior urethra.

As a lubricant for urethral instruments, vaseline should never be used. It has been found in the center of calculi in the bladder, and is difficult to remove from instruments. The best lubricant is made from Irish moss, and contains a small percentage of formalin. The lubricant should never be applied to the instrument by the hand of the surgeon, a common and most unsurgical procedure. It should be dropped from the container upon the meatus, and the sound or other instrument passed through it.

In endeavoring to find the opening in a stricture with the filliform guide, I have found filling the urethra with a number of the straight instruments, and successively attempting the passage of each, to be more successful than the use of the instruments with the variously twisted ends.

Most of us were taught to never use force in the passage of sounds. This I believe to be good teaching, and should be followed by those of little experience in urethral instrumentation. If it were lived up to by the genitourinary surgeon, many dilatable strictures would have to be cut.

In the use of tunneled sounds in very tight cases, without force the instrument would never enter the bladder. This is equally true of larger plain sounds. How much force can be used, and how to direct it, can only be learned by experience.

It is good practice to irrigate the bladder and urethra after any instruments have been passed. In some tight strictures, this is exceedingly painful, and I therefore instruct my stricture patients with healthy bladders to hold their urine for a couple of hours before treatment. It is voided immediately after dilatation and irrigates the urethra without discomfort to the patient.

Most authorities advise the passage of two sounds at each treatment, one to be the size of the largest passed at the previous treatment, and the second, one size larger. I have found it more comfortable for the patient to pass one sound, increasing one number each time.

When it seems undesirable to enlarge a meatus that will not admit a sound of proper size, one of the several dilators may be used. The one in most favor to-day is Kollmann's, with four arms. I do not believe, however, that any dilator can massage a stricture as well as the smooth, solid sound.

The element of spasmodic stricture is usually added in cases of retention due to true stricture. On this account it frequently happens that not even a filliform guide can be passed. Under general anesthesia this spasm is relieved, and instruments can frequently be passed with little difficulty.

Strictures due to gonorrhea may occasionally be seen that require cutting, but I believe they are few and far between. Certain congenital strictures, and those of traumatic origin require operation. The operation of choice in strictures anterior to the bulbo membranous juncture is that suggested by Reginald Harrison;[3] combined external and internal urethrotomy. This with perineal drainage gives absolute rest to the divided parts.

In closing I will report several cases that I believe illustrate the value of this method of treatment.

Case I.—J. F. æt. forty-nine years, was referred to me on May 13, 1905, at 1:30 A.M., by Dr. F. J. McDonough for retention of twenty hours' duration. I was able to relieve his retention with a small Gouley catheter. At 9:30 A.M. of the same day he again applied for relief, and was catheterized with the same instrument. He gave the following history: Several attacks of gonorrhea, the last in 1886. Was operated on for stricture by a prominent general surgeon of Brooklyn in 1900, internal urethrotomy. Was up and about the ward a day or two after operation and left the hospital a week later, able to pass a good stream of urine. He was instructed to report at frequent intervals for the passage of sounds. This he never did. He had three attacks of retention in the year before I saw him. All relieved with soft catheters. During the six weeks following his first visit to me, I dilated his stricture to 25 French, after which he discontinued treatment.

Case II.—J. B., æt. twenty-four years, referred to me by Dr. Sewell Matheson, July 24, 1905. He had first consulted a well-known Manhattan specialist who was unable to enter his bladder with any instrument, and who told him that an operation would be necessary. History: Had gonorrhea eight years ago, and for the past five months had noticed increasing difficulty in voiding urine. His stricture, which was at the bulbo membranous juncture, was passed without special difficulty with an 11 French tunneled sound. He is still under treatment, and this week I passed a 26 French sound. This case well illustrates the folly of cutting the poor man. This man was in receipt of a very moderate salary; his wife nearly at term, and several weeks in the hospital would have been a great hardship.

Case III.—G. W., aged fifty-one years. Was taken in the ambulance to the Williamsburg Hospital July 9, 1905. Retention for sixteen hours. No previous trouble. No history of gonorrhea. Several physicians had endeavored to catheterize him without success. The only instrument that could be made to enter his bladder was a filliform guide. He was anesthetized with ether and the Gouley catheter passed with some difficulty. Since then he has been dilated to 28 French and is still under treatment.

Case IV.—A. H., aged twenty-seven years, referred to me by Dr. A. C. Jacobson, August 15, 1905, by whom he had been treated for two attacks of retention. The first time I saw him was in the hospital where Dr. Jacobson had sent him, feeling sure that some operation would be necessary. I was able with the use of considerable force to pass an 11 French tunneled sound. This was followed by free bleeding. Since then I have been able to pass larger sounds up to 24 French, and he is still under treatment. There is some bleeding after each dilatation. This man was operated upon by a surgeon in Manhattan four years ago. Internal urethrotomy. His stricture was dilated for some months after the operation, contraction occurring again later.

Case V.—A physician came to my office at 6 A.M. on May 27, 1905. He had been unable to urinate for the preceding seventeen hours. Three preceding attacks of retention. Gonorrhea ten years ago. Only a filliform could be passed to the bladder, the effort to introduce a Gouley catheter along the filliform, produced very free bleeding.

He was taken to the hospital, anesthetized with ether and the Gouley instrument passed quite easily. He has been dilated to 24 French, and is

still under treatment, which I regret to say he has not continued very faithfully.

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THE SCHWARTZE-STACKE OPERATION IN CHRONIC SUPPURATIVE OTITIS MEDIA.*

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For the benefit of those who are not familiar with this operation, I will describe it in a superficial manner, without speaking of the technique in detail.

After throwing the ear forward as in an ordinary mastoid operation, the antrum is entered, and all the bone intervening between it and the attic of the middle ear is removed, together with a considerable portion of the posterior canal wall, thus converting the middle ear, the attic, the antrum, the additus, and the bony canal into one cavity. Care is taken to carefully investigate every recess, where disease may be present, and to obliterate it. Special care is required in this respect in the region of the attic, and additus, and the tegmen of the antrum. The middle ear will usually be found to contain a large quantity of granulation tissue and detritus, especially where the suppuration has extended over a period of months, and this together with the remains of the ossicles, is carefully removed. Indeed in cases of long standing not only granulation tissue and carious ossicles, but even sequestra extending up to the dura are often found.

It will be seen that it is practically impossible for any area of unhealthy bone to remain obscured in this operation, for everything is laid bare for inspection, and the dissection may be carried as far down the mastoid as is necessary to thoroughly eradicate every particle of necrosis, even the tip may be removed if necessary, without seriously interfering with the subsequent progress of the case, or the production of marked deformity. So much for the bony excavation; and now the membranous canal remains to be dealt with. This may be done in several ways. The method that appeals most to me is that of Körner. An incision is made in the membranous canal wall, above and below, extending as far outward as the concha. The skin is dissected from the underlying structures in the intervening space, giving a tongue-like flap. The underlying structures are then cut away and sufficient of the cartilage removed to allow the flap to fall gracefully into place. The posterior wound is then closed and all subsequent dressings are done through the canal. By introducing a speculum the whole interior of the cavity may be illuminated and inspected at every dressing, and herein lies one of the greatest advantages of the operation, for no matter what emergency may arise or what conditions may develop, they are directly under our observation, and are very accessible for treatment. Exuberant granulations can be either curetted or controlled with caustics, any tendency toward eustachian catarrhal conditions is readily treated, and as a rule in about six or eight weeks the entire cavity has epidermatized and is dry, leaving the patient with practically no deformity, and entirely freed of an offensive discharge, or a bony necrosis, that every day was a menace to his life.

Now the question arises, what are the indications for this radical and delicate operation, what are the conditions that render it justifiable, and what are the conditions, that in chronic cases, to the experienced and conscientious otologist, render its performance imperative, as a safeguard against future trouble?

I think a discharge that, in spite of careful treatment, has continued for over a year, may be characterized as a chronic one, and this I think, when all other means have failed to effect a cure, is a justification for the operation. Even more so is a discharge that will remain quiescent for a while, only on the slightest provocation to break out anew, especially if the hearing be impaired.

In cases showing exacerbations of that kind, there is no doubt, even though for a while they may appear to be cured, the primary etiological factor remains, and though it may not be so serious as other forms to be mentioned later, it is always an embarrassment to its possessor, and a tax on the general system, besides offering a favorable condition for the beginning of an acute mastoiditis. How often in cases of this class do we see an acute mastoiditis develop, possibly after the existence of intermittent discharge for years, and mastoiditis is always a serious condition even though operation be early resorted to. We occasionally see these cases terminate fatally, owing to extension of the disease to the brain or sinus, whereas if operative interference had been instituted years previous, the process would have been limited to a smaller area, and these important structures never would have been reached.

Another condition that occasionally accompanies intermittent purulent discharge, is chronic mastoiditis, in which there is an attack of headache, slight otalgia, furred tongue, and slight tenderness over the mastoid, with or without sagging of the posterior canal wall. The temperature may not be high, or there may be none at all, but nevertheless there is the mastoid tenderness, and a chronic inflammatory process is in progress. These attacks may disappear for months, only to return on the slightest provocation, and I consider they are a justification for an exploration of the mastoid process, and if necessary the radical operation. I have seen a great number of these mastoids opened where one could not help but be in doubt as to the condition he was going to find, but where it was considered advisable to give the patient the benefit of the doubt, even at the risk of opening a healthy mastoid. Almost invariably the antrum and mastoid cells are found to contain either free pus, or granulations in a process of disintegration, and not infrequently the mastoid process is involved from the antrum to the tip, and isolated pockets may even be found in the cells behind the sinus. One is frequently astonished at what extensive trouble may exist without any other manifestations than slight attacks of pain and tenderness. In most cases of this kind a simple Schwartze operation is inadequate and a more radical procedure is necessary.

So much for the simple purulent discharge, but the cases about which I wish especially to speak, are those which have been going on for a greater or less time, with the presence of granulations in the middle ear, or polypi in the canal; a fetid discharge exists, and a bony necrosis is present in the attic, slowly but surely making its way upward to the brain, or backward to the lateral sinus.

* Read before the Mount Vernon Medical Society.

The hearing is usually markedly impaired, and these are the cases in which I consider one is not justified in allowing the condition to continue. In doing so we are doing an injustice to our patient, for a greater menace to his life can scarcely be imagined. No surgeon at the present time would think of allowing a necrosis of bone in any other part of the body to progress for months, and years, without active interference, especially if it were approaching a joint or other important structures, yet here where an undoubted necrosis exists, in a far more dangerous locality, it is frequently deemed safe so long as the discharge, the very indicator of necrosis, continues free.

We should not lose sight of the fact that about 90 per cent. of all brain abscesses, and nearly all cases of lateral sinus thrombosis are due to suppuration extending from the middle ear, and it is not in cases of acute infection or acute mastoiditis, that these complications most frequently occur, but in the very class of chronic cases of which I have been speaking, with or without an acute condition being grafted on. Strange though it may seem, these conditions are sometimes very difficult to diagnose, and I do not doubt that many such cases have terminated fatally without the true location, or the true nature of the trouble being known. In no other way can the great increase in the number of these cases being operated on at the present time be explained. I think there is no doubt many such conditions have been mistaken for something else, in fact in a few instances I have known such to be the case. One young man's history in particular will illustrate what I mean. He was coming to one of the clinics at the Manhattan Eye and Ear Hospital, at rather lengthy intervals for a chronic aural discharge, accompanied by the formation of colesteatomatous masses in the middle ear. On one of his visits a polyp was discovered in the canal, and its removal advised, for which purpose he entered the hospital. The temperature chart revealed the fact that in the evening he was running a temperature of 104 degrees, which fell to normal in the morning. On questioning him he said he had malaria, and had been under treatment for it for some time. He had been losing weight and was emaciated and sallow, and had occasional chills. In addition to his septic symptoms, on close examination slight jugular tenderness was found, but there was no mastoid tenderness. These signs and symptoms, in connection with cholesteatoma in the middle ear, led me to the conclusion that he had lateral sinus thrombosis with septic absorption, and the usual operation for exposure of the lateral sinus was performed. The following condition was found: On opening the mastoid a large amount of cholesteatoma was found in the antrum and middle ear. The sinus was opened and found to contain a disintegrating clot, extending as far as the jugular bulb. Considerable pus was found surrounding the sigmoid sinus, the bony covering of which was entirely destroyed. Yet that young man showed very few symptoms localizing the trouble to his ear. Of course the jugular vein was ligated and resected, and the clot thoroughly removed. The neck wound, and that behind the ear healed kindly, but the case terminated fatally from pulmonary abscess and emypema, as such cases frequently do. That is typical of the manner in which these cases may be overlooked. He doubtless never had malaria, the blood at no time showing the plasmodium, but owing to the fact that he had chills and sweats, he was put on maralial treatment without inquiry regarding his ears. I think that such cases will continue to occur until where there is any doubt the ears are examined as a routine practice, because patients who have suffered for years from otorrhea, become so accustomed to the condition, that they consider it a part of their normal existence, and fail to mention it altogether.

Brain abscess with or without a marked rise in temperature, with its lassitude and mental depression, coated tongue, and headache, is very liable to simulate typhoid fever, and other general conditions, and for a long time be overlooked. These errors which are indeed very difficult to avoid, are undoubtedly additional evidence of the gravity of neglected middle ear suppuration. When these complications have occurred is not the proper time for successful intervention; it is too late then, for the large majority of such cases terminate fatally, but the proper time is as soon as necrosis in the attic and extending toward the antrum can be diagnosticated. Meningitis also is frequently due to extension of infection from the middle ear through the thin plate of bone forming its roof, and this complication, like the others, is generally fatal.

Besides these graver possibilities, one possessed of a foul discharge is hampered in business and handicapped in life, and occasionally avoided by his friends. The very consciousness of such a condition must produce a worry detrimental to even the most robust. Now of course this operation has its difficulties, and its dangers, not so much to life, but to that which is cherished almost as much, personal appearance. There is always the possibility of getting a temporary or even a permanent facial paralysis, but this is not a probability, especially in skillful hands, although one can never tell when he will be so unfortunate as to get so unhappy a result. I have seen operations, where apparently the technique was faultless, and where no facial twitch was observed, followed by well marked, but temporary facial palsy. This may be due to injury or traction on the chorda tympani nerve, to concussion during the operation, or to hemorrhage into the Fallopian canal, and they usually clear up in six months or a year. The external semicircular canal is also exposed to injury, which is followed by dizziness and nausea of a severe type, and occasionally by leaking of cerebrospinal fluid. The dura or lateral sinus may be exposed, but as a rule these are not serious mishaps, beyond possibly delaying the closure of the posterior wound for a short time.

Now what are the results to be expected, and what is the status of the operation as a cure for chronic middle-ear suppuration. As a rule the results are very gratifying indeed, as you will see from the cases I present this evening. The deformity cannot be noticed on casual inspection, and it requires close observation to notice that anything has been done. Skin grafts, inserted either at the time of operation or subsequently, are thought by some to hasten the healing, and do so in some cases, but my personal experience with them and that of many of the men whose work I have watched, is that they are unsatisfactory, and I think that epidermatization occurs almost as rapidly without them. A very important factor in obtaining a good result is careful after-treatment, and no matter how skillfully the operation may be done, if this is neglected failure is very likely to be the outcome. With regard to the hearing it is in nearly all cases impaired before the operation, and no improvement should be expected; on the other hand it may be a little worse, but occasionally it is improved. This may be due to the removal of

the carious ossicles, and granulation tissue, that filled the middle ear. I have in mind a young man on whom a mastoid operation was done on both ears, about two years ago, and owing to imperfect healing of the wound, and continuous discharge from the canal, a Schwartze-Stacke operation was done on the right side, about one year ago. It did very nicely, and gave the young man no trouble, while the hearing was almost double what it was in the left ear. The rapidity of healing, and its permanency depend a great deal on the thoroughness of the operation. Every particle of bone showing any tendency to necrosis should be removed, and the surface of the bone carefully inspected for sinuses. In like manner the amount of deformity, which I have said in most cases should be very slight, is governed largely by the amount of cartilage that is removed from the auricle, and the form of cutaneous flap that is made. However, I do not think the deformity in the soft structure is a consideration in the more serious class of cases, for here the operation is a necessity, and to me seems about the only rational and surgical manner of dealing with so treacherous a condition.

Now to consider it as a cure. It is really the only method that can be suitably applied to all cases. No doubt we have all had the same experience in douching the ears, and in treating them by the dry method. In some we succeed in arresting the discharge for a time at least, in others we fail entirely; but these more conservative measures should be given a very thorough trial, before we submit a patient to so serious an operation as the Schwartze-Stacke. It is only in cases where all other measures have failed and necrosis surely exists, that we resort to it. When we consider the conditions in the middle ear we can readily understand why we fail so frequently in our efforts to effect a cure. The cavity is imperfectly drained by the eustachian tube, and also by any opening that may exist in the drum, and besides being itself subdivided by the ligaments, it communicates with so many bony spaces and cells, that it is almost impossible to thoroughly clean it by any amount of douching.

The simple Stacke operation which was devised for the cure of otorrhea is not adequate for the reasons I have already mentioned, namely, that while the necrosis existing in the attic, and around the tympanic ring may be removed, we are still ignorant of the condition of the antrum, and communicating mastoid cells, and the folly of dealing with necrosis in the middle ear, and leaving the antrum full of granulations and infected débris is at once apparent. Moreover, in the simple Stacke operation there is greater danger of injuring the facial nerve, because we cannot see the surrounding parts so well, and we have not so definite and well-defined landmarks to guide us.

Before closing, I would mention another class of cases coming under the head of chronic suppuration, to which this operation is admirably adapted. It is those where, following a chronic discharge, an acute mastoid trouble has developed. If when dealing with a case of this kind the surgeon merely opens the antrum and allows the pent-up pus to escape he has far from completed his work. He cannot be assured that there does not exist in the attic and surrounding parts a necrosis of which he is ignorant, and no doubt this is the reason so many mastoids do not heal promptly, and drag on for weeks with a discharge both from behind the ear and from the middle ear itself. In no other part would such a suspicious area be left uninspected, and the only way in which we can properly, and thoroughly explore it, is by the removal of the posterior canal wall. When we have done this we have laid bare the entire chain of bony spaces, and no focus can remain unobserved to continue the infection and discharge. I feel sure that with added experience, and care in the selection of proper cases the Schwartze-Stacke operation will grow in favor, for undoubtedly there is no other operation that in chronic otorrhea, or in acute exacerbations of chronic conditions, gives the same completeness, and the same thoroughness; no other operation so universal in its application, and none which to the surgeon gives the same sense of security, in cases that at times are fraught with the greatest danger.

DISPLACEMENT OF THE FALLOPIAN TUBES TO PRODUCE STERILITY.

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As there are occasional instances when an abortion is justifiable as a necessity in saving life, so also are there conditions in which the possible occurrence of pregnancy would expose the patient to danger that it is most desirable to avoid. Ordinary measures unhesitatingly and very properly recommended under such circumstances are not infallible and around their fallibility hangs a perpetual cloud of uncertainty fraught with much anxiety. If the truth of these statements be admitted, and it is believed that abundant proof of their truth is not wanting, then a method of safely and positively insuring sterility should have a proper place in gynecological surgery.

The following cases are quoted as illustrating types in which the writer believes such an operation justifiable.

Mrs. A., farmer's wife, age 32 years, married ten years. Three confinements at term and one induced abortion. First labor tedious, but normal. Living child. The limbs were somewhat swollen in the last weeks of pregnancy, but no examination of the urine was made. Second labor, urine albuminous, puerperal eclampsia, instrumental delivery, child lived, convalescence tedious, could not nurse child. Third labor, same history, but conditions more severe. Child still born. Albumin was present for several months after labor. When pregnancy occurred again, abortion by curettement was advised and performed by two physicians, personally familiar with the history of the case. Subsequently the patient was sent to me for repair of cervical and perineal lacerations. In addition I recommended displacement of the tubes to insure sterility. It was accepted and carried out according to the technique to be described later. This is the youngest woman on whom I have performed this operation.

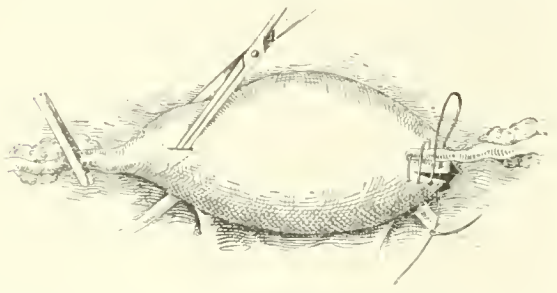
Mrs. B., age 39 years. Six confinements at term, with living children and two miscarriages, one at three and one at five months. Deep cervical laceration. Perineal laceration through anal sphincter. Vaginal outlet much relaxed. Complete uterine prolapse and rectocele. General health very poor by reason of debility. Patient emaciated and tissues flabby. Through an anterior vaginal incision and separation of the bladder, ample room was obtained easily to deliver first one cornu and then the other of a rather large uterus. The tubes were displaced, vaginal incision closed with rows of continuous catgut sutures, folding the tissues into a heavy column to support the bladder. Perineal floor repaired. Great improvement in general health resulted. The writer does not ordinarily favor the secondary repair

of cervical or perineal laceration of moderate severity during the childbearing period, as difficult labor and recurrence of the injury is prone to follow. Such repair may indeed cure a long-continued sterility, and pregnancy and parturition follow. There are conditions, social and physical, in which such a result is a most happy one, but there are others in which it may be followed by a train of undesirable, not to say dangerous consequences.

The following case will illustrate the cure of sterility by repair and reposition of the uterus.

Mrs. C., age 42 years. Youngest child 19 years; no pregnancy since; general health poor; patient emaciated and nervous. Right kidney prolapsed to brim of pelvis and fully movable, uterus retroverted. Cervical and perineal lacerations of moderate extent. Nephrorrhaphy, ventral suspension of the retroverted uterus, and repair of the lacerations was followed by great improvement in general health. Within a year she became pregnant. According to last news from this patient, who lives more than a thousand miles away, she was in the sixth month of pregnancy, which was progressing normally except for some abdominal pain which the attending physician said might be due to the ventral suspension (peritoneal only). In this case, the event is one desired and it is to be hoped and it is believed that a safe delivery may follow.

There are, however, conditions, both physical and social, in which it would be better for the patient to bear the ills she has than to incur the dangers of



pregnancy in the years nearly approaching the time when by the decree of nature the woman is, by the menopause, to be made incapable of bearing children.

If cervical repair in the years nearing this period is prophylactic against malignant disease, and there are those who support this statement by statistics and arguments, then surely there are cases in which chronic inflammatory disease of the cervix should at this time be cured in this way. If the purpose of these and other repair operations is to protect life and improve the general health, then it would seem to be poor ethics to expose the patient to the recurrence of the same conditions in addition to the other burdens if it could be avoided.

Another class of cases in which the procedure is a proper one, is in those women over forty years of age, where a peritoneal ventral suspension is not sufficiently strong to cure an extreme prolapse or a procidentia. Here a firm high ventral fixation gives the best results. Such an operation, however, is not advisable in the presence of a possible occurrence of pregnancy. To perform it would simply be to invite the danger of abortion for the relief or the disasters incident to a mechanical dystocia. Of course the woman may struggle along with makeshift relief by pessaries or plastic operations until the change of life occurs. But why wait for it? Pregnancy at this period and in this class of cases is seldom desirable or advisable. The following cases are illustrations of this type.

Mrs. D., age 41 years, youngest child seven years. Three years ago had an operation performed in an Eastern city for repair of cervical and perineal lacerations and ventral suspension by Kelly's method for retroversion. From this time on she became a victim of vesical irritation by reason of pressure of the anteverted fundus on the bladder. The woman was not neurasthenic. Operation: Abdomen was opened through line of former incision. The peritoneal attachment of the uterus had stretched into a band about the size of a lemonade straw and about four inches long. Displacement of the tubes and high ventral fixation were followed by immediate relief and permanent cure.

Mrs. E., age 45 years. Nine children. Last delivery six months ago. Instrumental delivery on account of inertia of the uterus. Child died on second day. Present condition, poor health and general debility. Vaginal outlet much relaxed. Uterus and bladder prolapsed, cervix lacerated. The uterus was curetted, lacerations repaired, abdomen opened through a short transverse incision, tubes displaced, and ventral fixation done.

In making this argument for the propriety of a preclimacteric production of sterility, it must be distinctly understood that we are not recommending it as a routine practice. We are only contending that there are cases, of which illustrative types have been cited, in which it is not only justifiable and proper, but in which we may consider it an imperative duty

The method I have to propose is the displacement of the uterine end of the Fallopian tubes. It is accomplished by three snips of the scissors and three stitches for each tube. It requires but a moment of time and adds nothing to the risk of an abdominal operation done for any other purpose. When the fundus of the uterus is to be exposed for this operation alone it may be done either through anterior vaginal or a very short suprapubic incision. The vaginal route is advisable for this operation only when the vaginal outlet is much relaxed, or when anterior colporrhaphy is to be done for the support of a cystocle. In these cases, the room is ample, and the surgeon of experience in vaginal operations on the body of the uterus can easily perform it in this way. This route, however, is more difficult and should not be undertaken unless the operator has had practice in this class of work, for there is some danger of injuring the bladder or ureters.

Abdominal incision is easier, and preferable. The writer uses almost universally the short transverse incision described in the Medical Record of November 7, 1905, not only for this, but for other intrapelvic operations.

The technique is as follows: When the cornu of the uterus is brought into the field of incision, seize the tube near its uterine end with a pair of forceps. Thrust the sharp point of a pair of scissors into the cornu, and cut out the uterine end of the tube by a V-shaped incision with two cuts of the scissors. Catch the wedge-shaped point of the excised end of the tube with the forceps, draw it out a little between the partly closed blades of the scissors and cut it off. The severed end of the tube will then slip ino the peritoneal sheath and be completely covered by it. Pass one catgut stitch through this cuff, then through the fundus posterior to the inner end of the V-shaped incision from behind forward and tie it, thus fastening the closed end of the tube back of its original position. Pass two more stitches around the tube and through the cornu to close the V, control the bleeding, and fasten the tube to the outside of the closed cornu.

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BIOGRAPHICAL SKETCH OF MICHAELIS, THE PIONEER WORKER ON NERVE-REGENERATION.

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NEW YORK.

NEUROLOGIST, RANDALL'S ISLAND HOSPITALS; CONSULTING NEUROLOGIST, MANHATTAN STATE HOSPITAL AND CRAIG COLONY FOR EPILEPTICS.

While the history of our knowledge of nerve-regeneration is very ancient—the fact was known and commented upon by Galen, and even Hippocrates—yet the modern aspect of the subject is supposed to have been original with Cruikshank in 1776. However, the first carefully published experiments were brought out by Michaelis in 1785. Every authentic review of nerve-regeneration repeatedly cites Michaelis as a pioneer in this field of neurological surgery. No one, as far as I am aware, has stated where and when Michaelis did his experiments. I therefore undertake to clear up this point in historical research. The data at hand show that Michaelis did his work here in New York city during the closing days of the Revolution (1781-1783). I have been at considerable pains to verify this fact, and also to collect from collateral sources (French and German) all the data concerning Michaelis' somewhat varied and peripatetic career from Göttingen to Paris, to London, and thence as staff surgeon of the Second Hessian contingent to New York city, and finally to Germany again. Inasmuch as neurological surgery has recently been so active in the clinical field of nerve anastomosis as a treatment of a variety of peripheral palsies, especially so here in New York, it may not be without interest for us to know more of the man who first published authentic data proving structural and functional nerve-regeneration in reunited nerves. Assuming this to be the case I take pleasure in presenting here a short biographical sketch of Michaelis, and append thereto a short abstract of his experimental work on peripheral nerves and the deduction he drew from it.

Michaelis was the son of John David Michaelis, the distinguished Orientalist and Biblical scholar, and a cousin of the no less renowned Gustav Adolf Michaelis, the obstetrician of Keil. Christian Friedrich Michaelis, the distinguished German surgeon and anatomist of our sketch, was born in Göttingen in 1754 and graduated in medicine in Strasburg in 1776. His inaugural dissertation became famous, its subject being "Croup and Its Treatment by Tracheotomy." It was so well thought of that it was reprinted in France thirty-five years later.

Michaelis began practice in Paris, but removed later to London, where he became well known to the leading medical men. This is evidenced by a letter which he wrote for Richter's "Chirurgisches Bibliothek" at an indeterminate date, probably between 1779 and 1781. He met Cruikshank and saw his preparations of nerve-regeneration. Evidently he was much more sanguine as to the possibilities in this field than either Cruikshank or his preceptor, Hunter. It should be noted that Cruikshank's experiments were not only done on the vagi, but the results were not published until many years later, contrary to the usually accepted belief that it appeared in 1779.

When the British decided to send another corps of Hessians to reinforce their American army toward the close of the Revolutionary War, Michaelis received the appointment of staff surgeon. He must have reached New York at very nearly the time of Cornwallis' surrender, so that he could do no more than remain in that city until its final evacuation by the British. During these two years he made the most of his opportunities by entering private practice in the city.

In a letter in Richter's "Chirurgisches Bibliothek," sent to Göttingen during this period, he relates a number of clinical cases and discusses the work of the leading local practitioners, for all of whom he has a good word, which, in the case of Bailey, the surgeon, and Bard—who later became Washington's personal physician—amounted to admiration. In this letter he does not speak of the subject of nerve-regeneration, but states in his pamphlet that the work was done in America during these years, and therefore necessarily in New York. Neither does he in his report of the experiments make the slightest allusion to local places or names. Hence it is quite likely that his work was, for some reason or other, conducted with secrecy.

After the evacuation of New York he returned to Europe, reaching Germany during 1783. He was at once made professor of anatomy and practical medicine at Cassel and performed one experiment there, evidently to complete his work which had, perhaps, been interrupted at his departure from New York.

In 1785, his work having been finished, the report appeared in the form of a pamphlet published as a letter to the famous Dutch physician, Peter Camper. Its title was "Ueber Regeneration der Nerven." He had become aware of the experiments of some of his contemporaries and states that his own results had thereby been largely confirmed. He seems never to have returned to this line of research, although during ensuing years his results were widely disputed.

In 1786 he took the chair of anatomy at Marburg and maintained his connection with this university until his death, in 1814. Of numerous writings published during this period the best known probably is that in which he advocates the treatment of club-foot by tenotomy of the Achilles tendon.

Experiments Performed in New York in 1782-1783.—Michaelis' experiments may be given in abstract, just as they are reported in the original. To these may, then, be appended some further comments and conclusions of the author.

1. Dog.—Pieces three-fourths of an inch and one and one-half inches respectively, taken from the large crural nerves. The breach was filled with cellular tissue. While the lower stump became atrophic, the upper one swelled. No paralysis resulted. Other experiments gave the same results. The author next reports a series of experiments on the phrenics, but returned again to the crural nerves (see Exp. vi.). Further, a dog (Exp. vii.) which had been used at first for experiments on the phrenic was later subjected to excision of portions of the large crurals. Regeneration seemed to have occurred, as judged by the criterion that irritation of the nerve, either above, below, or at the site of the excision, called forth pain and convulsions.

2. In the same dog the phrenics were divided at the neck. The ends grew together, but without restoration of function. Later the entire nerve was excised and the callus examined. The lower nerve segment came away from it with but slight traction.

3. A piece an inch long was excised from the phrenic of a dog. Ten days later the gap was filled, but without return of function. The bridge entirely resembled nerve tissue, save in certain matters of color and thickness. The lower segment of nerve, however, was readily pulled out of the callus. The latter could be split like nerve tissue. Some nervous fibrils seemed to have grown into the callus, or bridge, without any real regeneration.

4. Dog.—One and a half inches cut from phrenic. Symptoms due to intervention subsided. One month

later nerve examined and bridge seemed to represent a true regeneration. Three months before the crural nerve of the same dog had been divided, with resulting complete regeneration.

5. Dog's phrenics divided. Eight weeks later complete restoration evident.

6. Pieces three-fourths of an inch long excised from large crural nerve of dog. Ten days later anatomical union, but atrophy of lower segment. Nerve had been excised between two ligatures.

7. Piece one inch long excised from right phrenic of a dog. Symptoms subsided. One month later whole phrenic dissected out. Complete regeneration, but bridge a little thinner than normal, and of a different color. That function was preserved was shown by the fact that irritation of any portion of the nerve, including bridge and lower segment, caused spasm of the diaphragm. The opposite phrenic was divided without any bad consequences, and regeneration of this nerve soon occurred without the agency of blood extravasation, although the severed ends were nearly an inch apart. The bridge formed appeared to be nearly like normal nerve tissue. The specimen was presented to Professor Blumenbach.

Division of the regenerated right phrenic now led at once to the animal's death. These crucial experiments appeared to show, beyond doubt, that regeneration had occurred.

Michaelis' Views on the Subject of Nerve-Regeneration.—The author states that as a practising surgeon he had become a firm believer, from clinical evidence, that complete restoration of sensation and motion could occur after injury to main nerve trunks. As examples he mentions complete reunion of severed fingers, gunshot wounds involving the arm, and the regeneration which has followed division of the infraorbital nerve for neuralgia.

Cruikshank's pioneer experimental work was left incomplete, and the author independently developed the idea of bringing research in this direction to a definite conclusion.

The experiments just cited did not comprise all of his work. He speaks incidentally of a series of negative results in rabbits (nerves not stated), and makes a first division, which is limited to absolutely negative findings—not the least evidence of regeneration—even under favorable conditions.

In a second class of cases failure of divided nerves to regenerate is due to "poor anatomical conditions."

Finally there is a third class of cases in which true regeneration appears to occur, both anatomically and physiologically. Traction on the nerves does not cause the segments to come apart. The regenerated substance does not represent anything but nerve tissue, homogenous with the nerve proper, but only about half as thick. Such a regenerated nerve could be split through the bridge without any separation.

In these positive results true regeneration was shown to occur after excision of one or two inches of nerve. Conversely, in some negative cases the nerve was simply divided.

The author's observation period seems to have been short—from ten days up to twenty or more. Reunion in a few hours or days he would not regard as possible. That he did not follow up his cases for weeks or months was probably due to lack of opportunity. But he seems to have been satisfied that if reunion did not occur within a reasonably short interval—say several weeks—the result must be regarded as negative.

The Mechanism and Treatment of the Attack in Spasmodic Asthma.—According to A. Morison the most prominent objective feature of an asthmatic attack is that in spite of violent efforts on the part of the patient to breathe, the respiratory results are abortive. The chest is almost motionless. One result of these straining efforts is a permanent distention of the chest. It is the amount of air changed at each breath and not the mere amount shut up in the lungs that counts in oxygenation and so relieves the demand of breathing. Much of the wheezing of expiration is laryngeal, though there may be some spasm of the bronchial muscles. In a condition of persistent inspiration and pulmonary inflation, it is quite probable that the obstacle to the egress of air may be largely, if not wholly, relative, unless tumefaction of the mucous lining of the tubes causes in addition actual narrowing. Such a condition of pulmonary inflation, however brought about, if at all protracted, necessarily implies dextrocardial repletion and the small pulse of a depleted left heart which is so characteristic of spasmodic asthma, for normal expiration is necessary to repletion of the systemic vessels. A true spasmodic asthma may also be superadded to a primary bronchitis. In such a case there is also inflammatory narrowing of the bronchi from tumefaction. Concerning treatment, advocacy is made of placing the hands on the patient's chest and making coincident with his expiration a squeezing movement so as to assist in emptying the chest. The author finds this maneuver a great relief to the dyspnea. Artificial expiration, then, is the proper name to give the method. Of course the disease should always be treated along conventional lines so far as the removal of underlying causes, neurotic factors, etc., is concerned. Naturally the procedure he advises is easier in young persons with greater rib elasticity, but even in old people with stiffened chests he has found compression by one hand over the thorax and the other over the epigastrium, lower ribs, or preferably over the right hypochondrio-epigastric region, procure relief from the thoracic anxiety attending preponderantly inspiratory fixation of the chest.—*The Lancet.*

Ivy Poisoning.—E. S. McKee has found that considerable relief is afforded in this condition by the use of lead and opium wash, but more prolonged comfort is obtained by dusting the whole body with rice powder. Comfort may also be secured by the application of a thick lather of laundry soap. For stopping the burning and itching and checking the spread of the disease, a useful mixture is compounded as follows: alcohol, 53., distilled water, 47., lead acetate, enough to make a saturated solution. For the nervous symptoms, thirty-grain doses of bromide of sodium with two drops of Fowler's solution to each dose may be given four to six times a day. To protect the desquamated areas and aid the growth of new skin applications of olive oil and lanolin, saturated solutions of iodide of potassium, tartar emetic, and sodium bicarbonate, weak carbolic acid solutions, and thymol iodide in powder or ointment, are all useful. When one has been exposed to the poison it is advisable to wash the parts several times with dilute alcohol.—*The Therapeutic Record.*

Poisonous and Fatal Action of Camphor.—Happich says that the occurrence of several deaths after subcutaneous injections of camphor led him to investigate the subject. Camphor in the body combines with glycuronic acid to form the inactive camphoglycuronic acid, hence the injection of camphor is inadvisable in patients who are deficient in glycuronic acid or the materials for producing it; that is, glucose and oxygen. Caution is therefore necessary in using camphor with patients having insufficient carbohydrate metabolism and who are cachetic, poorly nourished, have been poisoned by chloral hydrate, or have severe diabetes. Patients in whom oxidation is deficient, who have been poisoned by CO_2, who have grave valvular lesions, double pneumonia, eclampsia, or severe sepsis, also are predisposed to the toxic action of the drug.—*Zentralblatt für Gynäkologie.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

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PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, March 17, 1906.

OLDER VIEWS IN REGARD TO YELLOW FEVER.

FEW diseases have in the course of their history given rise to more acrimonious disputes regarding causation, means of transmission, treatment, and prophylaxis, not only between members of the medical profession, but also among the laity, than has been the case with yellow fever. Leaving out of all account the differences of opinion regarding the causative agent and the quarantine squabbles which have occurred during comparatively recent years, it is interesting to recall the controversy between Benjamin Rush and his pupils, who, for a time at least, insisted on the contagiousness of the disease, and certain more enlightened observers who were of the opposite opinion and realized, albeit somewhat dimly, that some other unknown factor had still to be reckoned with in the transmission of the disease. Rush himself indeed, eminent as he was, was subjected to much vituperation by his townsmen because he asserted that yellow fever was not an imported pestilence, but had arisen in Philadelphia as the result of bad sanitary conditions. Among those who at about this time opposed the view that yellow fever was a contagious disease were a number of Baltimore physicians whose experience was rather different from that of their Philadelphia colleagues, and led them, in some instances, to the equally mistaken notion that quarantines were altogether useless.

In an address delivered before the Alumni Association of the University of Maryland on January 25, 1906 (*Old Maryland*, February, 1906), Dr. James Carroll, in discussing the various yellow fever epidemics in Baltimore, pointed out with what acumen some of the physicians of over a century ago foreshadowed conclusions concerning the nature of yellow fever that, though long disputed, we now know are true. Dr. Nathaniel Potter, a former pupil of Dr. Rush, and afterward the first professor of the Theory and Practice of Medicine in the University of Maryland, held in 1793 that yellow fever was not contagious, though according to his own statement he at that time believed he was the only person in America who held that opinion; and in 1797 Rush's contention was publicly attacked by Dr. John B. Davidge, the first professor of surgery and obstetrics in the same school. A striking observation is that recorded by Dr. Drysdale in the course of the epidemic of 1794 to the effect that "Locusts were not more numerous during the reign of Pharaoh than *mosquitos through the last few months;* yet these insects were very rare only a few years past when a far greater portion of Baltimore was a marsh." Dr. Davidge, in speaking of the subsequent course of the disease in patients removed from the low-lying districts along the water front to the higher ground of the city proper, says that the infectiousness of those who succumbed died with them, while "from those who recovered, all mischief and supposed contagion evanesced into empty air, which bore it to the pages of medical writers, and not to the bodies of healthy attendants. This was the result in 1794 and 1797." Dr. David M. Reese, in writing of the epidemic of 1819, pointed out the suggestive fact that persons visiting a certain infected district along the shore contracted the disease if they went at night, but not if they were there only in the daytime, and physicians who attended patients throughout the epidemic remained exempt, unless they happened to enter the district at night. This accords perfectly with the mosquito theory and the twilight habits of the stegomyia, and Dr. Carroll says that it is also in harmony with the experience of the American troops near Havana, who remained free from the disease if they visited the city only during the morning and early afternoon.

Dr. Carroll summarizes as follows the evidence collected by those early observers which could be used to support the mosquito theory to-day. Firstly, they recorded the presence of an unusually large number of mosquitos; secondly, they observed that the infection was localized in the low, wet districts near the river and shipping; thirdly, they noted that the infection was contracted mostly at night; fourthly, they showed that in the higher and drier ground of the city proper the disease was absolutely noncontagious; fifthly, they reported that the disease traveled in the direction of the prevailing winds, when these were strong and blew in one direction; and sixthly, they were familiar with the fact that yellow fever was most apt to prevail when the mean temperature was high, and they knew perfectly well that the disease was stamped out by the frost. To this we can add nothing more than the direct implication of the mosquito. Their mistake, however, lay in the fact that while they recognized that the disease was not contagious they did not realize that it could be imported, and they therefore protested against the quarantines that were instituted in the cities where the contagion theory was held. Dr. Carroll has provided an interesting retrospect of the views of these sagacious Baltimoreans, whose observations form an important chapter in a tale that, though apparently drawing near its close, is as yet far from complete.

THE PLACING-OUT SYSTEM FOR FOUNDLINGS AND WAIFS IN ENGLAND.

THE placing-out system for foundlings and waifs has been in vogue in the United States for some considerable time. It was first introduced in Massachusetts and in Pennsylvania, where its adoption was attended with great success. Of course, the fact has been known for long by medical men that when infants are massed together in one building and fed largely by artificial means, the resultant death-rate among them is appalling. Perhaps the

Foundling's Hospital at Randall's Island was the most notorious instance in point of truth of this statement. The report of the Committee of Inspection dealing with this institution, published in December, 1897, showed that of 366 children under the age of six months admitted to Randall's Island Hospital during the year 1896, only twelve were alive on April 15, 1897—a death-rate of more than 96 per cent. The matter was fully discussed editorially in the MEDICAL RECORD at the time, and it will be remembered that this deplorable state of affairs so aroused public sentiment that it was resolved to initiate a reform in the methods of management. Accordingly, the decision was arrived at to adopt the placing-out system. From Randall's Island the infants were removed to carefully-selected homes in the country. The system was put into practice in New York in the early part of 1898, and proved so satisfactory that the mortality rate fell from 55.9 per cent. in 1899 to 18.9 per cent. in the year ending March, 1906, a practical demonstration indeed that foundling hospitals are strongly contraindicated for infants.

In England the late Dr. Barnardo, the founder and organizer of the world-renowned homes known by his name, was the inaugurator of the placing-out system. The Barnardo scheme of dealing with the waifs and strays which fall within its scope is not confined to any one method, but embraces many methods. Roughly speaking, the statement may be made that infants are boarded out, as this mode of bringing up children under five or six years of age has been found the best. At the close of the year 1904 the Barnardo Association had 243 boarding centers, in which were placed 3,967 boys and girls. Great care is taken to choose suitable homes, and constant supervision is exercised over the children. Before a child is allowed to enter a cottage home one of the Sisters connected with the Association inspects the home, to ascertain that the accommodation is sufficient, and that the sanitary arrangements generally are satisfactory. A local committee is appointed, whose duty it is to take a certain number of homes under its supervision, and members of this committee constantly visit the children. The Association likewise employs its own visitors, persons of experience, including trained nurses, who spend their time in inspecting the homes and in taking note of the progress of the children placed in them. The boarders attend the village schools, and in all respects lead the life of the village children. It is claimed for the boarding-out system that it is beneficial in every way. It would seem reasonable to suppose that it must be healthier than living in an institution, and the assertion made by its advocates that it tends to counteract to a certain extent the present-day trend of the country into the towns is also sufficiently credible. In short, the system may aid, in some degree, in solving the problem of how to deal effectively with the poor and neglected children of our large cities.

London's Ambulance Service.—Horse ambulances are still a "crying need" in London. The other day a man, taken seriously ill in the street, had to wait where he was four hours before a conveyance could be obtained to take him to a hospital.

ACETANILID.

THERE is a curious feature in the crusade against proprietary remedies, initiated by one of the State journals and recently taken up with the proverbial zeal of the convert by the *Journal of the American Medical Association*, which many honest souls cannot quite understand. Up to a year or so ago this last-named journal was a most flagrant sinner in the matter of "unethical" advertisements, and even yet its baptismal robe is a little spotty; but so violent has it now become in its onslaught on the "proprietaries" that there is no room for doubt, in the minds of the unthinking, that its conversion is sincere. One of the first moves in the war against what are called, with verbal waste, "secret" nostrums was the appointment of a Council on Pharmacy whose task it is to analyze all the "proprietaries" and to prepare a sort of unofficial pharmacopeia for the guidance of practitioners. The Council has been rather inactive of late, so far as its published reports are concerned, but it was very busy at first, and soon after its creation published a series of analyses of various mixtures said to contain acetanilid as their active ingredient. In this *index expurgatorius* were included not only the preparations advertised solely to the profession but also a number of "headache powders," frankly classed as "patent medicines" and advertised in the lay press and on billboards, fences, and conveniently shaped rocks throughout the country.

So far, so good. The ignorant use by the laity of powders or mixtures containing a powerful drug is pernicious, whether the drug is cocaine, opium, alcohol, or acetanilid; and the same is true of the prescribing of secret preparations by physicians. But immediately after the publication of this report in the *Journal of the American Medical Association* there appeared in the same journal a series of articles treating of the dangers of acetanilid and recounting cases of untoward effects following the injudicious use of the same. Why this special attack should have been made on acetanilid, instead of on opium or cocaine, both of which are probably more extensively, and certainly more injuriously, used in the so-called "secret nostrums" than acetanilid, we are able only to conjecture. Acetanilid is a valuable and ethical drug, admitted ten years ago to the United States Pharmacopeia and retained in the recent revision, and very much cheaper than its chief rival among the synthetic analgesics and antipyretics, the sale of which has doubtless been increased by this attack on the pharmacopeial preparation.

We are at one with the Chicago journal in decrying the use of mixtures containing acetanilid or any other drug, the exact proportion of the ingredients of which is kept secret by the manufacturers. The physician cannot prescribe intelligently unless he knows what he is prescribing—that is as undeniable as any of the truisms of the code of ethics. But what that has to do with the physiological and therapeutic effects of acetanilid is a puzzler for the uninitiated. The Committee of Revision of the United States Pharmacopeia not only retained acetanilid, but judged it such a useful member of the official family that it added an official mixture—pulvis acetanilidi compositus—thereby not only setting the seal

of approval upon this drug, but emphasizing the general opinion that it is one of undoubted utility and therapeutic value. It is liable to abuse, like any other powerful remedy, but even its continued exhibition is less often followed by the establishment of an enslaving habit than is that of many other drugs. Its use in any form, whether the pharmacopeial powder or one of the secret headache "cures," by the laity, except on a physician's prescription, cannot be too strongly condemned; but, intelligently prescribed to meet definite indications, it is an excellent remedy, and the Committee of Revision acted wisely in retaining it among the official drugs of the United States Pharmacopeia, notwithstanding the opposition of our highly esteemed, though overzealous, contemporary. One undoubted advantage which it possesses is that it is so very cheap that there is little temptation for the dishonest druggist to adulterate it.

Strychnine and Chloroform.

Strychnine is known to increase the irritability of the brain and spinal cord, it stimulates the vasomotor centers, and as a result produces an increase in the blood pressure. The tetanus resulting from strychnine poisoning has also been shown to bring about finally a paralysis of these centers, to which fact may probably be ascribed the fatal issue in such cases. Chloroform, on the other hand, diminishes the irritability of the central nervous system, it also inhibits the action of strychnine on the vasomotor centers. It would seem rational to assume that the effect of doses of strychnine approaching those of toxic dimensions which have been injected into an animal organism, might at least be weakened by the administration of chloroform. This interesting proposition has been made the subject of a series of experimental observations by Hugo Meier (*Deutsche Aerzte Zeitung*, No. 3, 1906) on mice which had been chloroformed. These were given toxic doses of strychnine (0.5 mg. per 100 gm. of body weight) and in practically every instance similar phenomena were observed. Aside from a single tetanic contraction which came on some time after the injection, there was no actual tetanus produced, and this state was succeeded by a condition which closely resembled that seen in curarized animals. Some of these animals died, others survived the experiments. Meier accounts for this phenomenon by assuming that chloroform merely inhibits or rather weakens the stimulating effects produced on the central nervous system by the strychnine, whereas the paralyzing action of the alkaloid on the motor nerve-endings is not thus affected and this is the only one which comes into play. The use of chloroform as a therapeutic resource in strychnine poisoning need hardly be considered, however, for the physiological action of the chloroform must be induced at the same time as that of the strychnine. As a matter of fact, in this as well as in all other forms of poisoning, relief is usually not sought until toxic symptoms have become evident, and in this event chloroform can no longer be of service. It seems more rational to consider the author's suggestion to administer strychnine with this end in view in cases of chloroform poisoning. The proposition contained in this preliminary communication is of considerable interest and it is to be hoped that an opportunity will be afforded to the author to put his theories to a practical test. It will require considerable courage and assurance, however, to administer to a patient on the verge of collapse from chloroform a dose of strychnine such as that referred to, which would ordinarily be regarded as fatal.

Gynecological Examinations by a New Method.

There is a certain class of gynecological cases in which for various reasons a bimanual examination may be rendered difficult or impossible, and very often it is necessary to anesthetize the patient before a satisfactory diagnosis can be made. This method of procedure is of course open to many objections, and aside from the natural tendency to avoid narcosis unless an absolute necessity for the same exists, anesthesia suppresses a symptom of great diagnostic importance, namely, localized pain. Thus a patient may refer her pains to the ovarian region, and when on examination under ether an enlarged ovary is found, the trouble is naturally attributed to this source, although in fact it may be due to a lesion in the pelvic cellular tissue or the peritoneum. The exact site could have been elicited only when the patient was entirely conscious and able to respond to the touch of the examining finger; during anesthesia no such distinction could be drawn. A mutilating operation of greater or less extent may even be done without producing any relief from the original disturbances. To obviate these shortcomings in gynecological methods of examination, Profanter (*Wiener klinische Wochenschrift*, No. 6, 1905) suggests a novel procedure which he has found eminently satisfactory. This requires the patient to assume a half-reclining position in a bathtub filled with warm water. It is found that the tense abdominal muscles are immediately relaxed, and as soon as the water is permitted to enter the vagina the latter is distended and readily permits the introduction of the examining finger. Another beneficial effect of the bath method consists in the disappearance of all local sensitiveness, so that the necessary manipulations can be done without causing pain or producing resistance. Under ordinary circumstances the method may be objected to by the patient as entailing an undue amount of exposure, and by the physician as being productive of considerable discomfort in its execution, but the writer promises a suitable apparatus at an early date in which these sources of objection will be entirely overcome.

News of the Week.

For National Quarantine.—In spite of some opposition on the ground of interference with State rights, the House Committee on Interstate and Foreign Commerce has agreed to make a favorable report on a committee substitute for the Williams bill to extend Federal control of quarantines. According to the plan proposed the Secretary of the Treasury is placed in direct control of quarantine, and is to administer it through the Public Health and Marine Hospital Service. The bill carries an appropriation of $500,000.

Meningitis at the Newport Naval Station.—Two more deaths from cerebrospinal fever among the apprentices at the Newport Naval Station have been reported. One of the patients had been ill for three months, the other for only a few days.

Tuberculosis Among Federal Employees.—President Roosevelt on March 8 issued an order to the heads of all departments giving them explicit in-

structions in regard to their duties in controlling tuberculosis among their employees. The order provides for the distribution of circulars containing instructions on the prophylaxis of the disease, for the medical examination of persons suspected of being tuberculous, and for a general investigation of the sanitary conditions existing in all the public departments and workshops, to be conducted under the direction of the Surgeon General of the Army, the Surgeon General of the Navy, and the Surgeon General of the Public Health and Marine Hospital Service. The order is issued in accordance with the report and recommendations of the committee appointed by Executive order of December, 1905, to prepare a plan for the prevention of tuberculosis in the Government offices and workshops.

Transfer of the Newberry Library to the John Crerar Library.—Arrangements have been completed for the transfer of the medical department of the Newberry Library, including the Senn collection on medical history, to the ownership and management of the John Crerar Library. This has been done partly because the natural relation of these books to the chosen field of the John Crerar Library and the lack of such relations to that of the Newberry Library make the transfer in many ways mutually advantageous, and partly because the medical profession of Chicago has urged strongly the desirability of a more central location.

The Patent Medicine Evil will be discussed by Mr. Norman Hapgood, editor of *Collier's Weekly*, on Sunday afternoon, March 18, at 3.30 o'clock, in the Majestic Theatre. The meeting is under the auspices of the West Side Young Men's Christian Association.

A Field Hospital for the New York National Guard.—The New York National Guard is to have a field hospital, to be attached to headquarters and intended to be used in caring for the sick and wounded when the guard is in camp or performing riot duty, or on other service. The field hospital will conform to army methods as far as the State service will permit, and will not in any way interfere with the present regimental hospital corps. All sick men in care of the regimental hospital who may not have recovered after twenty-four hours can be turned over to the field hospital, as is done in the army. The field hospital will then be responsible for the sick or injured, and if men are unable to be removed to a permanent city hospital they will be cared for in the field until recovered. It is proposed to have the force consist of four officers and forty-six enlisted men. The commanding officer will be a surgeon with the rank of major, and the other commissioned officers will be three assistant surgeons with the rank of captain. Dr. William S. Terriberry of the Twelfth Regiment, who served as a medical officer in the war with Spain, will, it is understood, command the new field hospital, and will be assisted by Dr. William E. Butler of the Twenty-third Regiment and Dr. T. A. Neal, late of the Seventh Regiment. The fourth officer has not yet been selected.

Auto Speeding by Physicians.—As a result of the recent arrest of the chauffeur of a physician who was exceeding the speed limit in responding to an urgent call, the suggestion has been made that the Police Department issue a card bearing a red cross, to be displayed by physicians or their chauffeurs in automobiles, which shall be accepted by the police as a license to exceed the speed limit in visiting extremely urgent cases of illness. We trust the Police Department will not accept any such suggestion. No case is so urgent as to warrant exposing a city full of children, the aged, and the infirm to the danger of fatal injury by a speeding motor car.

Paid Internes at Bellevue Hospital.— On February 28 the Civil Service Commission granted authority to the trustees of Bellevue Hospital to engage four physicians, at a salary of $600 a year, to assist the internes in the reception wards. It is proposed to appoint the retiring house physicians to these positions.

A Law to Compel the Publication of Formulæ.—Assemblyman Wainwright and Senator Stevens have introduced into both houses of the New York Legislature a bill entitled, "An act to amend the public health law by providing for the proper labeling of proprietary and other medicinal preparations containing alcohol or narcotic or other powerful potent drugs, and for the inspection, analysis, and regulation of the manufacture and sale of the same." The bill was presented to the Legislature at the instance of the New York State General Committee for Safeguarding the Sale of Narcotics, of which Mr. William A. Jenner is chairman, and Mr. William T. Wardwell and Dr. A. Jacobi, vice-chairmen. The bill prohibits the manufacture and sale of medicinal preparations containing alcohol or other narcotic or poisonous drugs unless the formula, both qualitative and quantitative, is printed on the label in plain English. Analyses of these preparations are to be made from time to time by the State Department of Health, either on its own initiative or on the complaint of any citizen, to determine whether the actual ingredients are as stated on the label. Violation of the law is made a misdemeanor punishable by fine or imprisonment, or both, in a criminal proceeding, and providing for a forfeiture of $50 to the State Department of Health in all places outside the cities of New York and Buffalo, and to the municipal Health Department in those two cities. The law does not apply to preparations intended solely for external use, or to the dispensing of compounds on prescriptions by legally authorized physicians, dentists, or veterinarians, nor to preparations listed in the Pharmacopeia of the United States unless sold under proprietary name or trademark.

Dr. Palmer Findley of Chicago has accepted the Chair of Gynecology in the College of Medicine in the University of Nebraska, Omaha.

Chicago Ophthalmological Society.—At the annual meeting of this society, recently held, Dr. George F. Fisk was elected president, and Dr. E. V. L. Brown secretary and treasurer.

Harvey Society Lectures.—The thirteenth lecture in the Harvey Society Course will be delivered by Professor W. H. Howell of Johns Hopkins University at the New York Academy of Medicine on Saturday evening, March 17, at 8:30 P.M. Subject, "The Cause of the Heart Beat." This will be the last lecture of the series.

Dr. L. Duncan Bulkley will give four special lectures at the New York Skin and Cancer Hospital, Second Avenue and 19th Street, on "The Principles and Application of Local Treatment of Diseases of the Skin," on Wednesday afternoons, March 21 and 28, and April 4 and 11. Dr. William Seaman Bainbridge will give a clinical lecture on "Malignant and Non-Malignant Growths," on Wednesday, April 18, in the Out-Patients Hall of the hospital. All of these will be at 4:15 o'clock and will be free to the medical profession.

Medical Exhibition in London.—An exhibition of instruments, pharmaceutical supplies, and other products likely to be of interest to medical men is to be held in London, October 1 to 5, 1906. The Secretary and Manager is A. Normon Flack, "British and Colonial Druggist" Offices, 44 Bishopsgate Without, London, E. C.

Medical Society of the Missouri Valley.—The next meeting of this society will be held at St. Joseph, March 22 and 23. An excursion to Excelsior Springs has been planned as part of the program.

To Improve the Hygienic Conditions of the Philadelphia Chinatown.—Dr. A. C. Abbott, President of the Philadelphia Bureau of Health, after personal inspection, will take steps to improve the hygienic conditions in that portion of the city known as Chinatown. In some houses small rooms with low ceilings, and occupied for sleeping purposes by several persons, were found unprovided with windows, and many other violations of sanitary requirements were discovered.

Dr. D. J. DeJarnette, second assistant physician of the Western State Hospital at Staunton, Va., has been elected superintendent of that institution to succeed the late Dr. Benjamin Blackford.

Otisville Tuberculosis Sanatorium. — In order to hasten the work on certain improvements desired the Board of Health has asked for $20,000 to spend on the Otisville Tuberculosis Sanatorium without public letting. The regular routine requires advertising of contracts far in advance and then the publication of bids. If the Health Department has to follow this routine, the improvements and additions cannot be made in time for patients to reap the benefits of them this summer.

Dr. M. V. Mabon, President of the State Lunacy Commission, is going to resign to take charge of the Manhattan State Hospital, on Ward's Island, New York.

The Smoke Nuisance.—At a meeting of the Board of Health, on March 8, it was decided to reenact an old ordinance requiring the use of smoke consumers. This was omitted when the Sanitary Code was revised under the Low administration, but it is to be reinstated as soon as possible. The police Bureau of Boiler Inspection, which issues licenses, will also examine firemen and engineers in regard to taking care of superfluous smoke. Greater activity in securing the punishment of offenders is also promised. In view of the threatened strike of the anthracite coal miners, and the consequent increased consumption of bituminous coal in this city, the activity of the Health Department in this direction is very timely.

The Tri-State Medical Association of North Carolina, South Carolina, and Virginia, at its meeting, held at White Stone Springs, S. C., on February 27 and 28, elected the following officers: *President*, Dr. R. E. Hughes, South Carolina; *Vice-Presidents*, Dr. I. M. Taylor, North Carolina, Dr. J. H. Hayne, South Carolina, Dr. W. E. Driver, Virginia; *Secretary and Treasurer*, Dr. J. H. Way, North Carolina.

More "Euthanasia" Folly.—The question of legalized murder is again to the fore—in Iowa this time, where, on March 10, a bill was presented in the lower house of the legislature providing for the killing of those suffering from painful disorders certain to end in death, and also intended to prevent the rearing of hideously deformed or hopelessly idiotic children. At least three physicians and the County coroner must unanimously agree and participate in the act, and then it must be with the consent of the nearest relative, and, if practicable, of the patient himself. Any deviation from this requirement constitutes murder and subjects the offender to the penalty of murder. The bill provides a heavy fine for any physician who shirks his duty under this law, and also prescribes the usual penalty for first degree murder for any abuse of it.

A "Tiny Tim" Cot, named after the little personage of that name who figures in Dickens' "Christmas Carol," has been endowed by the Manhattan Dickens Fellowship in the Home for Crippled Children at Bath Beach, to be run by the Children's Aid Society.

Hospital Transfers of Dying Patients.—At a meeting of the Manhattan Board of Coroners, held on March 9, a resolution was adopted condemning the alleged practice of transferring dying patients from the large private hospitals to Bellevue Hospital and other charitable institutions. The incentive to this action was the death of a patient from heart disease, while being taken in an ambulance from a large private hospital to Bellevue.

Measles and Diphtheria.—The increasing morbidity from these two diseases has impelled Health Commissioner Darlington to issue an appeal to the people of greater New York asking them to take all precautions to prevent an epidemic, particularly by summoning a physician at the first sign of illness, and by a free use of antitoxin in a suspected diphtheria case. There were reported to the department, 6,310 cases of measles for last month, as against only 901 cases for February, 1905. March of 1904 was the record month for measles in New York, 7,000 cases being reported, but this month promises to beat the record.

Spitters Arrested.—In consequence of an acute exacerbation of activity on the part of the Health Department, thirteen men of all sorts and conditions were arrested in one day last week for spitting in forbidden places. Ten of the offenders had been captured in the lobbies of theaters, where no spitoons were provided, and on this ground they were, the next day, discharged without a fine; but three others, who had sinned on the platforms of the elevated railway, had to pay one dollar each. Spitting on the floors of cars and of ferry boats is not so common as it used to be, but there is still much room for improvement in this direction, and we hope that a permanent anti-spitting squad will now be detailed to purge public conveyances of this variety of germ disseminators.

Tonsillitis in Yonkers.—More than one thousand cases of follicular tonsillitis are said to have been under treatment in Yonkers at one time last week.

Obituary Notes.—Dr. Grove S. Beardsley of Syracuse, N. Y., a retired surgeon of the U. S. Navy, died on March 7, at Atlantic City. He was born in Verona, N. Y., in 1838, and was appointed assistant surgeon in 1861. He became medical director in 1891 and was transferred to the retired list in 1900.

Dr. Charles W. Townsend of New York City, died on March 6, at the age of thirty-seven years, of cerebral abscess.

Dr. Frank J. Freel, formerly of Brooklyn, died on March 9, at his home in Stony Creek, Conn., in his forty-eighth year. He was a graduate of the Long Island College Hospital, but had done little active professional work.

Dr. Charles A. Lindsley of New Haven, Conn., died of heart disease on March 9. He was born in Orange, N. Y., in 1826, and was graduated from Trinity College in 1849. Three years later he received his degree from the Yale Medical School, and in 1860 he was made professor of materia medica and therapeutics in the same institution, a position which he retained until the time of his death. He was largely instrumental in the formation of the State Board of Health in 1874, and for twenty-two years he served as its secretary and administrative head.

Dr. Elizabeth N. Bradley-Byström died at her home in Dobbs Ferry, N. Y., on March 9, at the age of 54 years. She was born in Chicago and was graduated in medicine with honors from the University of Paris in 1887, her thesis, defended with much skill against such men as Fournier, Robin, Pouchet, and Gautier, being on "Iodism." She practised for ten years in New York, and then went to Brooklyn, and finally to Dobbs Ferry. In 1892 she married Mr. Ernest Byström, the Swedish pianist.

Dr. Sanford W. Adams of Mount Vernon, N. Y., died on March 7, at the age of twenty-nine years. He was a graduate of the New York Post-graduate Hospital.

Dr. William Hill of Bloomington, Ill., died on March 1, at the age of seventy-seven years. During the past fifty years he was widely known of throughout central Illinois, and was for many years president of the McLean County Medical Society.

Dr. Joseph Torkington of Pawtucket, R. I., died on February 27, at the age of fifty-six years. Dr. Torkington was a native of Lancashire, Eng., but came to this country when a young man, and was graduated from Jefferson Medical College, Philadelphia in 1885. He returned to England where he practised for a short time, but soon came back to this country, and a few years ago located in Pawtucket.

Dr. John T. Cotton of Charleston, W. Va., died on March 3, after a lingering illness. He was born in 1819, and was a member of the first class of Marietta College, Marietta, O., which was graduated in 1838. He first practised at Ravenswood, W. Va., and in 1845 removed to Charleston, where he had resided ever since.

Dr. Elmer W. Heltman of Toledo, O., died on March 3, after an illness of six months, at the age of forty-four years. He was a graduate of the Toledo Medical College and had practised in Toledo for about fifteen years.

Dr. John O. F. Hill of Gravesend, L. I., died on February 27, at the age of forty-two years. He was a graduate of the Long Island College Hospital in the class of 1886, and since that time had practised in Gravesend.

Dr. B. W. Woodburn of Bremen, Ky., the oldest practitioner of Muhlenberg County, died on February 24, at the age of seventy-three years. He had practised medicine in Bremen for over fifty years.

Dr. George W. Williams of Farmington, Mo., died on March 2, at the age of eighty-seven years. Dr. Williams was one of the oldest practising physicians in Missouri, having been engaged in active work for more than sixty-five years.

D. Edward W. Derby, who had practised in New York City for over fifty years, died on March 10, at the age of seventy-seven years. He was a graduate of Williams College, and received his medical degree from the New York University Medical College, in 1853.

Dr. David Dorrington Richardson, chief resident physician in the department for males at the Pennsylvania State Hospital for the Insane, at Norristown, died suddenly on March 6, at the age of sixty-nine years. He was graduated from the medical department of the University of Pennsylvania, in the class of 1871. He was, for a number of years, chief physician to the Insane Department of the Philadelphia Hospital. Later he aided in the establishment of the Delaware Hospital for the Insane at Farnhurst, and he also organized the State Hosp tal for the Insane at Warren, Pa.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HOSPITALS, COLLEGES, AND THE UNIVERSITY—SUCCESS IN THE PROFESSION—INFUSION OF VIOLETS IN CANCER—SURGICAL TREATMENT OF CANCER OF UTERUS—FEEBLE-MINDED—OBITUARY NOTES.

London, February 23, 1906.

Yesterday University and Kings Colleges, the Middlesex, the Royal Ophthalmic, and two or three other hospitals held their annual meetings, and many appeals for funds have been prominently before the public for general expenses as well as for rebuildings and removals. Prince Francis of Teck presided as vice-president at the Middlesex Hospital, where the repairs have been very heavy and where money is further needed for the endowment of the school started by Mr. H. Morris with a donation of £1,000. After the meeting a visit was paid to the chapel of the hospital, which is unique among the London churches for its beautiful mosaics and marbles. During the week the Countess Bathhurst unveiled a window she had added in memory of her brother, the late Hon. Oliver Borthwick, who had been an active supporter of the hospital and worker on its Board of Management.

Lord Reay presided at University College at the last meeting under the old order, as the incorporation with the University of London is to be completed in September. He said although the college would lose to some extent independence, it was for the good of university education in London as a whole, and he was therefore glad that Kings College would follow their example. There seemed some doubt about the new project of a great college of technology, but he was convinced that unless all higher technological work was in the hands of the same authority, there would be overlapping, duplication, perhaps triplication, as in the past. If brought within the university on the same lines as this college, the new institution would be under the direction of the Senate on matters of university policy, but in all other respects would be free or self-governing. It was the privilege and duty of the university to coordinate the many agencies of the higher culture that abounded in London.

Sir F. Treves, as Lord Rector of the Aberdeen University, delivered his address yesterday, taking as his subject: "The Bases of Success as Illustrated in the Career of a Medical Man." He was disposed to believe there had been more heroes in this than any other calling, a heroism marked by self-sacrifice even to laying down life. It was common to say success in life depended on fortune, influence, social position, even genius. These were rather hindrances. The lives of eminent doctors demonstrated that unearned money counted for nothing in the struggle, so neither influence nor social position helped. He was no believer in luck, which meant only that a man was ready for an opportunity if it presented. The contention that success needed genius was also vain. A man who excused himself by saying he was no genius lacked more than he owned. Genius was an unstable thing, for the definitions of it were various. It seemed the outcome of a quickly-working brain, the machinery of which need not be elaborate so long as it was easily set in action. In a physician it might conduce to flippancy, diagnosis by instinct, and other phenomena suited to the charlatan. In a surgeon, it was a quality from the possession of which he might pray to be saved. Success in surgery was measured now not by the rapidity so useful in preanesthetic days, but by the duration of the recovery. Having disposed of these negligible qualifications, Sir Frederick passes on to state the factors which make for success. These he held were health, serviceable knowledge, sympathy, and honesty. Industry was presupposed, as one could not conceive of a moving millwheel without a stream.

For several months certain newspapers have reported at intervals that patients have made marvelous recoveries from supposed cancer under treatment by infusion of violet leaves. The hopes and fears of patients have induced their attendants to examine the facts. These have now been discussed by the Royal Medical and Chirurgical Society. At the meeting on February 13 a paper on the subject was read by Dr. Wm. Gordon, who nearly a year ago related in *The Lancet* a case of presumably malignant disease which disappeared during the treatment, and he has collected a number of cases so treated, some under his own observation. He is not so foolish as to talk of "cure" after a few months' observation, and is of course aware that disappearance of malignant disease is not unprecedented, but he thinks it desirable to inquire further into the effects of violets, and perhaps so to correct the misstatements of the newspapers. Dr. Gordon related at length four cases, two with all the appearance of cancerous growths, the only

doubt of their nature arising from their disappearance, but one of them recurred; a third case, with the microscopical and general appearance of cancer, greatly diminished in size, but only for a time; the fourth case he thought indicated that the treatment could act on cancerous tissue. Brief details of forty-three other cases were given. In most of the cases the infusion had been used both internally and externally. It was made of about fifty good-sized, freshly-picked, garden-grown violet leaves, with the stalks, to a pint of boiling water, infused for twelve hours and strained. Half of this green liquid was taken during the day, either at once or in divided doses. The other half was used for local applications according to the part diseased. The infusion had sometimes caused anorexia, diarrhea, temporary increase of pain, rash, shortness of breath, and faintness, but properly used, the drug was not dangerous. Dr. Gordon considers that although it would be utterly unjustifiable to advise this treatment as a substitute for possible operations, it is desirable to try it after operation, to ascertain if it can prevent recurrence, and also in inoperable cases, to determine whether it can cause disappearance of the growth, or bring it within the reach of operation, or alleviate symptoms.

Mr. Pearce Gould, vice-president, who was in the chair, remarked on the difficulties which beset the subject. A sharp distinction must be made between relief of symptoms and diminution of size of growth. Then the usual course of malignant disease was very uncertain. Nearly every case related in the paper could be paralleled by some which had undergone no treatment at all. Rapidity of growth varied in a remarkable manner; arrests were known to all; active scirrhus of the breast might atrophy. Of Dr. Gordon's cases, he doubted if the first were cancerous, no glands being enlarged, the distribution of the second was unusual, and the two raised the question of the possibility of a merely clinical diagnosis. In the third case, with a microscopical report, there were doubtful features. Actinomycosis had only lately been differentiated from cancer, and there may be other unrecognized conditions to cause confusion. He had tried the treatment at the Middlesex Hospital, but had no success to report. In one case of mammary cancer the growth diminished, and a sloughing ulcer which was also present cleaned up, but the improvement did not continue. Temporary relief was often met with under various treatments, and he would admit this sometimes might seem due to the violet infusion.

Dr. Norman Moore agreed almost entirely with Mr. Gould. Microscopical examination was not alone decisive. The relief of pain did not prove improvement. The cases related illustrated the natural course of the disease. He did not think the treatment of any value.

Dr. Blake said he had seen apparent disappearance of supposed internal cancer under hypnotism, and thought in many cases faith in a fresh remedy had some effect. In reply to a question, he admitted he had seen nothing of the kind in external cancer.

Mr. Faulder said palliative treatment was often useful. Inoperable cancer of the rectum might become operable after colotomy.

Dr. Dudgeon remarked that inflammatory conditions often simulated cancer.

Mr. Bowseman Jessett's inaugural address as president to the Gynecological Society was devoted to cancer of the uterus. He remarked that it is now more than twenty years since he first removed the organ, but his early cases were unsuccessful and he determined not to operate again unless in a case he considered highly favorable. Such a one he met in 1892, since when he has operated on over two hundred cases. At the cancer hospital only a small percentage of patients are seen early enough. If family doctors insisted on a vaginal examination in every case of discharge or irregularity, many lives might be spared. Sir Halliday Croom showed that malignant disease often begins after labor, and American physicians insist on the importance of periodical examination after delivery. Mr. Jessett went on to point out the difficulties which beset the early recognition of danger by patients and their attendants, and even when fear is entertained, the impossibility of a microscopic examination alone settling the diagnosis. He then said that his own investigations did not indicate that glandular infection was as frequent as supposed, and in this conclusion he was supported by other observers whose reports and figures he quoted.

As to operation, the great question to consider is in what cases it holds out a fair hope of benefit and possible cure. Here Mr. Jessett found English gynecologists more conservative than American or Continental, and evidently he agrees with his countrymen. Kroenig's heroic surgery in advanced cancer immovable even under narcosis, was noticed only to express the conviction that when the uterus is fixed and the ureters and bladder implicated, no operation can benefit the patient, though there may be cases on the border line in which it may be hoped to get beyond the disease, such as where the os was primarily affected and the disease has crept along the roof of the vagina just into the areolar tissue beneath.

Wertheim's paper at the Lincoln meeting last year (Report of British Medical Association in the MEDICAL RECORD, August 19, 1905) was pronounced a very valuable addition to our knowledge, and his results truly surprising, he having performed his formidable operation on two hundred and seventy cases, with a mortality of 15 to 18 per cent., and having lost only two out of his last thirty cases. Moreover, 60 to 70 per cent. have not recurred after four to five years. Notwithstanding these brilliant results, Mr. Jessett had only performed Wertheim's operation in three cases, and he opined it would be some time before British gynecologists adopted it.

As to the relative merits of vaginal and abdominal hysterectomy, the mortality seemed to be two or three times greater in the latter. In more than two hundred cases by the vaginal route, Mr. Jessett had only ten deaths, and of his last seventy-three cases only one died. Of one hundred and eighty of these done more than two years ago many had been lost sight of, but seventeen are now alive and well, three to twelve years after, and 20 per cent. were free from recurrence from two to five years.

When the fundus or body is attacked, the vaginal is the better operation, it having been established that no glandular infection takes place unless ulceration through the wall occurs. This was also the best course when the disease was limited to the os and vaginal portion of the uterus. But when extension up the cervical canal, infiltrating the cervix and possibly infecting the cellular tissue, has taken place, either the abdominal or combined operation might hold out the only hope. When the uterus is fixed and the ureters and bladder perhaps implicated, the cases were, Mr. Jessett said, better left rigidly alone.

The Royal Commission continues collecting opinions of various medical officers on the care and control of the feeble-minded. Dr. Pasmore of the Croydon Mental Hospital and the County Asylum stated as the result of his studies that 55.4 per cent. of cases of insanity have an insane history, fifty-five males and forty-five females, and there is a direct inheritance in 34 per cent. Where there is no history in the family, 46.2 per cent. are recoverable, but with insane history, only 28 per cent. In Croydon there had been an increase of insanity of 6 per cent. in the last five years. He recommended legislation giving power to control the property of defectives, dropping the term "asylum," adapting existing institutions for receiving defectives, compulsory removal from their homes and from workhouses of all idiots and defectives over sixteen, compulsory detention of habitual drunkards, schools for defectives, and registration in order to trace them afterward, state crêches under one central governing body.

Dr. Whiteside Hime advocated extra classes and finding interesting employment for defectives, releasing them from routine school attendance. He would have no classes for continuance of memory exercises, as in elementary schools. Criminally-disposed boys should be detained in an institution where they could be treated medically or educationally, as they needed. They should not be placed with imbeciles or defectives. Prison was not the place for juvenile criminals who suffered from mental perversion. The existence and degree of this was a matter for the medical expert, as was the treatment.

The chairman and ex-chairman of the Leeds special schools recommended that where the feeble-minded are detained in homes, segregation should be carried out, and as heredity was largely accountable, it was desirable to stop intermarrying among the feeble-minded.

A death has occurred under ethyl chloride, given for the extraction of four teeth. The patient was a clergyman of 67 years, and when three of his teeth were removed he suddenly expired. The deceased was suffering from fatty degeneration of the heart, and his death was attributed to syncope induced by the anesthetic.

The death is announced of the Rev. Canon Oakley Coles, L.D.S., who was dental surgeon to the Throat Hospital until 1886, when he entered the Church. In 1899 he was given a canonry at Canterbury. He was closely associated with Morell MacKenzie, whose sister he married, in the establishment and management of the Throat Hospital, and also in the directory of the *Medical Examiner*, which they conducted with vigor during its brief career. Mr. Coles wrote a volume on "Oral Deformities," of which he had much experience at the hospital. He was editor for a time of the *Monthly Review of Dental Surgery*, and dean of the National Dental Hospital.

Surgeon-General J. P. Walker, late of the Bengal army, who died on the 14th inst. in his eighty-sixth year, took his M.D., Aberdeen, in 1842, and his M.R.C.S., Eng., in 1844. The next year he went to India, and served throughout the mutiny, retiring in 1877 with the rank of surgeon-general. He was the senior member of the Indian medical service.

Dr. T. S. Odling, C.M.G., physician to the British legation in Persia, died on Saturday at Teheran.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

STRIKE OF AUSTRIAN PHYSICIANS—OPERATION ON A DOUBLE MONSTROSITY—ABNORMAL ROTATION OF THE HEAD—SPIROCHETES IN A GINGIVAL CHANCRE—JACKSONIAN EPILEPSY—SPINAL INJECTIONS IN GENITOURINARY DISORDERS.

VIENNA, February 5, 1906.

SINCE the first of February a large proportion of the Austrian physicians, particularly the country and circuit practitioners, have been on strike. The causes of this movement depend on the inadequate compensation allowed by the government for vaccinations, the examination of foundlings, vagabonds, etc., and as in addition the authorities are not favorably disposed toward the profession, the strike was decided upon and carried out, thanks to the efficient organization. The sick do not suffer, however, as only services to the government are comprised in the boycott, and it is to be expected that the authorities will yield and concede suitable compensations to the physicians.

An interesting operation has been performed by Prof. Kukula of Prague on the two united sisters, Rosa and Josepha Blazek. Although the twins were united over a considerable area, the two bodies were quite independent, as is shown by the fact that one sister suffered from diseases which did not affect the other. Thus Rosa was subjected to an operation for stone in the bladder, which was successful, and by means of which a calculus as large as a hen's egg was successfully removed. Although the operation was done under local anesthesia, Josepha showed no signs of suffering. The temperature of Josepha was always 0.6° C. lower than that of her sister. The surgical separation of the two succeeded perfectly.

At the Association of German Physicians in Prague the man with the rotating head was presented. This individual, who is an acrobat by occupation, performs the feat of turning his head completely around its axis. The contortion is accompanied by considerable effort, as in addition to other complications the trachea is shut off and the resulting dyspnea permits the abnormal position to be maintained only during a few seconds. Prof. Fischl examined the man and observed an abnormal laxity of the capsules of the cervical vertebræ and of the musculature of the neck. In addition, while turning his head the man rotates the entire cervical spine and also flexes as well as rotates.

Dr. Emil Glas has succeeded in discovering the spirochetes of Schaudinn in a chancre of the gum. The patient was a woman twenty-six years of age, who presented a circumscribed infiltration of the gum between the first and second upper incisors on the left side. There was marked swelling of the submental glands and moderate fever, but the enlarged glands were only slightly painful. In view of this fact and of the peculiar dusky red color of the swelling on the gum, and the hardness of the glands involved, the diagnosis of gingival chancre was made. Extraction of a molar tooth, which was suggested by the dentist as a possible cause for the glandular enlargement, produced no effect. In microscopical preparations from the chancre a few typical spirochetes of the pallida type were discovered in the midst of masses of other spirochetes, *Bacillus fusiformis*, and cocci. Three weeks later the diagnosis was confirmed by the development of a papular rash on the hands and feet and a scaly eruption on the scalp. In view of the highly infectious nature of oral chancres, the discovery of the spirochetes in this situation is of great importance.

Dr. Bela Konrad observed a case of Jacksonian epilepsy. The patient was a boy eleven years old, who manifested frequent convulsions, focal symptoms, facial assymetry, etc., so that after protracted observation the lesion was localized as follows: It was assumed that the diseased area was in the lower part of the central gyrus, which embraces the field of the seventh and eighth cranial nerves. The neighboring centers were also involved to a less degree. Although there seemed to be no doubt in regard to the diagnosis, on operation it was found that no macroscopical changes existed. The ophthalmoscopic examination alone had been at variance with the diagnosis, all the other symptoms being strongly in its favor. Some time later the patient died and at the autopsy it was found that no macroscopical focal lesions were present. This case should serve as a warning in diagnosis, and proves that Jacksonian epilepsy, focal symptoms, and monoplegia may exist without macroscopical changes.

Eugene Remete describes a new treatment for genitourinary conditions by injecting about 10 c.c. of either physiological salt solution, weak cocaine solution, or Schleich's solution into the sacral canal. The injection is made through the hiatus sacralis, and as the spinal cord and its membranes stop at a much higher level, there is no danger of injuring them, the injection really being epidural. The injection may be repeated several times. Remete treated in this way several sexual neuropathies and anemic cases in order to determine the value of the method in regard to the direct effect exerted on the terminal nerves and vessels. Cathelin states that the injection has a shock-like effect on the centers of the conus medullaris, and produces disturbances of molecular equilibrium. According to the results obtained so far, partial success is obtained in enuresis, while in the sexual neuropathies whatever effect obtained is only temporary or due to suggestion.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

THE MANILA MEDICAL SOCIETY—THE CHOLERA—THE LEPER COLONY AT CULION—PERSONAL.

MANILA, P. I., January 31, 1906.

AT the January meeting of the Manila Medical Society, no regular papers were read; the annual election of officers took place instead. Dr. Maximilian Herzog, pathologist of the government laboratory, was elected president, and Dr. Paul G. Woolley was reelected secretary.

The city of Manila has been almost entirely free from cholera during the past month. Only a few cases were reported, and those, with few exceptions, occurred in persons who came from the provinces within twenty-four hours of the time they first showed symptoms of the disease. The cholera situation in the provinces is not so encouraging. There has been a gradual increase in the number of cases reported, until now the daily average has reached in the neighborhood of seventy. More and more towns are becoming infected, and there is no longer a sufficient number of experienced physicians to superintend the measures necessary for the repression of the cholera at the various places at which it has made its appearance.

The principal reason for the continued increase in the number of cases is attributed to the fact that during December the disease appeared in some of the towns of Cavite province, in which are found probably the most densely ignorant people in the Philippine Islands. They refused to believe that the disease was cholera, and even if it was, they are said to have stated that it was probably a punishment sent them by God, and, as such, it would be undesirable to avoid it. Almost all of these people are fatalists, and in consequence take no measures which might insure them against contracting cholera. From the towns above mentioned the disease was carried by fishing-boats to Bulacan province, and it has been the constant re-infection from Cavite that has rendered it impossible to eradicate the disease from Bulacan. With a more effective sanitary policing of the Province of Cavite, there is every reason to believe that the disease could be definitely eradicated.

The experience of the health authorities, so far, has been that wherever modern sanitary principles were carried into effect the disease disappeared in every instance. In other words, it has been clearly demonstrated that if the intelligent cooperation of the people of the infected towns could be had, the disease can be stamped out in comparatively few days. As the educational work in the islands advances, so will the dangerous communicable diseases cease to be a menace in the Philippines.

The Culion Leper Colony is now almost ready for the reception of the first lepers. It only awaits the installation of a few pieces of machinery to make it complete. It is proposed to send first those lepers which are at the present time confined to the leper colony at Cebú. There are in the neighborhood of three hundred and fifty lepers at the latter institution. At the new location it will be possible to give the lepers much more liberty than they have enjoyed heretofore. The island of Culion is to be entirely set aside for their benefit, and they will be allowed to indulge in fishing, growing cocoanuts, and engage in other agricultural pursuits.

It is the intention to give them a large measure of self-government, permitting them to select their own mayor and councilmen, appoint their police, and generally carry out the public duties that are required in modern municipalities.

Major Wm. D. Crosby, medical officer in command, First Reserve Hospital at Manila, has been relieved from further duty in the Philippines, and will proceed to the United States with Major-General Corbin, who will be relieved from duty in the Philippines to-morrow, February 1, 1906, by Major-General Leonard Wood.

Dr. Paul G. Woolley, who has been director of the serum laboratory of the Bureau of Science during the past few years, has accepted a position with the government of Siam in the capacity of director of their pathological laboratory, which they propose to start as soon as Dr. Woolley can reach Bangkok.

Progress of Medical Science.

New York Medical Journal, March 3, 1906.

A Point in the Technique of Breast Amputation for Cancer.—R. F. Weir states that some ten years ago he found that in following up the enlarged lymphatic glands to the very point where the axillary vessels pass under the clavicle, he could often carry the finger under the clavicle to one of the sides of the vessels by pulling the arm vertically upward and then reach the gland, well under and slightly above the clavicle. This procedure has become a fixed rule in his breast cases. When no enlarged glands can be felt through the skin of the neck, the little or forefinger can be carried in this way under or beyond the clavicle its full depth into the neck, and the supraclavicular space behind the sternomastoid muscle fully explored. If enlarged glands are found in the region, the customary incision is made along the edge of the clavicle to the root of the sternomastoid muscle and up a short distance along its posterior border, the space cleaned out of glands and fat tissue. If nothing is found, the breast wound is closed as is usual, save that he prefers to place a small cigarette drain in the hole bored alongside the vessels, to be withdrawn at the end of twenty-four or forty-eight hours. In nearly one-half of his cases he has been able in this manner to find enlarged glands not recognizable by examination before the axilla was opened.

Gonococcic Infections and the Physician's Responsibility.—J. B. Clarke enumerates as possible gonococcic infections balanitis, cavernitis, cowperitis, periurethral infiltration or abscess, and stricture from anterior urethritis; from posterior urethritis, prostatic inflammations, spermatocystitis, and gonorrheal cystitis, which may travel up to the renal pelves. The latter group arise from a lesion marked by chronicity, resistance to treatment, proneness to recur, and an uncertainty of definite and permanent cure. These cases are the ones so often affecting the wives of patients. General infection may result in gonorrheal rheumatism. In children we may have even vaginitis, stomatitis, pelvic inflammations, and ophthalmia. The author traces the course and development of pelvic disease in young women who marry men with uncured gonorrhea. The latest form, the most common in women, presents the great danger of being ever ready to extend, when a favorable opportunity offers, to the uterus and adnexa. He says that if we compare, from a social point of view, the importance of syphilis to gonorrhea, the latter is one hundred times as dangerous as the former, not alone from the standpoint of the number of patients attacked, but also from that of the gravity of the lesions and their perpetuity. All these sad results come from ignorance. The only key to the situation is the light of true knowledge, and the only source of light at present is the medical profession. Authoritative statistical evidence presents the truth of the author's contentions in a startling light.

Suggestions on the Nature and Treatment of Rheumatism.—W. E. Deeks reviews the various theories which are extant regarding the nature of the rheumatic poison, and notes that there are many painful conditions regarded by profession and laity alike as rheumatism, but which in reality have nothing whatever to do with this affection. His own experience has led him to believe that the disease is invariably associated with some stomach disorders of the hyperacid or fermentative type. He concludes that the stomach condition is either the primary factor, or at least an antecedent feature, preparing the way for the invasion of some specific organism. He discusses the common type of dyspepsia and the function of the stomach. He notes, among other facts, that a large part of the ingested sugar undergoes fermentation in the stomach (before it reaches the bowel) by being acted on by the various organisms in that viscus, and that lactic acid is one of these products. Hence we have a fruitful source for this compound, without taking the muscles into the reckoning. The foregoing fermentative processes do not occur in every person. The rheumatic diathesis is probably associated with deficient power in the assimilation of carbohydrates. As to treatment, he notes that salicylic acid is a powerful agent in preventing fermentation of all kinds, including lactic acid. But the matter of primary importance is the regulation of the diet. For a time, at least, there should be an absolute exclusion of sugar and potatoes, limitation of bread, particularly of toast. If fermentation still exists, the administration for a few days of dilute nitric acid in twenty-drop doses, well diluted, before meals; or if constipation be present, rhubarb and soda after meals is indicated. Some one of the salicylic acid series internally, such as sodium salicylate, etc., in physiological doses should be given; and, finally, the administration of counter irritants and electricity, either static sparks or high-frequency currents. When the patient has been a sufferer for a long time, complete recovery is somewhat delayed, as there is undoubtedly some more or less chronic inflammatory tissue which is slow to resolve.

American Medicine, March 10, 1906.

Experimental Methods in Sanitary Science and Sanitary Administration.—William T. Sedgwick says, in sanitation, experience must largely take the place of experiment. He refers to his own studies on an epidemic of typhoid fever, and remarks that comparatively few physicians or sanitarians are in a position to conduct artificial experiments, but almost any wideawake observer, whether he be physician, physiologist, sanitarian, or engineer, may, if he will, find going on all about him natural experiments, the conditions of which may often be learned with great accuracy, even after the experiment is completed, and which may yield conclusions quite as capable of verification as are those of experiments made in the laboratory. This is a matter of encouragement, especially for younger workers. He pleads for better material on Boards of Health, claiming that it is time we should cease experimenting with political appointees and begin experimenting with something better than spoilsmen. Too often a hack politician or two, a second-rate doctor or two, and one or more vain or place-seeking nobodies—useless but not harmless—make up our local boards of health; and as no stream can rise higher than its source, the services of such boards are disgracefully small in quantity and poor in quality. The present plan is a failure experimentally demonstrated; let us continue to invoke the experimental method in which we believe, but abandoning our present customs, which have been experimentally proved—for the thousandth time—to be hopeless, try instead something more promising.

Review of Recent Observations on Treponema Pallidum of Syphilis.—Charles A. Pfender calls attention to the nomenclature of the organism now almost universally conceded to be the etiological factor in the production of syphilis, and states that under the International Code the present correct name of this protozoon is *Treponema pallidum*. He states that thus far, *Treponema pallidum* has been found in over 300 cases of syphilis, and not found in 62 cases examined. Most of the cases which resulted negatively were of tertiary form, while others were undergoing active treatment at the time of examination. In only one out of 138 cases of nonsyphilitic disease examined was *Treponema pallidum* reported. He further states that in view of the results of the experiments made on monkeys and anthropoid apes, the negative results in attempts to demonstrate *Treponema pallidum* in nonsyphilitic diseases, and the numerous positive observations on syphilitics, it is exceedingly difficult to escape the conclusion that *Treponema pallidum* is the organism which produces syphilis. He gives a detailed description of a number of stains, and the various methods employed by different observers in the study of the *Treponema*, and appends an extensive bibliography.

Outlook for the Chronic Dyspeptic.—Mark I. Knapp asserts that the outlook for the chronic dyspeptic is of the brightest. The disease may be due to organacidia gastrica, which he considers under three heads: Organacidia gastrica simplex, produced by the ingestion of large quantities of organic acids; gastrosia fungosa, due to mold growth in the stomach; and zymosia gastrica, due to the growth of yeast in the stomach. Insufficientia pylori, due to a gradual weakening of the pyloric sphincter, is also cited as a very frequent cause of the disease. Organacidia enterica is given as the third cause of chronic dyspepsia, and this the author discusses under the following heads: Acute organacidia enterica, acute enterosia fungosa, chronic organacidia enterica, and chronic membranous enterosia fungosa.

Appendicitis; When to Operate.—S. Edward Sanderson says the true and ample diagnosis takes into consideration the local condition, the virulence of the infection, and the balance established by the patient's reaction to these. Using the local condition as a standard, he divides the disease into the following stages: (1) The disease process is confined to the appendix; (2) the peritoneum is beginning to become invaded by bacteria and toxins penetrating the unbroken wall; (3) an active peritonitis is well under way, still localized; usually with pus formation, with or without rupture of the appendix; (4) a spreading peritonitis is attacking the general peritoneum; (5) a general peritonitis exists, with or without pus; (6) the general peritonitis is subsiding and a local walled-off abscess exists in the right iliac fossa or in the pelvis; (7) nothing remains but a local process (a) with pus, (b) without pus. Dr Sanderson believes the safest general rule is to operate only when general peritonitis is not present. Await symptoms of localization. If a surgeon's own experience and

skill allow him to be more venturesome, he may accept more cases at this stage for operation. It seems greatly to be desired that the profession should adopt a common basis upon this, if it is at all possible. In regard to late operations, no one questions the advisability of evacuating pus. In regard to internal operation, the only question which arises is whether we shall operate if a patient has safely passed through his first and only attack. If it has been unquestionably an inflammation of the appendix, especially if after-symptoms remain, operation is indicated; but if the symptoms are mild, and clear up entirely after the attack, it is generally conceded to be best to await symptoms of an oncoming second attack before operation, in the meanwhile keeping the patient under close surveillance.

Journal of the American Medical Association, March 10, 1906.

Uterine Myomata and Malignant Disease.—T. S. Cullen calls attention to the danger of incomplete examinations after hysteromyomectomy as regards the possible existence of malignant disease. He has been surprised to find how frequently myoma is associated with carcinoma in the large experience at the Johns Hopkins Hospital, and in 1903 he advised opening the uterus immediately on its removal to ascertain whether or not by any chance carcinoma of the uterine body existed, and he now recommends not only the careful examination of the uterine cavity, but also of the myomatous nodules. As an illustration of this, he reports a case of supravaginal hysterectomy supposedly for simple interstitial and subperitoneal myomata. Two years later sudden collapse occurred, due to hemorrhage from sarcoma of the cervical stump. Reexamination of the original tumor showed typical sarcomatous changes of the myoma. The patient died eight months after a second laparotomy and about two months after progress of the growth had necessitated an operation for obstruction of the bowels. The case, he says, clearly indicates that physicians should examine carefully, not only the uterine cavity, but also the myomata, before the cervical stump is closed.

Blood Platelets.—Mary W. Rowley gives figures of blood plates much larger than those from one to three microns in diameter usually described. She has found these larger forms present in cases of pernicious, splenic, and severe secondary anemia, and also in malaria, myelogenous leukemia, and in normal blood. In the last three a modification of Wright's stain was employed. While admitting that the larger size may be due in part to squashing, as it is most evident at the periphery of the blood smear, where the leucocytes also are enlarged, she thinks that another reason is that, with the ordinary technique, only the central deep-stained portion is visible at all. The periphery remains unstained and invisible, except when the platelet lies on a red cell. With the modified Wright stain used, the definite, usually rounded outline of the periphery is distinctly shown. She believes that with a suitable staining method plates similar to those figured can be found in all or nearly all blood, normal and pathological. She is now trying to work out such a method.

Carcinoma of the Prostate.—H. H. Young gives the results of the study of fifty cases of cancer of the prostate and describes the radical operation performed by him, including the excision of the entire prostate with its capsule and urethra, and the adjacent portion of the bladder, the seminal vesicles, and the ampulla of the vasa deferentia. He considers this a common disease, existing in about one-seventh of the entire number of cases of prostatic enlargement in men over fifty. Induration and pain are common, and aid the early diagnosis. The growth is often slow, confining it within the limits of the firm prostatic capsule for a long period. He claims that his operation, which is necessary for its cure, is not difficult, and gives very satisfactory functional results, and that with early diagnosis the mortality should be *nil*, and the percentage of cures large. Every indurated, enlarged prostate should be suspected, and a perineal operation advised, when, if malignancy, be discovered, the radical operation can be resorted to. The article is illustrated.

Treatment of Aneurysm by Direct Gradual Arterial Closure.—The advantages of utilizing the method of active clot formation for the cure of aneurysm are pleaded by R. T. Stratton, who points out that it is the natural method when spontaneous cure occurs, and also that by which the best results have been obtained in the surgical treatment of the condition. He reports in detail a case of aortic aneurysm thus treated by a constrictor applied above the sac and gradually tightened. The patient did well for nearly two days, but then rapidly failed with sensory and motor paralysis of the lower limbs, and died on the second day after the operation. The autopsy showed that the constriction had been applied above the celiac axis, the aneurysm extending above that branch; the death was attributed to inhibition of the functions of the abdominal viscera by the final withdrawal of the blood supply. There was no perceptible evidence of injury of the vessel at the point of constriction, and the sac was fairly well filled with a stratified clot of the active type, in spite of the short time that had elapsed. Notwithstanding the fatal outcome of this case, Stratton considers that it warrants a hopeful future for this method. The ease with which the constriction was borne by the patient; the formation of a large mass of laminated coagulum; the apparent maintenance, up to the last closure, of the lumen of the arterial branches arising within the sac and distributed to the vital organs; and especially the freedom of the aorta itself from evidence of traumatism, inflammation, or necrosis, all form the basis of a belief that this method will be available for many cases of otherwise hopeless aneurysmal disease. Its chief field of usefulness will undoubtedly be found in cases of aneurysm of the abdominal aorta, where ligation is almost necessarily fatal, and other methods are either impracticable or still more dangerous. He points out, nevertheless, still other conditions in which he thinks it will be of value and preferable to the ligature. The advantages of gradual occlusion over ligation in cases in which arterial branches supplying vital organs arise from the sac are obvious. The article is illustrated.

Fecal Impaction of the Rectum.—T. C. Martin reports cases of this condition and describes its causes and treatment. The usual recommendation is to anesthetize the patient and to employ irrigation. The object of his paper is to point out the advantages of the use of the proctoscope in these cases. The treatment consists in the elevation of the patient's hips, introduction of the proctoscope, withdrawal of the obturator, and illumination of the rectum, for which purpose he has devised a special candlestick, which he describes. Through the proctoscope, by means of forceps and spoon, the impacted masses are easily removed without manual contact. Recurrence of the condition is to be prevented by removal of any obvious cause, such as valvular obstructions, etc., and limiting diet to meat, fruit, and vegetables containing little starch. Bathing, free drinking of water, enemas, massage, and exercise are advised. Cathartics are condemned in these cases.

The Lancet, February 24, 1906.

Massage of the Stomach in Flatulent Dyspepsia.—This procedure is commended by H. Statham, who records the case of a man in whom the attacks of flatulency came on without apparent cause, often lasted several hours, and produced severe prostration. All drugs were without effect. Finally vigorous kneading movements of the stomach were made and sounds could be elicited suggesting the passage of gas from the stomach into the duodenum. Later the gas was passed per anum. The explanation of the relief afforded is that the stomach was paralyzed by its extreme distention which was relieved by the kneading movements.

Recurrent Herpes Gestationis.—An interesting case of this rare condition is reported by C. A. Bryan, whose patient was a woman of 36 years. The author believes that pregnancy is not merely a predisposing factor but is really the existing cause, some peculiar toxin elaborated during pregnancy, acting on the nervous system. This toxin is probably developed by some morbid change taking place in the ovaries as instanced by the usual aggravation of the skin lesions at the monthly epochs and also by its continuance for a short time after the termination of the pregnancy. In some cases it is justifiable to induce premature labors if the patient's health is affected by the insomnia caused by the pain and prostration. Drugs are generally without effect.

Oral Sepsis.—S. Spookes comments on the well-recognized fact that the mouth is the breeding place for many infectious organisms, and enumerates the following causes of oral sepsis: Neglect in cleaning the teeth, existence of cavities in them, alveolar abscess, difficult eruption of lower wisdom teeth, leading to ulceration of the gums; deposition of tartar from the saliva, which, in addition to favoring the retention of organisms and food products, separates the gum margin from the necks of the teeth and the various forms of pyorrhea. Treatment begins with thorough mastication. Our forefathers were not in a hurry to catch trains, and took time to chew their food thoroughly; their food was hard and toughed, and required more mastication, and this resulted in a large flow of saliva, beneficial not only for gastric digestion, but also for the teeth. All carious teeth should be made effective or removed. Tartar deposits must be taken off and antiseptic mouth rinses freely used. In pyorrhea all calcareous deposits must be thoroughly removed and the pockets disinfected with

peroxide of hydrogen. If the gums are very redundant the pocket may be abolished by rinsing the loosened gum with the electro-cautery. Some cases have been benefited by the injection of vaccines prepared from the micro-organisms found in the respective cases. These produce an increase in opsonic power, and improvement in general and local conditions follows.

British Medical Journal, February 24, 1906.

Epistaxis and Calcium Chloride.—H. S. Ware prescribes the remedy in twenty-grain doses, to be given at intervals of two hours if necessary, and then, whether the bleeding stops or not, to withhold the remedy for several hours. Its persistent administration will diminish, not increase the coagulability of the blood.

Shellfish, Seaweed, and Sewage.—Commenting on the fact that the growth of one of the seaweeds called *Ulva latissima* in any quantity depends on sewage pollution of the water in which it appears, J. T. Nash notes that he found fragments of this weed on some mussels purchased in a market. In the same mussels also he found evidences of sewage pollution, for they contained the *Bacillus coli communis* and *Bacillus enteritidis sporogenes* in large numbers.

Salicin in Acute Rheumatism.—A. J. Garland believes that salicin has a distinct influence in preventing rheumatic heart complications. When the case is first seen, he orders fifteen to twenty grains of salicin every two hours until the symptoms improve, then gradually decreases the dose, and when all symptoms have disappeared, discontinues it gradually by diminishing doses, and increasing the intervals between them; the usual result of this treatment is, that in two or three days the symptoms have nearly all disappeared, whereas most cases, in his experience, that have been treated with the salicylates, drift into endocarditis, with permanent valvular lesions. Salicin is a tonic, the salicylates depressant. If we accept the theory that acute rheumatism is of microbic origin, we can understand the excellent effects produced by flooding the tissues with salicin, from its germicidal action.

Intrahepatic Calculi.—A case of this nature is reported by H. R. Vachell and W. M. Stevens, who, at the close of their paper, review briefly the literature of the subject. Their patient was a man of fifty-two years, who gave the usual symptoms of obstructive jaundice, and finally died in coma. Peculiar features of the case were impaired health ever since the age of eleven years, when he had typhoid fever, the non-appearance of jaundice until about three weeks before death, freedom from fever until one month before the fatal result, and a normal or subnormal temperature during the latter weeks of his fatal illness (although an abscess was found on autopsy between the diaphragm and the liver, with other foci of suppuration), and a gall-bladder free from signs of cholelithiasis. The *Bacillus coli* was isolated from the abscesses on the surface of the liver, which weighed ninety-seven ounces. Several pictures of the organ are given, showing calculi *in situ*. No less than 520 separate stones were found, the largest weighing 270 grains. The hepatic ducts through the whole organ were dilated and in many places there were large cavities, with a shining internal lining. These contained calculi, mucus, and bile, but no pus. No typhoid bacilli were anywhere found.

Whitlow and its Treatment.—G. B. Mower White enumerates as the varieties of whitlow, the subcuticular, subcutaneous, thecal abscess, and subperiosteal abscess. The cause of all is generally a streptococcus. If the infection is beneath the skin the tendency for the inflammation to spread is greater than if the inflammation begins superficial to the cutis vera. In the subcuticular variety, we should avoid deep incision for fear of introducing the infection beneath the skin. We should immerse the finger in a hot solution, so as to soften the cuticle as much as possible, and with the scalpel held flat, shave off the cuticle until we have opened the inflammatory focus and evacuated the drop of pus. The next variety is the commonest of all, the subcutaneous, and the treatment is early incision through the top of the finger, through the fibrofatty pad, sufficiently deep to expose or incise the whole thickness of this pad, but not so deep as to run any risk either of incising periosteum of the bone or of opening the tendon sheath, which ends over the front aspect of the terminal phalanx of the finger. With these two reservations, a free incision, which can be done without giving an anesthetic, should be made in the middle line, directly through the fibrofatty pad of the finger. In the thecal abscess we should make the area bloodless by an Esmarch bandage under general anesthesia, incise the skin and subcutaneous tissues, and then find, if it is necessary to open the tendon sheath. If in doubt, tap the sheath with a needle, and if the fluid is turbid open the theca. The incision should traverse the site of infection, and a second incision should be made at the other end of the tendon sheath. The latter should never be laid open from end to end, for then the tendons stand out from the finger and invariably slough. The treatment of the fourth or subperiosteal variety of whitlow is comparatively simple. It consists in making an incision through the fibrofatty pad at the top of the finger down to the bone. Care should be taken not to cut so high as to endanger opening the tendon sheath. This incision gives free drainage; about a month later one is able to remove so much of the ungual phalanx as has necrosed. With few exceptions the base of the bone with the attachments of the flexor and extensor tendon survives and the wound heals without further trouble. Lead and spirit lotion (ʒss of each to 1 oz. of water) is the best application for all forms of terminal whitlow. The after-treatment of all forms consists in manipulation and massage. The paper brings out many interesting anatomical details, and is well worth reading in its entirety.

Berliner klinische Wochenschrift, February 19, 1906.

Observations on Abdominal Hysterectomy for Cancer.—Veit says that in order to gain the confidence of the laity sufficiently to induce women with uterine carcinoma to seek medical aid at as early a date as possible it is essential to reduce the mortality of the operation to such a point that it will be comparable to the risk attending laparotomy for other causes. This has heretofore not been the case, and the author ascribes the bad results in this particular operation chiefly to three factors: infection through germs present in the cancerous tissue, the dangers of the anesthesia, and complications such as pulmonary embolism through infection of the veins. In cases in which the operation is performed early the danger comes chiefly from infection through germs contained in the new growth, while in those that are more advanced cardiac failure is a more important cause of death. In order to combat infection from the growth itself Veit advocates the use of what he terms subjective disinfection by means of injection of antistreptococcus serum. The dangers attending anesthesia he reducees by performing his operations under spinal anesthesia, which he says he has found perfectly satisfactory. Complications originating in the large veins are to be avoided by more careful hemostasis and to effect this it is important to locate and ligate the afferent arterial trunks early in the operation; by doing this troublesome hemorrhage is never encountered. In the last twenty operations of this sort performed by the author only two deaths occurred, and Veit asserts his belief that these also were avoidable and ought not to have taken place.

Marmorek's Antituberculosis Serum.—Hoffa says that the contradictory statements that have been published in regard to this serum lead him to express his own conclusions in regard to it. He has used the preparation in his clinic and polyclinic for two years and about forty cases of all sorts of bone and joint tuberculosis have been treated by its means. No undesirable effects on the course of the disease that could be ascribed to the serum were over observed. Severe advanced destruction of tissue was not checked by the serum, though in some instances extensive osteomyelitic processes were brought to rapid cicatrization or cure, and in many cases the serum exerted a favorable influence on the temperature, general well-being, and the local condition. Abscesses were healed more quickly than usual. On account of the tendency to disagreeable local reaction when the serum was given subcutaneously the author was led to try its rectal administration. The result was so satisfactory that he has made this the routine method and states that the serum may in this manner be administered for months at a time without giving rise to any local or general serum reaction. While it is still too early to offer definite conclusions Hoffa counsels further investigation of this apparently useful agent.

Münchener medizinische Wochenschrift, February 20, 1906.

Suture of the Patella.—Schäfer describes a method of treatment for fracture of the patella originated by Witzel, which is free from the objections usually urged against the ordinary operative procedures employed for this injury. A short, preferably slightly curved, trocar is pushed through the quadriceps tendon above the patella, and another one through the ligamentum patellæ below. The stylet is removed from each and through each cannula a silver wire is threaded, the ends being united over a compress placed over the broken bone. In order to avoid interposition of the lacerated bits of fascia between the bone fragments, the skin and underlying soft parts are forcibly drawn upward and downward respectively by the operator and an assistant immediately before the trocars are introduced, while at the same time the bone frag-

ments are approximated. The procedure can be carried out under local anesthesia, and at the expiration of from five to eight days daily massage of the musculature can be begun. With the beginning of the third week passive, and then active, movements are commenced, and the wires are removed at the end of from four to five weeks. The treatment is finished at the end of six or seven weeks. The simplicity, safety, and effectiveness of the method are strongly emphasized by the author.

The Radical Operation for Femoral Hernia.—Berndt proposes the following modification of Lotheissen's operation for this condition. The skin incision is made parallel with Poupart's ligament and the hernial sack is isolated, tied off, and removed in the usual way. The inner extremity of the skin incision is then drawn upward and inward so as to expose the external ring, and the fascia of the external oblique is slit up in the direction of its fibers for a distance of five or six cm. The spermatic cord, or the round ligament, is then worked inward and backward until the inner side of Poupart's ligament and the horizontal ramus of the pubic bone are exposed. The sutures are then passed through the lower border of the internal oblique and transversalis, and, under the guidance of the finger passed through the external opening of the femoral canal, Cooper's ligament. The sutures are brought out of the femoral canal, the upper end of each being drawn through by means of a clamp pushed up from below. More than three or four sutures are seldom required, and after all have been passed they are tied, beginning with the one lying most externally. The cord or round ligament is then allowed to slip back into position and the incision in the external oblique is closed. The outer surface of Poupart's ligament is fixed to the fascia of the pectineus with two or three further sutures. In this way the femoral canal is completely obliterated, its inner opening being shut off by a broad muscular wall while its outer aperture is closed by the last-mentioned sutures and the canal itself is narrowed to a crevice whose walls become adherent. The author considers this procedure superior to Lotheissen's in ease of execution and serviceability.

Deutsche medizinische Wochenschrift, February 22, 1906.

Artificial Ear Drums of Paraffin.—Hamm says that the various artificial ear drums that have been suggested by different aurists are all open to more or less serious objections, the most important of which is the fact that none of the materials used for the purpose are entirely free from irritating properties. He advises the application of paraffin having a melting point at 45°C. for this purpose, and states that this substance is absolutely unirritating. On several occasions patients have worn ear drums made in this way for three or four months without experiencing any undesirable effects. If the drum has been applied prematurely so that some suppuration continues after its insertion no harm results, for the secretion readily loosens the paraffin and causes the drum to be expelled together with the discharge. The technique of application is as follows: The edge of the perforation is cocainized and dried off; the aperture is then covered with a piece of sterilized gauze which has been dipped in melted paraffin and is gently pressed into place. The paraffin hardens in a very few moments and effects an air-tight and water-tight closure of the opening so that the patient may bathe without danger. It is advisable to warm the speculum and forceps and to warn the patient to hold still, otherwise the paraffin may solidify before the drum is in position, thus necessitating another attempt.

Acute Iodism and Thyroiditis.—Lublinski refers to the well-known propensity of iodine when given internally to cause swelling of the parotid gland, an observation which he had occasion to make quite frequently in treating syphilitics in the polyclinic of the Berlin University. Swelling of the submaxillary glands is less frequent but the author has observed three instances of it. It is still more unusual for the typhoid to be affected by the administration of iodine, but several cases have been reported in the literature and the author adds one of his own to the number. The patient was a woman of 52 years, who four days after taking 20 c.c. three times daily of a 5 per cent. potassium iodide solution developed well-marked uniform swelling of the thyroid gland. On stopping the medication the swelling subsided and on resuming the use of the iodide the enlargement promptly reappeared. The author states that the observation is particularly interesting owing to the fact that the thyroid gland is the only organ which contains iodine *per se* and experiments on dogs have shown that the thyroid gland is a site of predilection for the deposition of iodine.

An Apparatus for the After-treatment of Pneumothorax.—Seidel says that although considerable time has elapsed since the introduction of the pneumatic principle in performing intrathoracic operations devised by Sauerbruch and others, the methods have not as yet been very widely tested. This is largely due to the expensive and complicated nature of the apparatus required and to the technical difficulties involved. A feature of considerable importance is the fact that owing to the extreme susceptibility to infection of the pleura, in most cases surgeons would be adverse to closing thoracic wounds without drainage, and if such openings are left the pneumothorax which such pains were taken to avoid by the pneumatic apparatus at once ensues, as it is impracticable to keep the patient for an indefinite period in the apparatus. Seidel presents a device intended to overcome this difficulty. It consists of a shallow, metal box having a glass lid which can be fastened down air-tight, while the bottom consists of a movable plate having a large central opening. Suitable inlets and outlets are provided to enable connection to be made with a water suction pump, a manometer, and a receptacle for receiving the secretions. The apparatus is placed over the wound in such a manner that the opening in its bottom corresponds to the line of incision and the soft rubber collar forming part of its lower edge is affixed to the patient's body by means of adhesive plaster so as to form an air-tight joint. The interior of the box is filled with dressing material and the movable bottom pressed against the skin by two screws; the object of this feature being to prevent the formation of cutaneous edema when suction is made. A negative pressure of any desired degree may thus easily be secured and in most cases it will be possible to leave the apparatus in position long enough to enable pleural adhesions to form and thus preclude the possibility of collapse of the lung when the suction is stopped.

The American Journal of the Medical Sciences, January, 1906.

A New Method of Operating on Dupuytren's Contraction of the Palmar Fascia.—W. W. Keen cites the history of a case in which he successfully used neural infiltration. The diffusion of nodules all over the center of the palm of the hand was such that the ordinary operation for dissecting out the contracting bands would have done no good. Before the operation, the skin just above the wrist over the median and the ulnar nerves was infiltrated with a solution of beta-eucaine and adrenalin. A few drops of this solution was injected into these two nerves which had been exposed. Scarcely any diminution of sensation, however, was produced by the infiltration. Into each nerve was then injected four or five drops of a 4 per cent. solution of cocaine. Within three minutes the operation was begun without the slightest pain. The writer removed the entire palmar fascia by lifting a flap consisting of all the tissues of the palm down to the sheath of the tendons. The incision was begun at the ball of the thumb, going down almost to the web between the forefinger and middle finger, crossing thence to a point just above the web between the ring and little fingers, and up to a point corresponding to the beginning of the incision on the other side of the hand. By lifting this flap, enough nourishment to it was retained to prevent sloughing, at the same time rendering the palmar fascia entirely accessible for removal. By simply undermining the skin, the parts going to the index and little fingers were reached with perfect ease. The results of this operation were most happy.

The Success Which Attends the Operation of Cataract Extraction.—Samuel Theobald, in speaking of the causes which have contributed to the improvement of results in cataract operations, believes that the method of operating for senile cataract which we owe to von Graefe, is perhaps the most far-reaching of these. The introduction of this method marked a new era in the surgery of cataract. Koller's discovery of the anesthetic action of cocaine ranks next in importance. Surgical cleanliness contributes materially to the success of operations upon the eye. Skilled nursing, improved hospital facilities, provision against postoperative accidents afforded by various well-known contrivances, and the more definite specialization of eye surgery, are other causes which concern the present day success in cataract operations. As to the failures which occur in this work, it must be remembered that a goodly proportion of cataractous eyes are unsound in other respects; that as cataract is especially a disease of advanced age, its subjects are frequently not in the best condition for surgical procedures; and finally that the temperament of the patient has much to do with the outcome of every operation for cataract. An intractable patient is an important factor in the unsuccessful outcome of an operation.

On the Use of Opium in Myocarditis, Weak Heart, and Dilated Heart.—John H. Musser declares that there are sound clinical reasons for the belief that opium is a tonic in cardiac debility. He pleads for the continuous use of opium or morphine in myocarditis to prevent angina pectoris, or to lessen the effect or to defer the dreaded

asystole. Opium is of advantage in cases of weak heart after exhausting disease, after prolonged mental and physical pain, and without organic lesion of valves. In cases of failing compensation, with the onset of stases, especially if the patient is fretful, opium supports the heart. This drug is valuable in the gradual engorgements from myocardial dilatation, in chronic parenchymatous nephritis, and in arteriosclerosis. The second daily dose of opium greatly soothes a hypersensitive or hypochondriacal patient. The dyspnea of myocarditis is relieved or prevented by continuous small doses of morphine for a very long time, and the tachycardia of Graves' disease is relieved by this drug.

Classification of the Cases Heretofore Called Rheumatoid Arthritis.—P. William Nathan has carefully studied some two hundred cases of which records have been kept, as well as an indefinite number in which notes were not taken. From his researches he believes that there is no such thing as a distinct disease, rheumatoid arthritis, and that polyarthritis is a many-sided subject which still presents many unsolved problems and which must still be studied from a broad and unbiased standpoint. The various cases heretofore known as rheumatoid arthritis, the writer believes, are representative of no single pathological entity, but, on the contrary, are examples of various distinct clinical and pathological conditions which often differ greatly from one another. These the writer divides roughly into two great classes: 1. Metabolic joint diseases. (a) Arteriosclerotic form. (b) Autotoxic form. 2. Infectious polyarthitis.

Annals of Surgery, December, 1905.

The Operative Treatment of Tumors of the Bladder.—The sub-title of F. S. Watson's paper is "a proposal to substitute bilateral lumbar nephrostomy and the establishment of renal fistulæ in cases of bladder tumor, for ureteral implantation in connection with bladder resection or total extirpation and that the bladder operation be done after an interval and not together with the nephrostomies." The first part of the paper is devoted to a consideration of what has been done in times past by former methods of operation. The latter part deals with the new plan the author has to suggest. He thus states the results of operation up to the present time: If the operative deaths and rapid recurrences are combined under the one heading of operative failures; such failures are seen to have occurred in 28.6 per cent. of benign tumors, exclusive of myxoma and in 46.0 per cent. of cases of carcinoma. He thinks that the very large percentage of recurrence seems to point logically to the necessity of more radical measures in benign as well as in cases of malignant tumors, if we are to hope for better results. The suggestion the author has to make in this respect is, that total extirpation of the bladder, and of the prostate if it be involved in the pathological process be done at the outset in all cases of carcinoma that have not extended beyond the limits of the above-named structures, and in which it is believed that there are no metastases, and that the same measure shall be applied in all cases of benign growths in which recurrence has taken place after a primary operation for their removal. Ureteral implantation, which contributes, as it seems, to the surgical failures, should, he believes, be abandoned, and lumbar nephrostomy, with ligation of the ureters, done instead and at some time previous to the operation for the removal of the tumor, as it seems to offer a much safer and less objectionable way of disposing of the most difficult part of the latter operation. The technic of the operation proposed by the author is given in full, but is too elaborate for reproduction here.

The Roentgen Method in Lithiasis.—In a paper illustrated by several skiagrams Carl Beck discusses the present status of the *x*-ray method of diagnosis as related to lithiasis. He speaks of its limitations, proper mode of application, stating that the criterion of a good plate is that the vertebræ, the eleventh and twelfth ribs, and the outline of the ileopsoas muscle shall be clearly defined. A plate showing merely calculus-like shadows but failing to define the above-named landmarks is misleading and should not be relied upon as a guide for operation. His experience has taught him that it is always necessary to skiagraph the renal regions whenever a vesical calculus is suspected. He has always found, since so doing, that renal calculus existed whenever there was a concretion in the bladder. Most vesical calculi are formed in the kidneys, and thus is explained the frequent post-operative recurrence of vesical calculus. The histories of two interesting cases are given in detail.

Destroying the Urogenital Diaphragm or Pelvic Floor as a Means of Relieving Prostatic Ischuria; a New Operation.—E. W. Andrews discusses this operation, his general conclusions being expressed in the following preparations. (1) The male pelvic outlet is a narrow long ligamentous triangle, often too small for the senile prostate. (2) The overgrown prostate would not obstruct the bladder were it not compressed between the jaws of the pelvic bone. (3) The triangular ligament and urogenital diaphragm hold the bladder neck and prostate immovable between these bones. (4) On cutting away these bands the constricted overgrown mass falls back into a wider space and ceases to be obstructed. (5) Incidentally great relief of rectal reflexes and spasm results. (6) The retroprostatic pouch is abolished and the *bas fond* becomes a true funnel with its outlet at the lowest point. The author describes the operation devised by him. The initial incision was first made from the symphysis, about 8 to 10 cm. long, parallel to the ramus, the spermatic cord being drawn well forward; but now the author prefers to hold up the testicles out of the scrotum with a truss or binder and then to cut the skin and fat in a curved flap corresponding with the pubic arch. The structures of the perineum are thus freely exposed, the apex of the flap made being the pendulous portion of the penis. When traction is made the opening becomes diamond-shaped, and shows the following structures from the symphysis backward: (1) A space of fat about one-half inch wide; (2) the ligaments attaching the penis to the pubis, and the prostato-pubic ligaments between which pass (3) the crura of the corpora spongiosa each side; (4) a large vein, the dorsal vein of the penis, with two smaller arteries and two nerves. The fibers of the levator ani muscle, embracing the prostate and the inner surface of the obturator internus, come forward in the lateral part of the field, and the deep fascia fills the whole space with a strong covering, which must be cut away in front before the surgeon gets inside the pelvic floor. The internal pubic artery, and particularly a large branch to the bulb, must be avoided in doing this. The vessels here encountered are pushed aside, pubic ligament of the penis divided, the deep fascia and part of the levator ani cut off. Then traction on the penis brings into view the membranous urethra and prostate. The latter becomes more visible by section of the pubo-prostatic ligaments. The pelvic diaphragm supporting the prostate is then cut along both lateral borders. Then the whole mass, including prostate and neck of bladder, falls backward and downward. Danger of hemorrhage is lessened by the use of broad ligament forceps, cutting between them and the prostate and then using hemostatic ligatures on the stumps.

The Law of Accelerating Risk in Cancer.—E. W. Andrews advances the following theorem: (1) The risk of recurrence (or rate) in malignant growths increases as the square of the time of growth or, conversely, the risk of recurrence diminishes in the ratio of the square not of the time after incidence. The author gives rules as to how to plot the "risk curve" in a given case and one or two clinical histories to illustrate its accuracy. He claims that experience shows that we can in this way exclude with fair accuracy those cases which ought not to undergo operation. A careful application of this law puts the surgeon at a middle stage of any case almost in the position of one who has seen its full course. He feels certain that the first stages of any growth furnish the data for all the later stages, whether the tumor grows slowly or rapidly. While each case has its own rate of progression, that rate once determined will accelerate uniformly according to the law of squares.

The Use of X-Rays in Carcinoma.—W. A. Pusey declares that carcinoma tissue on the surface can with practically unvarying regularity be destroyed with the *x*-rays and be replaced with healthy scar tissue. He records the histories of two cases in which carcinomatous mammæ was converted into connective tissue showing that such a result is a clinical possibility. In the use of the rays two questions have to be considered. (1) Is the danger of metastasis in epithelioma increased by their use, and (2) is there danger of stimulating and rendering more rapid the growth in inoperable cases. The author believes that a negative reply can be given to both of these questions.

Brown Atrophy of the Heart as a Result of Cholecystitis and as a Complication of Cholecystectomy.—Bayard Holmes gives the history of a case of the above nature, his patient being a woman aged thirty-two years. Numerous attacks of biliary colic led to the performance of a cholecystectomy. In a few hours she was nauseated, pulse became rapid, face cyanotic with delirium. She died with increasing cyanosis and died in the evening of the day of operation. Autopsy revealed no hemorrhage or sepsis in connection with the wound. The autopsy findings are thus summarized: Cholecystectomy, brown atrophy of the heart, atheroma of both coronary arteries and the large blood-vessels, chronic diffuse nephritis, interstitial type, slight splenic tumor, chronic interstitial oophoritis, with hydrops folliculi, hyperemia of the pancreas. The author desires to call the attention of the profession to the possibility of a change in the heart and the larger blood-vessels due to sepsis, incident to cholecystitis, or the infection of the other natural cavities of the body, the sinuses of the head and face, the pelves and calyces of the kidneys, the appendix, the tubes, and the posterior urethra.

Book Reviews.

THE INFLUENCE OF THE MENSTRUAL FUNCTION IN CERTAIN DISEASES OF THE SKIN. By L. DUNCAN BULKLEY, A.M., M.D., Physician to the New York Skin and Cancer Hospital; Consulting Physician to the New York Hospital; Consulting Dermatologist to the Randall's Island Hospitals, to the Manhattan Eye and Ear Hospital, and to the Hospital for the Ruptured and Crippled. New York: Rebman Company; London: Rebman Limited, 1906.

THE author of this interesting monograph has a peculiar faculty for unearthing half-buried observations and forgotten facts in medicine, and bringing them together and comparing them in such a way as to throw light upon many unknown or only partially recognized truths of real importance in pathology. In his work on "Syphilis Insontium" he showed in a striking and most convincing way that this disease, hitherto regarded by the majority of the profession as well as by the laity as a reproach and an evidence of sin on the part of the unfortunate victim, might be and in a large proportion of cases actually was acquired innocently, and by those guiltless of sexual misdeeds. The fact was, of course, known before, but the recorded observations were isolated and were regarded almost as curiosities in medicine; to-day, thanks to the overwhelming array of cases collected in the work mentioned, the opinion is gaining ground that syphilis is one of the infectious diseases having scarcely any more significance of sexual fault than smallpox or diphtheria, and the conviction is even growing that the malady should be taken out of the category of venereal diseases.

The present little work has no such important mission to fulfil, yet it is one that opens up a new line of research and blazes a path which may lead to important results, not only in dermatology, but also in the physiopathology of menstruation. After a brief introduction treating of the physical changes manifested by variations in weight, fluctuations in body temperature, etc., characteristic of the menstrual period, the author reviews the clinical facts taken from his own case histories and the recorded observations in literature which show the intimate relation between the menstrual function and various cutaneous manifestations. Among the diseases of the skin which have been found to occur or to undergo exacerbation during the monthly period we find mentioned: Acne, eczema, herpes, pemphigus, dermatitis herpetiformis, papular eruptions, urticaria, edema and cutaneous nodes, erythema, erysipelas, ecchymoses and purpura, pruritus, psoriasis and dermatitis seborrhœica, hyperidrosis, chloasma and melanoderma, furunculosis and abscess, syphilis, lupus, epithelioma, scleroderma and morphœa, alopecia areata, hypertrichosis, and various other minor unclassified affections.

In explanation of the relations between dermatoses and menstruation, Bulkley considers three theories, viz., cyclic changes taking place in the general system, autointoxication of genital origin, and nervous reflex irritation from the congested condition of the uterus and ovaries, and states his belief that the effects may be produced in different cases in each of these three ways. It must be confessed, however, that there are many obscure points that need elucidation before the pathogenesis of menstrual dermatoses can be satisfactorily explained.

In the treatment of the disorders under discussion, the author advises against an exclusive therapy of the generative organs, though recognizing the desirability of treating obvious lesions of these parts. Local treatment of the skin lesions must also, he believes, play a relatively unimportant part in the management of many of these cases, for, he says, "the menstrual influence on the eruption is only the result of some derangement farther back in the life processes of the body which must be reached if any treatment is to be effectual." A really satisfactory and scientific treatment of these disorders of the skin must evidently wait upon the discovery of the mode of their production. The therapeutic suggestions contained in the last chapter of this brochure are therefore useful, but must be regarded as empirical rather than specific. The great value of the work lies less in its practical application than in the stimulus which it offers to further research. It has indicated a new field for investigation by both the gynecologist and the dermatologist, which, if industriously tilled, will undoubtedly prove remunerative.

FOOD AND DIET IN HEALTH AND DISEASE. By ROBERT F. WILLIAMS, Professor of Principles and Practice of Medicine in the Medical College of Virginia, Richmond. Philadelphia and New York: Lea Brothers & Co., 1906.

IT is a hopeful sign that medical writers are devoting themselves in increasing numbers to the preparation of works on diet, hydrotherapy, hygiene, and other non-medicinal methods of the prophylaxis and cure of disease. There are other excellent works on diet already before the profession, but that makes the present book none the less welcome. Without disparagement, we may say that the treatise before us is less scientific in its presentation of the subject of foods than some of its predecessors, for through that very fact it is adapted to the needs of a wider circle of readers. The plain, everyday, family physician has no time to study the chemistry of foods, and is little concerned with knowing the exact number of calories which a given weight of beans or roast beef will supply, but he does want to know in a general way what diet is best for his patient and how the foods constituting that diet shall be selected and prepared. This need of the general practitioner is what Dr. Williams has endeavored to meet, and has successfully met, in the book before us.

The work is divided into two parts: I., Food in Health, and II., Food in Disease. To borrow from the publishers' prospectus (which a careful examination of the work convinces us is not exaggerated): "In Part I. the needs of the body for different kinds of food, and the manner in which they are utilized, are explained. The principles of cooking and detailed descriptions of the different articles of food in common use are given, with chapters on the proper nourishment of infants, children, adults, and the aged. Part II. deals with the variations from the normal diet which are necessitated by the more common diseases, and includes a section on the general methods to be observed in feeding the sick as well as special directions for nourishment in the different diseases."

The author has the command of an agreeable style, and his book is not "dry reading" in any part. An opening chapter is given to the chemistry of food, a second to the physiology of digestion, and a third to cooking; the remaining chapters of Part I. deal with the different sorts of food and their value in nutrition. The second section treats of the special dietary indications in various diseases. Incidentally the book contains numerous suggestions and hints which are of practical value. To quote only one: In treating of coffee, the author says that "a small cup of black coffee, taken early in the morning before breakfast, will often relieve constipation," which is a fact, yet one not generally known. We can confidently recommend this work as a useful contribution to the important subject of dietetics.

A SYSTEM OF MEDICINE by Many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M.A., M.D., LL.D., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge; Fellow of Gonville and Caius College; and HUMPHRY DAVY ROLLESTON, M.A., M.D., F.R.C.P., Physician to St. George's Hospital and to the Victorian Hospital for Children; Sometime Fellow of St. John's College, Cambridge. New Edition, Revised Throughout with Additions. New York: The Macmillan Company; London: Macmillan & Co., Ltd., 1905.

IN the nine years since the appearance of the first edition of this first volume of Allbutt's System of Medicine, no very striking changes have occurred in the subjects of which the several articles grouped under Prolegomena treat. These subjects include, among others, medical statistics, nursing, dietetics, physical exercise, massage, life insurance, climatotherapy, hydrotherapy, electrotherapy, hygiene of youth, old age, inflammation, and fever. One entirely new subject, that of x-rays in medicine, is introduced, and another, practically new, is transferred to this volume from Volume VI. (the Editor mistakenly says Volume V.) of the old edition. The second part contains articles on some of the infectious diseases, namely, septicemia and pyemia, erysipelas, infective endocarditis, cerebrospinal fever, influenza, diphtheria, tetanus, enteric fever, and relapsing fever. These articles appear to have been very extensively revised and are, so far as a careful examination shows, thoroughly up to date. Those who know and value this excellent system of medicine will be glad to learn of this new edition, but it is disappointing to be told by the editor that it is to come out at the rate of but one volume a year. The second volume, which is promised for the end of the present year, will be largely devoted to the consideration of tropical diseases.

BERLINER ARZNEIVERORDNUNGEN. Mit Einschluss der physikalisch-diätetischen Therapie. Für Studierende und Aerzte. Nach der 4. Ausgabe des Arzneibuches für das Deutsche Reich zusammen gestellt von Dr. med. PAUL RECKZEH. Mit einem Vorwort von Prof. Dr. FR. KRAUS. Berlin: Verlag von S. Karger, 1906.

COLLECTIONS of prescriptions usually find a large and enthusiastic circle of readers, and as the present one is made in Germany we presume it will be doubly popular. It purports to reproduce the combinations of drugs most in use in the more important clinics of the Fatherland, principally those of Berlin, and seems to be well stored with therapeutic suggestions. The arrangement is not unduly impractical, and we commend the volume to those desirous of imparting a Teutonic flavor to their medication.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Two Hundred and First Regular Meeting, Held February 9, 1906.

Dr. Joseph D. Bryant, President *pro tem.*

A Case of Dilatation of the Esophagus.—Dr. E. G. Janeway presented a patient, a man 51 years old, who was referred to him in January, 1904, by Dr. Jefferson Scales, of Staten Island. The only point of hereditary interest was the death of his father, from gout, at the age of 35. The patient had always abstained from tobacco and alcohol, and had no venereal disease. There was no history of any accident. He had a severe attack of pleurisy when he was seven years old, and typhoid fever fourteen years later. In June, 1896, he had an attack of so-called bronchopneumonia, with slight pleurisy, which lasted three weeks.

Twenty-two years ago he began to have some difficulty in swallowing the early part of a meal. If he started the meal with a glass of water, then the rest could be easily taken. In the early morning he would regurgitate through the nose a little of his dinner of the previous night, and, at times, in blowing his nose, some food would come away with the mucus. He also had slight cough or choking. The difficulty in swallowing seemed to him to be just below the root of the neck. This went on for about twelve years, and then gradually ceased. He was supposed to have had a spasmodic stricture of the esophagus, which he had learned to control.

In May, 1900, just after getting into bed, his wife pushed him, and he spat and coughed up a mouthful of blood. This was followed by some cough, although he stated that he had coughed somewhat since his attack of pneumonia in 1896. In May, 1901, he had a slight cold, and while on his way home from business he again had a hemoptysis, bringing up about a wineglassful of blood, mixed with food. This was repeated the following June. He then went to the mountains, and there, after a walk up-hill, he again raised blood. Almost every night he coughed and raised mucus containing particles of food. His next hemorrhage occurred in November, 1901, and from that time until the following May it recurred about once every month or six weeks. The following August, while again in the mountains, he spat up small quantities of blood on several occasions for a period of three days. At that time the lungs and sputum were examined, and both were found negative. A physician who saw him then thought the bleeding came from the pharynx, and kept him in bed for a week, giving ergot and local treatment.

His next hemorrhage occurred in December, 1902, and a repetition in February, 1903. Then he went to Pinehurst, N. C., for three weeks, where he had another hemoptysis. An examination of the chest and sputum was again negative. In October, and again in November, 1903, the bleeding recurred. The following December, after mounting a flight of stairs, he raised fully a wineglassful of blood, which contained considerable food. When these hemorrhages occurred, he felt a lump rising in the chest as when one belches gas, followed by tickling and cough, and then the blood appeared. Then he vomited some food mixed with blood, the former not thoroughly digested. The blood was always bright, until he had taken adrenalin. One day he bled from the nose, discharging a clot followed by quite free bleeding. This was followed by slight spitting of blood on several occasions.

In addition to the regurgitation and the bleeding, the patient had had four or five attacks of intense pain of a burning character, spreading across the upper chest. These attacks had all come on about three or four o'clock in the morning, at times when he had vomited the previous evening, and had, as he called it, "an empty stomach." This was always relieved by hot malted milk or hot water. None of these attacks had followed exertion. The last one occurred a year ago. In spite of his symptoms, the patient had gained twelve pounds in weight. He had been examined by two competent physicians, one of whom, in August, 1902, thought he detected trouble at the base of the left lung, and the other, eight months previously, at the apex of the same lung. In August, 1902, his throat had been examined, with negative results.

When Dr. Janeway first saw the patient, on January 4, 1904, he could prove nothing wrong with the lungs. The patient informed him that if he should eat a hurried meal at night he would regurgitate considerable food between two and four o'clock the following morning. The blood which he raised was always mixed with some food after the first mouthful. He was well nourished. An examination of the abdomen was negative. The blood pressure was somewhat increased. Two days later he came with a test breakfast (Ewald). On attempting to pass the stomach tube, large amounts of acid malted milk taken the night before were brought up alongside the tube as soon as the latter entered the pharynx. After several such attempts, the tube passed its full length, and more fluid contents were obtained. Neither the thick milk nor the thin contents showed free hydrochloric acid or albumose. Such sputum as he brought was tenacious mucopus, and was free from tubercle bacilli.

On January 11, another attempt to get a test breakfast resulted the same as the previous one. A large quantity of fermented material was brought up from the esophagus. A second sputum examination was negative as regarded bacilli of tubercle, though there was some blood in it. On January 14 he was again examined, having taken no food for twenty-six hours, until he took a breakfast of grapefruit with sherry, mush with milk, bread and butter, and beefsteak. On passing the tube, about 300 c.c. of fermenting, mushy material was brought up alongside the tube, smelling strongly of acetic acid. By passing the tube several times, and pouring down water each time, the esophagus was fairly well cleansed. The tube, at a distance of 44 cm. (17½ inches) from the teeth, met with an apparent obstruction, and was rather firmly held on an attempt to withdraw it. The removed contents showed no free hydrochloric acid; no proteid digestion; no starch left in solution. Ether extract left much fatty residue, and gave a strong lactic acid reaction. The odor showed acetic and butyric acids. The patient was then placed on rectal feeding for five days to allow the esophagus to rest. For a few days he was allowed barley water and albumen water by mouth. After this he had absolutely no cough nor regurgitation for the first time in years. Notwithstanding the rectal alimentation, he had lost ten pounds in weight. Passing of the stomach tube brought up from the esophagus about 200 c.c. of opalescent, mucilaginous fluid, not quite sweet smelling, but not containing acid of any kind. On this occasion, repeated attempts to pass the tube into the stomach failed, owing to its turning on itself at a distance of 17 inches from the teeth. After taking about twelve ounces of water, there was an eructation of gas, and the water could be heard to enter the stomach. After this he was allowed some food by the mouth. Rectal feeding was continued, and he regained some of his lost weight. He was instructed to wash out his esophagus and on one occasion this procedure produced a slight hemorrhage, followed by some clots and bloody mucus. On February 10 he took one pint of oatmeal gruel, and subsequently the tube brought up 300 c.c. of the gruel, barely acid to litmus. A No. 18 tube was then substituted for the No. 20; it was grasped for a time, but, after waiting, the spasm apparently passed off and the tube entered the stomach, bringing up about 50 c.c. of contents. The distance from the teeth to the eye of the tube was 23 inches. The total acidity of the stomach contents was 46; free hydrochloric acid, .0736=20. Proteid digestion good. After this the patient was put on liquid food and his esophagus was washed out daily, as it had been proven

that the case was one of dilated esophagus, with spasm of the cardia. A subsequent test of the capacity of the esophagus showed it to be twenty ounces. When the esophagus was filled with fluid, percussion showed an area of dullness to the right of the spine, which disappeared when the fluid was withdrawn and air was substituted. An attempt was made to obtain succussion sounds in the esophagus by having the patient drink some water, and then blow in air, and shake himself, but the result was negative. Since May, 1904, the patient had returned to a general diet, eating anything he felt inclined excepting tough meat. This had produced a recurrence of the hemorrhages, and he had now gone back to a more prudent diet and the proper care of the esophagus.

In connection with this case, Dr. Janeway showed an excellent radiograph of the esophagus, which was taken by Mr. Caldwell while the esophagus was filled with a pint of thick bismuth subcarbonate in suspension. This gave a beautiful representation of the dilated esophagus, with its shadow reaching that of the diaphragm.

Dr. F. P. Kinnicutt said the condition described by Dr. Janeway was generally supposed to be due to a spasmodic constriction of the cardiac orifice of the stomach, with resulting dilatation of the esophagus above the point of constriction. There was also, usually, elongation of the esophagus, and in one case that came under his observation, in which the condition had been recognized as one of cardiospasm twenty years before the case came to autopsy, the esophagus was elongated by about one-half its normal length. Its length was 18¾ inches, the normal length being about 9 inches.

Two Cases of Carcinoma of the Tongue.—Dr. Robert Abbe showed two cases of extensive carcinoma of the tongue which he had just begun to treat with radium. He showed the patients at this early stage so that the members might follow the course and effect of the radium treatment.

In reply to a question, Dr. Abbe said that so far as he knew, there was no case on record in which a recurrence had taken place elsewhere in the body after the radium treatment. Microscopical examination has been made in each of the tongue cases, and, clinically, the diagnosis was beyond question. One of the cases had been referred to him by Dr. William T. Bull, who regarded it as carcinoma, and an unpromising case for operation. Both had begun to show striking improvement, and would be exhibited again.

A Case of Round-Celled Sarcoma of the Eyelid.—Dr. Abbe presented this patient, who had already been shown at one of the previous meetings of the Society. The case was one of round-celled sarcoma of the right lower eyelid, extensively involving the inner and outer sides of the lid and its mucocutaneous border. Under the influence of radium, the tumor had entirely disappeared, leaving an apparently normal condition of the tissues of the lid. Ten months had elapsed since the disappearance of the growth, and there were no signs of a recurrence. The case was especially shown to direct attention to the fact that whereas all semblance of two-thirds of the lid had been lost in the year's growth of tumor, there was left a sharp and normal edge to the eyelid after the retrograde disappearance of the tumor.

Dr. Janeway mentioned a case of sarcoma of the jaw in a woman 84 years old. The patient had been referred to Dr. Abbe, and the lesion had entirely disappeared under the use of radium.

Dr. Abbe said that in the case referred to by Dr. Janeway, one year had elapsed since the treatment was discontinued, and he had recently heard from the patient's son that there were no signs of a recurrence. In that case, the sarcomatous growth had produced a spontaneous fracture of the lower jaw. The bone had reunited.

The Boundary Line Between Medicine and Surgery.—Dr. Edward G. Janeway read this paper (See page 409).

Dr. Henry F. Walker said that nowadays, when even serious operations were performed with comparatively little danger, it was the physician who ofttimes had to be conservative. Many patients had an idea that they could obtain immediate and complete relief by surgery, and frequently needed to be restrained, rather than urged in that respect. This change of public opinion in regard to surgery had taken place in comparatively recent years. Personally, Dr. Walker said, he was always willing to have the surgeon take charge of a case in which there was a possibility of surgery giving immediate relief, and he has always inclined to advocate prompt surgical interference rather than await doubtful improvement by medicine.

Dr. William M. Polk said that in contradistinction to the class of women who objected to having children, and who sought the gynecologist in order to get rid of what they called the onus of child-bearing, there was another type that was more difficult to deal with, namely, the sterile class who really desired children, in whom every possible minor or extraneous factor for the sterility had been corrected or eliminated, and where a grave surgical operation was the only remaining recourse to remedy the condition. Such an operation, directed to the very root of the difficulty, was not as a rule eagerly accepted by the patient, as it involved a laparotomy and a direct examination of the pelvic organs. While the operation was a serious one, the danger of it was comparatively small, and Dr. Polk said that as the result of his investigation and experience he felt justified in doing it if the patient chose to accept the risk.

Dr. L. Bolton Bangs said that while at times no doubt in common with other surgeons he had been placed in a false position by the poor judgment or the lack of judgment on the part of the medical consultant, he always felt willing to defer to the opinion of the wise, careful, thorough diagnostician that an operation should not be done, no matter what the ultimate outcome of the case might be. He recalled a case of renal calculus in which he had strongly advised operation. Before submitting to it, the patient said he desired a medical opinion, and accordingly was sent to Dr. Janeway, who examined him, and the following morning he passed three renal calculi spontaneously, which rendered an operation unnecessary. The speaker said he could cite other cases, however, in which valuable time was lost by what he considered a lack of judgment on the part of the medical men.

Dr. Lewis A. Conner said he was interested in the statement made by Dr. Janeway in regard to the doubtful advisability of making a gastric fistula in dealing with a cancerous stricture of the esophagus. The speaker said he had always been inclined to advise such a procedure, although he had never been able to follow his cases long enough to know the ultimate result, or how satisfactory or unsatisfactory such a fistula was.

Dr. Kinnicutt, in reply to Dr. Conner, said he presumed that Dr. Janeway's remarks did not refer to benign strictures of the esophagus. He recalled one such case where a gastric fistula was established, and for fifteen years afterwards the patient lived an active, useful life, and was comparatively comfortable. In cases where an artificial anus was established for the relief of intestinal obstruction of a malignant character, the speaker said he had seen life prolonged for a year or eighteen months, but such patients frequently complained bitterly that they had not been allowed to die without operation. There was one class of cases in which it was often extremely difficult for the medical adviser to reach a decision, namely, cases of obstructive jaundice, where the question arose whether an operation should be done early, or whether the patient should be given the possible chance that the obstruction would be relieved without operation. The speaker said his personal experience with this class of cases had been similar to that of Dr. Janeway, which was, that if an operation was necessary, it had better be done early than

late. In late operations, with deep jaundice, fatal secondary hemorrhage was to be feared.

Dr. Charles L. Dana said there were certain men and women, the so-called neurotic persons, upon whom the effect of even a comparatively trivial operation was often a very serious matter. There were a large number of persons, particularly young people, who were always ripe for the development of a psychosis, and an operation sometimes appeared to be the determining factor. The speaker said he could recall many cases in which an operation had produced an obsession, or neurasthenia, or hypochondriasis, and this had led him to the view that before an operation on a person of this temperament was advised or undertaken, the family and personal history should be very carefully gone into. To illustrate his remarks, Dr. Dana cited the case of a young woman who suffered from prolonged, severe neuralgic pains on the left side of the body. A prolapsed kidney was discovered, and, after a great deal of consultation and treatment, the kidney was anchored and the neuralgia disappeared. Subsequently, the patient developed intense neuralgic pains along the course of the trigeminal nerve, which were also relieved by an operation. Several months later, she developed severe ovarian neuralgia, for the relief of which the ovary was finally removed. After that, the neuralgic pains returned over the site of the original kidney, and so it went on, the patient having become, more or less, the victim of an obsession of the neuralgic habit. Dr. Dana said that many people who had neuralgias or stomach disorders, and who were of this neurotic temperament, were often made worse by either medical or surgical treatment. In regard to operations on the central nervous system for organic trouble, Dr. Dana said he believed they should be done oftener than at present. Upon such cases, especially in the line of cranial surgery, he did not think the surgeons operated often enough or well enough. In spinal surgery, the results were much more satisfactory.

Dr. Abbe said that Dr. Janeway's paper was along conservative lines, and personally he thought the most conservative person was the surgeon himself, partly from timidity, largely for the good of his patient. At times, when a new hope was roused in regard to a certain operation, it was doubtless rashly undertaken. As an example of this, the speaker mentioned the fixation of a movable kidney, which operation in the majority of cases he thought should be relegated to the past. It had been demonstrated that mobility of the kidney was very commonly met with in women who were in perfect health. In regard to the proper time for operating in gallstone obstruction, Dr. Abbe said there are legitimate grounds for delay in most cases, and cited a case where the patient was kept in the medical wards of the hospital many days until her temperature reached 105° F., and the outlook appeared to be pretty hopeless. Then the conservative physician became alarmed and transferred her to the surgeon. It was decided to operate on the following morning. That night the patient passed 134 gallstones and recovered without operation. Nevertheless, where septic or gangrenous cholecystitis is suspected, immediate operation will save most cases.

Dr. Virgil P. Gibney said that in orthopedic surgery the choice lay between conservative, or mechanical treatment, and operation, and one particular class of cases he had in mind was that of extensive tuberculous disease of the knee-joint in children. The advice often given by the attending physician in these cases was not to permit an operation, and, acting upon that advice, many cases were allowed to drift along to a hopeless stage, with prolonged suppuration, accompanied by a low specific gravity of the urine, hyaline casts, beginning enlargement of the liver; and finally these patients became waterlogged, and their end was a pitiable one. The speaker said he had seen many of these patients die in just that way, while on the other hand he had seen rapid recovery follow prompt amputation of the affected limb. It was often impossible to obtain permission to sacrifice the limb in these cases, even when the children begged for the operation, the parents refusing on the ground that they would rather see their child buried than operated on. The same was true of advanced disease of the hip-joint. The tendency now in dealing with these cases was to localize the foci of the disease, which could be quite readily done by means of the *x*-ray, and then, by operating early, the joint could frequently be saved. Even if all the foci were not removed, such an early, conservative operation might prevent the extension of the disease by contiguity, and offered a good prospect of not only curing these patients, but of leaving them without any deformity, and restoring the function of the joint.

Dr. Charles Stedman Bull said he could emphasize from an ophthalmological standpoint the remarks made by Dr. Dana, as many neurotics were inclined to locate their imaginary ills in the eye. This fact had led to the indiscriminate cutting of the ocular muscles for the relief of many functional nervous disturbances and even of more serious neuroses, such as chorea and epilepsy. This practice, which often verged upon the criminal, had, fortunately, become less frequent than formerly.

Dr. Beverley Robinson said he was not strongly in favor of an early operation in cases of so-called obstructive jaundice, in spite of the reason that had been advanced that the patient might die of hemorrhage if the operation was too long delayed. In a case that had been operated on at St. Luke's Hospital within the past year, the patient died, and at the autopsy the case proved to be neither one of carcinoma, as had been suspected, nor of obstructive jaundice. It was found to be a case of cirrhosis of the liver with a certain degree of chronic contraction of the common bile duct, so in that instance the jaundice was the result of a condition that could not have been relieved by surgery. In another case, seen more recently, the patient was a very old gentleman, whose symptoms were believed by the consulting physician to b due to obstructive jaundice, or possibly to malignant involvement of the duct. The patient died without operation, and at the post-mortem gallstones were found, but so situated in the ducts that they could not have been removed. Moreover, even if there had been a successful operation for gallstones, other anatomical conditions present would have caused a fatal ending. Dr. Robinson said that one point that had not been touched upon was whether the detection of pus anywhere in the body was always a signal for its removal. From a surgical standpoint, pus ought to be let out; from a medical standpoint, a certain amount of pus could be taken care of by the system without great risk to the patient. Another point was whether it was safe to employ massage to dissipate small collections of pus; some claimed that such treatment was attended by great risk; others claimed it was not. Another point was, whether it was better to apply heat or cold in local inflammatory conditions. With patients in whom the gouty dyscrasia was clearly defined, hot applications, in his experience, were preferable.

Dr. Joseph D. Bryant said that in the discussion of Dr. Janeway's paper, the consensus of opinion seemed to indicate that the physician and the surgeon should work hand in hand. He knew of no more embarrassing situation for the surgeon than to be hastily summoned out of town or elsewhere, and told to come prepared to operate, and to find, on his arrival, that an operation did not seem imperative, and could only be done, perhaps, at the risk of damaging the prospects of the patient. In postponing the operation in such a case, the surgeon would not only run the risk of displeasing the attending physician and possibly prejudicing the friends against him, but he would also have to shoulder the entire blame if operation were deferred and anything went wrong. While the physician is, and should be, the better diagnostician in the majority of instances, he most respectfully objected to the surgeon being

the executive agent of the physician and being expected to operate because the physician desired it, as the surgeon is better able to estimate the results of operative interference for obvious reasons than is the physician.

Dr. Janeway, in closing, said that in the case of benign stricture of the esophagus, referred to by Dr. Kinnicutt, he had raised no objection to the formation of a gastric fistula, by which means the patient had lived for fifteen years in comparative comfort. Prior to his death he had developed symptoms of bowel obstruction, with regurgitation of food through the gastric fistula, and finally convulsions, from which he died. The autopsy showed an ulcer of the esophagus, about an inch above the cardiac orifice, which had healed, leaving a very tight stricture. The bowel obstruction was traced to a polypoid growth in the jejunum, with resulting intussusception.

Plastic Operation on the Nose.—Dr. Robert Abbe showed two casts, taken before and after, of a case where he had operated to improve the contour of the nose. The patient was a gentleman who, as the result of a carriage injury, had had the bridge of his nose jammed in, producing an unsightly, flat, saddle-back nose. The operation consisted of taking a piece of pink vulcanite, such as dentists used in making plates, and filing out a thin plate of it to exactly fit the defect on the plaster cast and create a shapely nose. After sterilizing in carbolic acid, alcohol, and salt solution, this was then inserted underneath the skin through a lateral incision. The operation was done seven years ago, and the vulcanite has remained unchanged and the scar practically invisible. The contour of the nose was still so perfectly like a normal structure that it could be considered a triumph of plastic work.

The Penetrating Power of Radium.—Dr. Abbe, in order to illustrate the penetrative power of radium, showed a photographic plate upon which a revolver had been photographed by a single grain of radium. The rays had penetrated the steel, so that the cartridge with which the revolver was loaded and the internal mechanism of the lock were clearly seen in the photograph.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held February 26, 1906.

Dr. Floyd M. Crandall in the Chair.

Committee on Centennial Celebration.—The following subcommittees were announced: Dr. E. D. Fisher, *Chairman;* Dr. C. H. Richardson, *Treasurer. Committee on Arrangements:* Drs. Walter L. Carr, Henry S. Stearns, and J. S. Thatcher. *Committee on Speakers:* Drs. Joseph D. Bryant, A. Jacobi, and Parker Syms. *Committee on Printing:* Drs. John Van Doren Young, Charles N. Dowd, and Wendell C. Phillips. Other members of the committee were Drs. Jos. Brettauer, N. E. Brill, Charles L. Dana, Arpad G. Gerster, Alexander Lambert, Wm. M. Polk, and Richard Van Santvoord. This celebration is to be held April 4, 1906, at the Hotel Astor.

The Question of Economy in the Medical Supplies of Hospitals.—Dr. John Winters Brannan, president of Bellevue and Allied Hospitals, said that all admitted that there had been waste which seemed an almost unavoidable result of our system of hospital administration. It did not seem to him necessary to make such radical changes as suggested by Dr. Gerster in his address before the New York Academy of Medicine, November 2, 1905 (see Medical Record, December 2, 1905, page 885), having it conform to that of Germany, where the executive control and management of the hospitals were in the hands of paid medical men, who also directed the treatment of patients. Now that attention had been called to the waste in the hospitals, and its causes had been studied and analyzed, steps had been taken that promised soon to put our institutions upon a business basis. He said no method could be effective without the cordial cooperation on the part of the superintendent of the hospital, the superintendent of the training school, the visiting physicians and surgeons. In the hospitals with which he was connected the surgeons were most ready to adopt and enforce all reasonable measures to lessen waste. He presented a set of rules which specified how the surgical dressings and appliances might be used and how they must not be used by the house staff and nurses. These were posted in the operating rooms and surgical wards, and no doubt had contributed largely to the saving. At Bellevue a large reduction in the use of surgical supplies took place when the distribution to the wards was placed in the hands of the superintendent of nurses. Since endeavoring to eliminate this waste he said that in the latter half of 1905, as compared with the same period of 1904, there was a saving of 124,000 yards of dressing gauze, or 56 per cent. In bandage gauze, absorbent cotton, rubber adhesive plaster, or other surgical utensils, the results were approximately the same, and represented a saving of about $10,000 a year. The operating service was at least as heavy last year as in the year previous, and the surgeons attested that they had all the supplies they needed. On the medical side the opportunity for waste was not so great, but considerable saving had been effected by requiring that alcohol and whiskey, new and expensive drugs, should be ordered only by members of the visiting staff, and in small quantities at a time.

The Convalescent Branch Hospital and Its Relation to Hospital Reform.—Dr. S. S. Goldwater, superintendent Mt. Sinai Hospital, said that at a recent annual convention of the Association of Hospital Superintendents he urged the importance of splitting into two parts all construction funds for general hospitals, one part to be devoted to the building of a main hospital for acute cases, and the other to be applied to the erection of a distinctive branch hospital for cases no longer acute. This plan was advocated as a means of obtaining the greatest possible return for each unit of capital and labor expended for hospital purposes. He referred to the popular error of exploiting certain relatively small economies in one or another branch of expenditure, savings which, even if consummated, would leave untouched the general situation of the hospitals and the whole machinery of the community for dealing with its sick poor. He asked, for example, why in a growing community like ours was not more attention given to the *timely* reservation of hospital sites, a reform which in a decade would result in a saving of perhaps a million dollars. Why did they not decide upon the type of building which, under the conditions existing in a great city, could be most economically administered; or upon the proper size, for administrative purposes, of a hospital of any accepted type; or upon the most advantageous method or system of grouping patients in separate establishments? The study of these questions would tend to develop and to crystallize hospital policy. Unfortunately they had not been studied with sufficient care, and grievous economic blunders continued to be committed in hospital affairs. The proposition to cut off the convalescent group from every general hospital, and to house and treat them separately, was advocated mainly upon economic grounds. If the division or subdivision of patients into acute and convalescent groups were entirely consistent with therapeutic ends, the sooner the subdivision was effected, the better. He considered in turn, first, the meaning of the proposed plan from the standpoint of hospital construction; second, its effect on maintenance charges; third, its value to the patient; and, fourth, its social significance.

The Relation of the Visiting and House Staff to the Care of Hospital Patients.—Dr. W. Gilman Thompson called attention to Dr. Gerster's suggestions and urged that hospitals should employ paid medical officers, thereby commanding more of their time, and promoting economy of administration. This proposition led to the question whether continuous service on the part of the visiting staff did or did not especially benefit the patient. Classified

upon a service basis he said there were three distinct groups of public hospitals: (1) those to which any reputable physician could send patients, and personally treat them there for any period of time; (2) hospitals in which a comparatively small paid permanent visiting staff enjoyed an absolute monopoly; (3) hospitals managed upon intermediate system, with a large visiting staff and reasonable rotation of service, which was at present the prevailing type. It had never been clearly demonstrated that the results of treatment in any one of these groups were any better than in the others. It was the men employed, rather than the system which made for success or failure. It might be possible to allot a permanent service to one who soon reached his limitations of development and kept both house staff and nurses within the confines of his own narrow-mindedness. Arbitrary age limits might also aid to remedy this condition. The general standard of medical education and training had been elevated and the field of knowledge had become so broad that it was difficult to find a physician preeminent in the treatment of a certain condition. The question of continuous hospital service was somewhat different when viewed from the surgical standpoint than it was when viewed from the medical. The surgeon had his individual methods of antisepsis and operation. The frequent change of such a service would be to transfer to one's successor a number of cases, the real nature of which he could necessarily know but little. In a medical service an occasional change might prove an advantage. Again, a hospital was a great educational factor, educating its nurses, its internes, its special students, and its visiting staff to serve the community at large. In-so-far as it could increase the number of this class, its influence for good would extend. If under the charge of one man it deliberately restricted its sphere of usefulness without adequate gain to the patient. The question of economics belonged to the paid superintendent and should be met by securing greater efficiency, if need be, in that department. Proper cooperation of the visiting staff in maintaining economy was most essential. The physician's time belonged to his science and should not be frittered away with purely administrative details. Two factors that tend to interfere with the close study and watchful care which the members of the house staff owed to the patients were the so-called clinical laboratory and the over-trained nurse. While recognizing the importance of the laboratory as an aid to diagnosis, he thought that in just as far as the laboratory led the house staff away from bedside methods of close observation it worked an injustice to the patient. It was sometimes a mistake to delay treatment until positive findings were reported from the laboratory. Some hospitals had devised a system by which entering young men served in part as assistants in the strictly pathological work of the hospital and in part relieved the house staff of clinical laboratory work. This system had certain advantages. Many of the clinical laboratory tests should be made by the trained expert rather than the young interne. Too much routine laboratory work gave the interne too little time for study or to perfect himself in physical diagnosis. Nurses were required to learn about as much physiology, anatomy, and bacteriology as a first year medical student and to spend at least one-third more time in hospital service, thus getting a power and importance never intended by the medical profession. In one hospital it was found that the internes almost never applied dry cups, passed rectal or stomach tubes, or gave hypodermics. It was right that the nurses should know how to perform these services, but not that the internes should be excluded from learning these things. Some of the inflexible rules in regard to order in the wards regardless of comfort to the patient were deplored. For instance, the engineer was ordered to keep the temperature at 70°, and the pneumonia patient, burning with fever and in need of fresh air, must suffer together with the uremic in the next bed who had a subnormal temperature and needed a sweat in a hot pack. Neatness, order, and discipline must prevail, but inflexible and unthinking routine should not be allowed to deprive the suffering of reasonable individual comfort. It was in these matters that the relations of the house staff and the nurses to the patients was lamentably deficient and there was danger lest the emphasis given to the science of diagnosis should more and more obscure their training in the humanitarian side of their calling.

The Need for Accuracy and Uniformity in the Reports of Hospitals.—Prof. Frederick A. Cleveland, School of Commerce, read this paper. He said that applying to the problem of administration the nomenclature of medical science one might regard the hospital as having its own habitat, its anatomy, its physiology, and its pathology. Anatomically the hospital was a form of corporate body that through centuries of adaptation had evolved attributes as common in kind as humanity itself, as uniform as the functions of the human body whose physical sufferings the hospital was designed to relieve. The functions common to all hospitals were general administration, professional service, ward service, dietary service, provisioning, housekeeping, laundering, and the general care and maintenance of buildings and hospital equipment. As a medical science could not be developed by the study of the anatomy, physiology, and pathology of a single individual, so administrative knowledge would be small if limited to inquiry with respect to a single institution. Hospital organization and administration had come to be cialized science, the making of which was dependent upon the combined intelligence and experience of all those engaged in this branch of business activity before one could a prominent subject for inquiry, and must become a speestimate such a basis for direction and control as would meet the requirements of men of professional training. By application to well-established standards of efficiency and normality in medical and surgical practice, the superintendent, for example, discovered a symptom of institutional disease in the alcohol bill. Inquiry as to this located the cause in the use of 96 per cent. alcohol for rubbing backs. Another symptom of economic weakness was found in the gauze supply. Administrative diagnosis discovered that the surgeons and physicians were careful, but that antiseptic gauze was being used by the nurses in cases or at times when unsterilized muslin bandages or towels would serve as well. The expense of supplying food seemed abnormal, and this might be traced to a lack of responsibility for supplies, permitting many petty thievery by servants, to the wasteful use of food stuffs, to the serving of high-priced victuals to the house servants, to the purchase of provisions out of season when seasonable ones could have given the same dietetic value, to one or more of a hundred causes. Above all, he said, the administration of an individual hospital depended on the system of control through the accounts. In this hospitals were wofully defective. Like the life insurance company and other trustee institutions, they had failed to appreciate the meaning of administrative control, and the duty of hospital boards to introduce such systems of account which would give it. By way of assembling and transmitting the method and means of collecting and classifying these data around problems of administration a central bureau of hospital research could do much to raise the standard of efficiency. Such an agency would prove especially effective in establishing a form or basis for reporting which could give to the public and to benefactors an intelligent form of hospital trusteeship.

William H. Allen, Esq., Secretary of the Committee on Hospital Needs, opened the discussion. As Secretary of the Committee on Hospital Needs he had been privileged to follow several such discussions as Prof. Cleveland had given. A committee had been appointed after a conference last March, when fifty or sixty hospitals were represented, this meeting having been called because of the press campaign, criticising the hospitals for their lack of proper hospital management. The main objects that

this committee had in view were two in number, first, hospital economy, and, secondly, hospital support. The second object was to him of particular interest. There was no question but that the public was more interested in hospital management than in schools; yet the schools were given $30,000,000 a year, while in the hospitals there was a crying deficit each year. He said that a possible explanation was that suggested by Prof. Cleveland, that the hospital reports had not in the past given information such as the public should have, such information which, if put together in one story, he believed, would electrify the public, and not only would adequate support be forthcoming, but quick action as well. He emphasized the fact that better reports should be published by all the hospitals; they could not expect adequate support until adequate information as to what the public wished to know was furnished. Some form of report should be adopted which would place this serious matter before the public in the proper light if they wished to have intelligent constructive action. When this committee sent out their circular, recommending uniformity of reports, letters were received from all over the United States, showing a quick appreciation of the needs for hospital reform.

Dr. C. Irving Fisher, Superintendent Presbyterian Hospital, after speaking of the manner in which hospital reports were made up, told of the work being done by the Hospital Superintendents' Association of the United States and Canada; in this association the question of bringing about uniformity in hospital reports had been considered at several meetings. At the last meeting in September a scheme had been presented by which reports might be gotten up with uniformity, and a consideration of this, he said, would be continued next year. This winter four hospitals had been brought together in a way that something had been accomplished. Within ten days there had been two meetings of the trustees and superintendents of New York, Roosevelt, Presbyterian, and St. Luke's hospitals, and a practical outline had been agreed upon and was now being printed, which, he hoped, would be adopted. These hospitals, in their next annual reports, would present statistics in a uniform manner.

Dr. Gerster said that his object in bringing this matter before the public was not so much to advocate this or that plan of reform and retrenchment as to excite an interest and discussion of hospital management. He had no plan to advocate, but he did want to excite a general interest and a desire to get at the bottom of the question and investigate why the hospitals were laboring under such tremendous deficits. The public was more interested in hospitals than it was in the schools, yet not enough money could be raised to run the hospitals. It seemed quite paradoxical that public interest should be so well shown in the giving of large moneys to schools, and so little to hospitals, when it was far more interested in the latter. Hospitals were for the purpose of not only curing patients, but also for the purpose of teaching how to cure those not in the hospitals, and he recalled the time when hospitals refused to admit to the wards medical students. One of the most important functions of hospitals was education of medical men. Reform could not be brought about unless the defects were recognized; when discovered, he advised striking at them and without fear. Look for the causes of the existence of these defects, and then he advised against shirking disagreeable facts. He emphasized the importance of overcoming the so often seen lack of intensity. Affairs were too often attended to in an easy and haphazard way. Dr. Gerster said he was astonished at hearing advocated rotation of medical service in hospitals; such was always attended with great dissatisfaction. There was a general lack of intensity in both services. Continuity and intensity of work were productive of the best results.

Dr. Goldwater said that a chair of Hospital Administration in medical schools was highly desirable.

Prof. Cleveland said that the establishment of such a chair in schools for medical training was a suggestion he had in mind. It was for the medical fraternity to devise means of getting together hospital cases which would make a bureau of hospital research possible.

Dr. Brannan and Dr. Thompson closed the discussion.

JOINT MEETING OF THE CHICAGO UROLOGICAL AND CHICAGO MEDICAL SOCIETIES.

At this meeting, held January 24, 1906, Dr. Henry G. Anthony read a paper on "Syphilis of the Male Genitourinary Tract." He spoke of the discovery of the *Spirochæta pallida* as the probable cause of syphilis. Syphilis, he said, was a great imitator of other diseases, and when it affected the genitourinary organs, it might closely simulate any of the other diseases which invaded these organs. Physicians were entirely too prone to depend exclusively on the presence of induration in the diagnosis of chancre. They did not consider sufficiently other points, such as outline, color, smoothness of the base, varnished appearance, etc. For years it had been recognized that it was at times impossible to differentiate between chancre and chancroid. The diagnosis of chancre from epithelioma of the penis was at times difficult. Cases had been observed of patients with lesions of the penis which had been diagnosed epithelioma, the penis amputated, and shortly afterwards the secondary eruption had appeared. When lichen planus occurred on the integument of the genitals, it was apt to assume a circinate form, in which case it was almost certain to be mistaken for syphilis by the general practitioner. Syphilis of the testicle in infancy frequently terminated in atrophy. There were two forms of syphilis of the testicle in adult life—sclerosis and gumma. In gumma of the testicle one or both organs might be affected; there might be a single gumma present or a number. Traumatism might be the exciting cause. In one of the author's cases the patient fell downstairs and struck his testicle against the newel post. As to syphilis of the epididymis, in the early months of infection six or eight nodules might suddenly develop in the upper head of each side. Later in the disease it might assume the form of a simple inflammation with deposits of plastic material, and disappear under treatment, leaving fibrous tissue. Cases of gumma of the cord have been reported by Campbell, Goldenberg, Verneuil, and others. The author discussed scleroderma of the meatus, papular syphilide of the meatus, gumma of the prepuce, cylindroid of the uretha, syphilis of the ureter, syphilis of the kidney, and syphilis hereditaria tarda.

Dr. Alexander Hugh Ferguson followed with a paper on "Tuberculosis of the Male Genital Tract." He discussed tuberculosis of the male urethra, prostate gland, seminal vesicles, vas deferens, epididymis, and testicles. In over one hundred cases of prostatectomy he had observed tuberculous foci in five cases where tuberculosis was not diagnosed before operation, and only suspected in the last two on account of their clinical history. He performed a prostatectomy on three cases suffering from tuberculosis of the prostate in what he judged to be an early stage of the disease. Two died of general tuberculosis within a year; the other lived a year and a half; then died of a bilateral kidney tuberculosis.

Dr. Arthur Dean Bevan said there were three common foci of so-called primary tuberculosis of the genitourinary organs. The term primary should be qualified, although the possibility of a true primary tuberculosis of these organs must be admitted in the sense that the bacilli might gain entrance to the circulation without having lodged at a point where the primary focus was developed, and were carried to the kidney or to the epididymis. Such a true primary involvement was rare. In almost all cases of tuberculosis of the genitourinary organs we had a bronchial or tracheal gland, or some lung or bone tuberculosis which was the primary focus. From this there was

entrance into the circulation of the tubercle bacilli and then their lodgment in the elbow joint, knee joint, or at one or several points, and these points were the kidney, prostate, epididymis, etc. He believed that tuberculosis of the kidney was unilateral in 90 per cent. of the cases, and in these a nephrectomy should be done.

Dr. F. Kreisel was not inclined to be so pessimistic with regard to the treatment of tuberculosis of the bladder. He thought the removal of the kidney, which was the primary focus, might effect a cure of the secondary lesion in the bladder without any other treatment. He did not think that the primary lesion in the bladder could be favorably influenced by applications of iodoform, bichloride solution, etc., so that healing would take place.

Dr. Gustav Kolischer referred to tuberculosis cystitis, and said around the uretheral opening there might be a few disseminated ulcers with undermined edges and a few gray tuberculous nodules. In such cases favorable results were obtained if the kidney which caused the descending tuberculosis, was removed. Rosen had recommended the injection of a five per cent. carbolic acid solution into such a bladder after the kidney was removed, which was followed by disappearance of the ulcers. The speaker removed the kidney of a young girl in whose bladder there were three ulcers. These healed inside of three days after the operation; but whether their healing was due to the injection of the carbolic acid or to the removal of the kidney, he did not know.

Dr. Ferguson, in support of what Dr. Bevan had said, stated that he had done nephrotomy in twelve cases, but had to remove the kidney later. He had two cases now under observation in which he thought a partial nephrectomy was indicated.

Dr. Bevan emphasized the point that tuberculosis of the kidney very frequently was primarily unilateral; and that nephrotomy and resection could not be relied on; that the weight of evidence, where an early diagnosis was made, and the existence of another healthy kidney determined, was in favor of a radical operation.

Chicago Medical Society.

At a meeting held January 31, 1906, Dr. Alfred C. Croftan read a paper entitled "An Analytical Study of Uremia," in which he presented some general considerations and conclusions in regard to its causes and treatment. In the case of the nitrogen bodies the following statements approximately summarized what had been discovered: (1) Uremia often developed without any determinable accumulation of nitrogenous bodies in the blood. (2) Uremia occasionally developed when these bodies were below normal in the blood. (3) Uremia often failed to appear in many states in which the increase of the nitrogenous constituents of the blood was very marked. In the urine similar conditions were found in regard to the nitrogenous bodies. Uremia might occur (1) when the patient was in nitrogenous equilibrium, *i.e.* when the nitrogen intake corresponded to the nitrogen output. (2) When the nitrogen output was far above normal, and (3) when the nitrogen output was below normal as compared to the nitrogen intake. A summary of the findings in regard to the salts of the blood and urine in uremia was as follows: (*a*) An increase of the salts of the blood was by no means a constant finding in uremia. (*b*) Uremia often occurred when the salt values of the blood were normal or even under normal, with corresponding conditions in the urine. (*c*) Uremia did not always occur when the salts of the blood were very markedly increased, and those of the urine correspondingly decreased. There was in fact less evidence to show that uremia was due to salt retention than to the retention of nitrogenous bodies. As to the general principles governing the treatment of uremia, the chief object of treatment should be to prevent the development of acute uremia by giving attention to those organs and functions that threaten to fail. In order to do this intelligently, the renal idea should be relegated to the background, and more attention should be bestowed in preuremic states on the liver and the general metabolism. The liver should have a rest. To stimulate the liver in chronic uremia is bad practice. The same principles should obtain here as in the treatment of a fatigued part or a fatigued stomach or a fatigued nervous system. First, rest, then graduated exercise until the normal tone was regained. Stimulation should be reserved for emergencies and as a last resort. To accomplish this end all articles should at first be eliminated from the diet that can irritate the liver or stimulate it to increased functional activity. Every effort should be made to reduce intestinal putrefaction to a minimum, for intestinal toxins as they reach the liver severely strain the disintoxicating function of the organ. No cholagogues should be administered. After a period of rest (and starvation for a few days seemed a rational plan) the liver might be gently stimulated in the hope that it might be coaxed gradually to resume its functions. This should be attempted by the carefully graded administration of salicylates, of bile acids, possibly of calomel. In addition, various dietetic and physical means might be adopted that were capable of stimulating the various functions of the liver. All this treatment should be carried on with careful supervision and daily control of the effect of these measures on the functional activities of the liver, as evidenced by the composition of the stools and the urine, and the general condition of the patient. The treatment of the acute uremic attack was always an ungrateful task, for it was immaterial whether we were dealing with a disorder that was primarily or in its ultimate consequences due to renal or hepatic or general metabolic insufficiency; in any case we were dealing with a terminal syndrome, that was due to the crumbling of the whole cellular edifice. To arrest this collapse, essentially meant to revive a dying organism. That this might occasionally be done for the time could not be denied, and as the recuperative powers of the human body bordered on the phenomenal, no effort should be spared to bring an acutely uremic patient back to life. We were dealing in uremia with a toxemia, and to eliminate some of the poisons that were present in the blood by bleeding was always indicated. Whether the injection of a saline to replace the lost fluid was useful or necessary was not yet established; it could certainly do no harm, particularly if some saline was injected that would simulate the hepatic function, *e.g.* salicylate of soda in normal salt, or a solution of sodium citrate or phosphate in appropriate molecular concentration. Symptomatically, the use of such infusions had been useful in the author's hands, and had occasionally caused the most alarming symptoms of uremic attack to disappear when other measures he thought would have failed.

Note on a Case of Osteogenesis Imperfecta (Idiopathic Osteopsathyrosis).—J. S. Fowler declares that we owe our knowledge of the condition called osteogenesis imperfecta almost entirely to studies of fetuses, most of which have been still-born, only a few having survived birth for a few hours or days. It has therefore been generally assumed that this condition is incompatible with long life. The writer believes, however, that this is not so, but that children suffering from osteogenesis imperfecta may not only survive birth but reach adult life. He relates the history of a case of this kind. The child at the time of writing was three years old. From his study of this condition the writer concludes that: Children suffering from osteogenesis imperfecta may survive; the condition is recognizable clinically by the association of brittleness of the bones and craniotabes; osteogenesis imperfecta and idiopathic fragilitas ossium are two names for the same disease. The writer thinks that the most conclusive evidence of the identity of the two diseases is afforded by Looser's recent study of the morbid anatomy of idiopathic osteopsathyrosis.—*The Edinburgh Medical Journal.*

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama.*	W. H. Sanders, Montgomery	Montgomery	April	1.
Arizona.*	Ancil Martin, Phoenix	Phoenix	April	2.
Arkansas.*	J. P. Runyan, Little Rock	Little Rock	April	10.
California.*	Chas. L. Tisdale, 530 California Street, San Francisco.	San Francisco	April	17.
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	3.
Connecticut.*	Chas. A. Tuttle, New Haven	New Haven	July	10.
Delaware	P. W. Tomlinson, Wilmington	Dover	June	19.
Dis. of Col'bia	W. C. Woodward, Washington	Washington	April	12.
Florida.*	J. D. Fernandez, Jacksonville	Gainesville	April	16.
Georgia	E. R. Anthony, Griffin	Augusta	April	3.
		Atlanta	April	5.
Idaho	J. L. Conant, Jr., Genesee	Pocatello	April	3.
Illinois	J. A. Egan, Springfield	Chicago	April	18.
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	22.
Iowa	J. F. Kennedy, Des Moines	Des Moines	March	21.
Kansas	T. E. Raines, Concordia	Topeka	May	1.
Kentucky.*	J. N. McCormack, Bowling Green	Louisville	April	24.
Louisiana	F. A La Rue, 624 Gravier St., New Orleans	New Orleans	May	3.
Maine	Wm. J. Maybury, Saco	Augusta	July	10.
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	20.
Massachusetts.*	E. B. Harvey, State House, Boston	Boston	May	8.
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	12.
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	April	3.
Mississippi	J. F. Hunter, Jackson	Jackson	May	8.
Missouri	J. A. B. Adcock, Warrensburg	St. Louis	April	10.
Montana.*	Wm. C. Riddell, Helena	Helena	April	3.
Nebraska	Geo. H. Brash, Beatrice	Lincoln	May	29.
Nevada	S. L. Lee, Carson City	Carson City	May	7.
N. Hamp're.*	Henry C. Morrison, State Library, Concord	Concord	July	6.
New Jersey	E. L. B Godfrey, Camden	Trenton	June	19.
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	4.
New York	C. P. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo,	May	22.
N. Carolina.*	Geo. W. Pressly, Charlotte	Charlotte	May	23.
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April	3.
Ohio	D. N. Kinsman, Columbus	Cincinnati Cleveland, Columbus,	June	12.
Oklahoma	J. W. Baker, Enid	Guthrie	March	28.
Oregon.*	B. E. Miller, Portland	Portland	May	10.
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia, Pittsburg,	June	—
Rhode Island	G. T. Swarts, Providence	Providence	April	5.
S. Carolina	W. M. Lester, Columbia	Columbia	June	12.
S. Dakota	H. E. McNutt, Aberdeen	Watertown	July	11.
Tennessee.*	T. J. Happel, Trenton	Memphis, Nasbville, Knoxville,	May	2.
Texas	T. T. Jackson, San Antonio	Dallas	June	12.
Utah.*	R. W Fisher, Salt Lake City	Salt Lake City,	April	2.
Vermont	W. Scott Nay, Underhill	Burlington	July	10.
Virginia	R. S. Martin, Stuart	Richmond	June	20.
Washington.*	C. W. Sharples, Seattle	Tacoma	July	3.
W. Virginia.*	H. A. Barbee, Point Pleasant	Parkersburg	April	10.
Wisconsin	J. V. Stevens, Jefferson	Madison	July	10.
Wyoming	S. B. Miller, Laramie	Cheyenne	June	6.

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Massachusetts.—From the Twelfth Annual Report of the Massachusetts Board of Registration in Medicine, we learn that at the July examinations last year the same questions were asked by the Examining Boards in Connecticut, Maine, Massachusetts, and Rhode Island. The percentage of failures in Connecticut was 14.81; in Massachusetts, 15.60; in Rhode Island, 15.15. The Maine results were not reported. It may be inferred that the standard in these States is practically the same.

Idaho.—In this State, recently, a judge reexamined and regraded the papers of a candidate who had been rejected by the State Board of Medical Examiners. This legal luminary raised the applicant's rating from 56 to 69 and set aside the subject of pathology entirely, as being "a subject that only specialists are expected to be conversant with." Students and practitioners who are shaky on pathology (or any other subject) should find this State the ideal one in which to take a State board examination.

Reciprocity Between New York and New Jersey.—The Acting Secretary of the New Jersey State Board of Medical Examiners informs us that the agreement between the two States is retroactive, in so far as it applies to licentiates of New York who have taken the examinations before the New York Board and meet the other requirements of the New Jersey Board. This ruling does not include the older practitioners who have not passed an examination before a duly constituted State Medical Board.

Colorado.—Candidates for a license to practise medicine in this State begin with an oral and a clinical examination. If this proves satisfactory the candidate is then admitted to a written examination. If the candidate fails in the oral and clinical examination, no further test is made, and he is refused a license.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 10, 1906.

	Cases	Deaths
Measles	2384	55
Diphtheria and Croup	436	62
Scarlet Fever	250	13
Smallpox	.....	.....
Chickenpox	171	.....
Tuberculosis	414	187
Typhoid Fever	17	3
Cerebrospinal Meningitis	30	25
Typhus Fever	.....	.....
Yellow Fever	.....	.....
Cholera	.....	.....
Totals	3,702	345

A Case of Typhoid Gangrene.—Bruhl reports this case. The patient was a young girl, who in the course of a siege of typhoid fever of moderate severity, developed an obliterating arteritis of the popliteal with gangrene of the leg, which necessitated amputation. The obliteration of the popliteal artery was complete, the three coats being involved. There was at the same time a thrombophlebitis. In his report, Bruhl spoke of the relative rarity of gangrene of the extremities during the course of typhoid fever, and the relative frequency of gangrene in children and in adolescents.—*Gazette des Hôpitaux Civils et Militaires.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending March 10, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	Feb. 17–24	2	..
San Francisco	Feb. 17–24	10	..
District of Columbia, Washington	Feb. 24–Mar. 3	15	..
Florida, Dade County	Feb. 17–24	5	..
Duval County	Feb. 10–24	27	..
Escambia County	Feb. 10–17	1	..
Jackson County	Feb. 10–24	15	1
Orange County	Feb. 17–24	4	..
Polk County	Feb. 10–24	11	..
Georgia, Augusta	Feb. 19–Mar. 5	9	..
Illinois, Chicago	Feb. 24–Mar. 3	1	..
Indiana, Terre Haute	Feb. 24–Mar. 3	1	..
Kansas, Leavenworth	Feb. 1–28	1	..
Kentucky, Covington	Feb. 24–Mar. 3	2	..
Louisiana, New Orleans	Feb. 24–Mar. 3	2	..
Maine, Biddeford	Feb. 24–Mar. 3	1	..
Portland	Feb. 24–Mar. 3	1	..
Maryland, Baltimore	Feb. 24–Mar. 3	2	..
Missouri, St. Louis	Feb. 24–Mar. 3	4	..
Montana, Helena	Feb. 1–28	1	..
Ohio, Canton	Feb. 17–Feb. 24	1	..
Cincinnati	Feb. 23–Mar. 2	8	..
Tennessee, Nashville	Feb. 24–Mar. 3	2	.
Utah, General	Jan. 1–31	122	..
Ogden	Jan. 1–31	6	.
	Feb. 1–28	4	..
Salt Lake City	Feb. 17–24	25	..
Virginia, Roanoke	Feb. 1–28	5	..
Washington, General	Jan. 1–31	17	..
Wisconsin, Appleton	Feb. 24–Mar. 3	2	..
Beloit	Feb. 24–Mar. 3	2	..

SMALLPOX—FOREIGN.

Brazil, Pernambuco	Jan. 15–31	..	36
Canada, Queens County	Mar. 1	2	..
St. John	Mar. 1	1	..
Toronto	Feb. 17–24	2	..
Gibraltar	Feb. 18–25	12	..
Great Britain, Bristol	Feb. 10–17	4	.
London	Feb. 10–17	2	..
India, Bombay	Jan. 11–Feb. 6	..	3
Calcutta	Jan. 20–27	..	102
Karachi	Jan. 28–Feb. 4	12	4
Madras	Jan. 27–Feb. 2	..	27
Rangoon	Jan. 20–27	..	46
Mexico, Tuxpan	Feb. 10–27	..	4
Turkey, Alexandretta	Feb. 3–10	20	2

YELLOW FEVER

Mexico, Vera Cruz	Feb. 11–17	1	..
Panama, Bocas del Tero	Feb 22	1	..

CHOLERA.

India, Calcutta	Jan. 20–27	..	44
Rangoon	Jan. 20–27	..	4

PLAGUE.

Brazil, Pernambuco	Jan. 15–31	..	1
India, General	Jan. 20–27	4514	3747
Bombay	Jan. 31–Feb. 6	..	81
Calcutta	Jan. 20–27	..	30
Karachi	Jan. 28–Feb. 4	16	14
Madras	Jan. 27–Feb. 2	..	12
Rangoon	Jan. 20–27	..	33
Japan, Formosa	Jan. 1–31	48	38
Peru, Choisica	Jan. 21–31	2	1
Lima	Jan. 21–31	3	1
Mollendo	Jan. 21–31	2	3
Trujillo	Jan. 21–31	14	5

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 12.
Whole No. 1846.

New York, March 24, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

THE MODERN TREATMENT OF FRACTURES.*

By CARL BECK, M.D.,

NEW YORK.

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It can no longer be denied that the Roentgen method has given a new clearness and a wider range to our diagnostic views, especially in the case of fractures. As a natural consequence our therapeutic means have not only become more simple, but also much more definite. The success of those who still imagine that they can do as well by their happy combination of specially developed palpatory talent with large experience (their results always being good enough for them, even if the wrist cannot be bent or the patient limps and has "only" two inches shortening) will not alter these enjoyable facts. Even these obstructionists gain daily benefit from the new practice, though indirectly and without knowing it. By means of the wonderful rays our methods of treating fractures have in fact become so perfected that with a few exceptions we may say that the plan of treatment can be outlined with almost mathematical precision. The skiagraph suggests it, so to say. The surgeon ceases to be the slave of the manifold more or less complicated splints. All he needs is a detailed diagnosis, which dictates the method of reduction as well as that of the immobilization.

"Qui bene diagnoscit, bene medebitur" applies preeminently to the treatment of fractures. A textbook on the treatment of fractures cannot contain too many diagnostic points, therefore, while the details of practical therapy can, under the new perspective, be printed on a few pages, or according to great Hippocrates, be written on our finger-nail, so to speak.

It is admitted by the best authorities now that there is an enormous number of bone injuries, the character of which could formerly not be recognized on account of the swelling of the area involved, or of the obscurity of the symptoms. Fractures were mistaken for dislocations, contusions, or distortions, and vice versa, for the reason that the main symptoms, viz., local pain and swelling, are common to all these injuries. In fissures and nondisplaced or impacted fractures crepitus and false motion are generally absent. Now the differential diagnosis may be made by a simple glance with the fluoroscope. Whether there is comminution, impaction, or intervention of tissue can be just as clearly determined as the question whether the fracture is of the intraarticular type, or is associated with dislocation or other complications.

In a number of nondisplaced fractures considerable effusion takes place, especially if they are of the intraarticular type. The clinical expression of this condition is a swelling of the fractured area, which in most cases suggests the presence of displacement. Naturally the surgeon would be tempted then to make reducing manipulations, which would be most harmful to the patient because they would cause the very thing which he would like to avoid, viz., displacement. Now, the Roentgen rays penetrate any amount of effusion and will therefore tell us precisely whether manipulations are necessary or not. In other words, if no displacement is shown, all that is required is to protect the injured limb in its normal position. This is done by proper immobilization. I personally prefer the plaster-of-Paris dressing, because it adapts itself to any shape of the body in a most admirable manner, and permits, furthermore, of continuous control by the Roentgen method, since its material offers no obstacle to the rays.

If there is more or less displacement, the fragments must be reduced to where they had been before, that is to their normal position. After exact position has been attained, proper fixation in the normal position is in order.

These doctrines are so extremely simple, that it seems almost unnecessary to repeat them. Yet they are frequently violated.

The functional impairment following non-reduced fractures, especially through the formation of adhesions, has led a number of surgeons to enunciate the dogma that the treatment of the soft tissues is the most important part of the treatment of fractures. They claim, in other words, that because the function of the soft tissues, for instance of the tendons, is impaired after an unreduced fracture, the soft tissues should have received more attention, instead of the displaced fragment having been simply reduced to where it belongs. Nothing, in fact, is more contrary to common sense than this dangerous maxim, which is partially based upon correct observation, but entirely upon incorrect interpretation. It should always be considered that the relations of the soft tissues to the bones are like those of the clinging vine to the sturdy oak.

Galen says that the bones give the human body form, erectness, and firmness. It is evident that an injury to the bones impairs these three fundamental factors. The most important step toward repair must thus be taken in the foundations rather than in the superimposed structures.

If there is displacement of the bone fragments, undue pressure must necessarily be made upon the soft tissues; non-reduction means persistence of pressure, the fatal consequences of which are well known. Reduction means the relief of pressure. If, for instance, in the frequent fracture of the carpal end of the radius the lower fragment is displaced upward, the extensors are unduly stretched, as they are upheld like the strings of a violin by the bridge. Of course, the act of the injury to the soft tissues cannot be undone by the mere cessation of pressure

*Presidential Address delivered before the Society of Medical Jurisprudence, January 8, 1906.

—that is by reduction—but the influence of the injury on the soft tissues is insignificant after early reduction, and therefore repair is easy. This means that there is hardly any more inflammatory irritation; in other words, the main premise of adhesion—formation—is wanting. Clinical observation shows that with perfect reposition the joints as well as the

Fig. 1.—Malunion in upward and lateral displacement; three months after fracture of the lower end of the radius.

sheaths of the tendons are found free, provided the immobilization has not lasted for an extraordinary length of time.

A fracture is a solution in the continuity of bone, just as a wound is a solution in the continuity of the tissues in general. The aim of modern wound treatment is union by first intention. The most important requirement for this end is, besides aseptic precautions, the thorough adaptation of the wound surfaces.

No surgeon would expect agglutination if there were displacement, diastasis, or overlapping of the wound margins. The same principle applies to the treatment of the margins of the bone fragments. It is true that manual coaptation is a little more difficult than suturing; still, under the guidance of the Roentgen rays it can be accomplished if there are no extraordinary circumstances. Before their advent it was usually the final result alone which told of the success or failure of treatment. That result was then a *fait accompli*, and the time for proper correction had passed. Now, with our Roentgen-light mentor we can tell from the very beginning what the result will be. If the "Roentgen-mirror" reflects perfect coaptation of the fragments underneath the dressing, the final result must be good. There will be hardly any reaction; no exudation will form around the agglutinating surfaces, and consequently there will be no adhesion. Even in many cases in which considerable displacement, or comminution, or both, has injured the soft tissues, little reaction follows within them, if reduction be thorough. And if reduction is impossible, the Roentgen rays tell us so precisely, giving a chance for early operative interference. They point to those fragments at the same time which are to be removed shortly after the injury. This is preferable to waiting for months, exhausting all mechanical means, and finally arriving at the conclusion that the deforming fragments had better be removed. What many of us have in former years regarded as callus was nothing but a projecting piece of bone-fragment in a displaced position. It may, perhaps, be a pardonable policy to adhere to this most euphonic term in the presence of the inquisitive and criticising patient, who has a dangerous desire to learn the cause of the gibbous joint. But a scientific forum cannot ignore this frequent failure to reduce.

The regular scar of a well-united wound must be the model of our therapeutic efforts. Direct union is to be striven for. What is termed ensheathing callus-formation means union by second intention; this is certainly undesirable as long as union *per primam* can be well accomplished. Ensheathing callus is the compensating effort of nature to overcome the unreduced deformity and to bridge over the hiatus made by irregular adaptation.

I am well aware of the fact that a slight protrusion of a diaphyseal fragment would ordinarily not disturb the function of the limb. In fact we meet with extensive diaphyseal displacements sometimes which did not interfere with the free use of the limb. The experienced surgeon must instinctively know what allowances he can make. But in fractures affecting a joint it must be emphasized that even small projections may seriously interfere with the function.

In order to accomplish exact reposition, the degree and the direction of the displacement, as it is shown by the Roentgen ray, must first be considered. It is true that an experienced surgeon will often guess right, but he will never know, except by his infallible adjunct, the Roentgen rays. The only safe method is the self-control by the Roentgen rays. It may appear to be unjust to demand of the struggling practitioner that he should supply himself with an expensive Roentgen apparatus, or if he does not care to take the trouble himself, to trust a more energetic fellow-practitioner. But after all there will hardly be any other choice. The public is cruel, and the patient's interest concentrates itself almost entirely in his own welfare, while that of his surgeon bothers him but little. He does not consider what difficulties the average practitioner has to struggle with, and how well he does, as a whole, in spite of so

Fig. 2.—Deformity in fracture illustrated by skiagraph (Fig. 1).

many adverse circumstances. All he considers is his deformity, and it is his physician, and his physician only, whom he blames without any appreciation for adverse circumstances. He does not realize that there may have been an intraarticular or comminuted fracture. His narrow horizon brings his case in contrast with the case of his neighbor who was

treated with a better result by a simple "bone-setter." Of course, his may have been a comminuted joint-fracture, while the quack's was a non-displaced simple fracture, which, in fact, healed rather in spite than because of the treatment.

In a country of such rich resources, however, it should not be difficult to secure proper means from

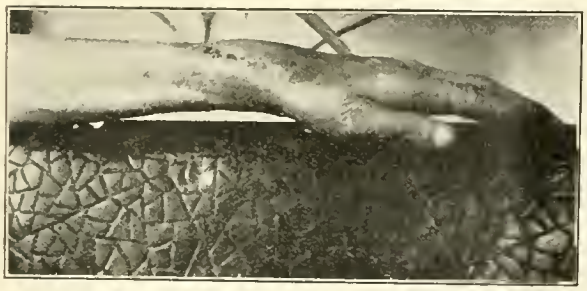

Fig. 3.—Hand illustrated in Figs. 1 and 2, after correction of the deformity by the chisel.

the government to establish Roentgen institutions, where worthy patients could be skiagraphed free of charge. Thus the practitioner could get the same reliable information he obtains from the Health Department to-day in cases of suspected infection.

If the displacement is recognized and the principles of immediate reduction are adhered to, the "gibbous wrist" will cease to be counted among the inevitable inventory of surgical clinics. Still, I am afraid this is a pious wish so long as there are surgeons who imagine that they can judge the details of any fracture without the aid of the Roentgen rays. Some are willing to use them in "obscure" cases, but they do not realize that the cases which they regard as "non-obscure" would appear in a different light when skiagraphed. In other words, what they regard to be a simple fracture often turns out to be a complicated condition. The paradox may be justified here, that if they would see this complicated condition in its proper light they would be very much surprised by it, and it would then seem obscure to them.

As said above, if there is no displacement, no effort of reposition should be made. How absurd, then, to subject the patient, as is often done, to painful procedures. In simple fissure, union may be perfect, under any or in spite of any, form of treatment. If the surgeon, led by anatomical knowledge, does practically the same as the quack does on account of his ignorance—namely, leaving the healing process to nature—the same good result may finally be obtained. The scientific treatment of fissure or non-displaced fracture, in which portions of the periosteum, still maintain slight cohesion of the fragments, viz., slight immobilization, will not alter any of its mechanism, but it will at least have the value of a greater or lesser comfort for the patient; and in cases of this kind we must be warned against scientific nihilism.

If the displacement is detected not more than two weeks after it was sustained, refracture under anesthesia is generally successful. Then the same condition is virtually produced which existed at the time of the injury and the maneuver of reposition is done after the same principles as explained above. Sometimes refracture is possible even after six weeks. But this is an exception and applies, as a rule, to diaphyses only. I present two cases in which refracture was entirely successful, although there was extreme displacement. The one case is that of a woman of fifty-eight years, whose lower radial end became agglutinated in the classical silver fork position, refracture being done without anesthesia at the edge of the table; the other is that of a boy of twelve years who sustained an epiphyseal separation of the lower end of the radius, associated with transverse fracture of the lower end of the ulna. There was considerable ulnar protrusion (outward displacement). Refracture and inward reposition were undertaken under anesthesia, also with a good result. After the proper time for bloodless refracture has passed the deformed area must be exposed by the scalpel. The old fracture line will be divided so that just as in the bloodless method the same situation is created which had prevailed at the time of the injury. The division is done by a thin and broad chisel, after the periosteum is carefully lifted all around the bone. The surrounding tissues are retracted by spoonlike retractors. The opposite surface is also protected by pushing a spoonlike instrument underneath (compare abdominal spoon, illustrated in the Medical Record, February 4, 1905). If there is no tendency to displacement the soft tissues are united and a fenestrated plaster-of-Paris dressing applied.

As an illustration Figs. 1, 2, and 3 may serve to represent the vicious union of the lower radial ends in a man of fifty-eight years, three months after the injury. Fig. 1 shows the silver fork deformity by

Fig. 4.—Periosteal Proliferation three months after a fracture of the radius.

the rays, while Fig. 2 depicts the upward and sideward displacement as it could be seen by simple inspection. After the old fracture line was divided by the chisel a slight downward pressure with my thumb sufficed to place the fragment in position. Fig. 3 indicates the normal position of the hand three weeks after the operation. It shows the in-

cision line alongside the "Tabatière", which seems to me to be the most accessible portion for this operation.

If there is great tendency to displacement, as we find it especially in such bones which are not provided with a good periosteal coat, suturing with bronze wire is indicated. This is an absolutely reliable material. As to operative details, see my previous publications "Ueber deform geheilte Frakturen und ihre Behandlung" (*Münchener medizinische Wochenschrift*), November 17, 1901, and "The Operative Treatment of Deformed Fractures as Indicated by the Roentgen Rays" (*New York Medical Journal, December 27, 1902*).

Fig. 5.—Sarcoma of the head of the humerus, originally mistaken for fracture of the shoulder.

In order to prove my statement that we are easily liable to err in our detailed diagnoses, I have asked a dozen of my patients, mostly under my treatment yet, to present themselves to you. In none of them have I been able to make a detailed diagnosis without the aid of the Roentgen method.

In a few of them I had to change the views held on the basis of my palpatory findings, in others I had to modify them. In some of the patients the method enabled me to detect conditions which threw new light upon some pathological changes. So, for instance, did it clear up some peculiar phenomena caused by the injury of the periosteum in one of the cases.

We all appreciate that one of the natural mechanical results of the solution of the continuity of bone is the more or less extensive tearing of the periosteum. We may imagine that small periosteal shreds are scattered around the area of fracture. During the process of healing these particles of periosteum begin to proliferate in the sense of an ossifying periostitis, until finally they produce the external or periosteal callus.

Small platelets of bone which have been ripped off from the cortex are found in those cases in which a great amount of force was exerted, and where a decided dislocation of the bone fragments exists. At times we find minute fragments of bone which are placed at such distance from the point of fracture that all connection between it and the bone itself seems severed. The general consensus of opinion has seemed to be that these loosened particles become impaled in the soft tissues and acquire their nutrition from them. During the past I myself have believed in this theory, but skiagraph No. 4 has shaken my belief. As I study it I must come to the conclusion that in many similar cases periosteal bands exist, but are of such flimsy construction that they are, as a rule, overlooked. They convey the nutrition to these displaced and fractured fragments. On the skiagraph, taken five weeks after the injury, may be seen, running from the upper radial fragment, a band of periosteum about five inches long. I might compare it with a sheet of bark which has been stripped from a green tree still adhering at the base. In spite of the extensive injury a loosening only, not a tearing, of the periosteum has been caused. The picture, taken by Dr. Eric C. Beck, distinctly portrays the conditions. The case as illustrated by the skiagraph is surely one of greater frequency than we suspect. Unless the technique is a perfect one the result will be that the bones are too vigorously irradiated, and the more delicate periosteal bands will be outshone.

Fig. 6.—Double fracture of the patella.

The more recent the injury, the greater the liability of error. The picture also demonstrates the

difficulty of reposition. The patient being anesthetized, I twisted the ulna. Having noticed a perceptible outward rotation of the lower radial fragment, I felt assured of apposition. While the assistant pressed the ulna inward by means of a bandage loop, I applied a plaster-of-Paris dressing. A skiagraph was taken immediately after. The plate showed that the method adopted had not been successful, and I took off the cast to apply a second one. The result was a better one. Though the function of rotation is good, yet the bones are not in exact position. I wish to remark that the periosteal band followed the upper fragment, and that considerable callus which has formed upon it can be seen, although the skiagraph was taken through the plaster cast. I am glad to say that the skiagraphic conditions, as demonstrated, were stronger than my power of persuasion, the patient submitting to operation—indentation without wiring—shortly after the presentation. The result was perfect, the periosteal band, however, being still noticeable five weeks after the operation.

The importance of the question of periosteal dislocation is also proven by the case of a young man who sustained a fracture of the humerus. Due to the extensive dislocation of the fragments the periosteum was loosened from the bone over a wide area. After covering the fragments this grew to such an extent that it became an obstruction. I removed it subsequently, thinking it might influence the action of the muscles. This teaches us to think of this possibility in cases of suturing of bone, and makes it advisable to remove all miniature fragments and such portions of the periosteum as protrude beyond the point of fracture. If not done, the process of healing may simulate disease.

In this wise the wonderful rays time and again produce new impressions, by the study of which we gain an ever-increasing knowledge concerning the internal mechanism of the healing of bone injuries.

Similar unexpected knowledge was obtained in the case of a man of twenty-nine years, who presented himself at the Postgraduate Hospital with the history of an injury sustained by being thrown down in the street by a trolley car. Pain and disturbance of function followed. Inspection did not reveal any swelling of the shoulder, while palpation disclosed pain and tenderness, while motion showed the presence of crepitus. The Roentgen method (diaphragm) detected the presence of sarcoma of the head of the humerus, which explained the symptoms, especially the fact that a comparatively small amount of violence should have produced a fracture (Fig. 5). Of course, the thin bone shell left by the osteosarcoma would break easily. The patient denies having had any pain or disturbance of function before the accident. This statement I looked upon with diffidence, because the patient expressed the desire of bringing suit against the car company. After the true facts were disclosed to the patient he kept away from the clinic.

This is a case of early recognition of osteosarcoma, the accident furnishing the chance for thorough examination before marked signs would have induced the patient to seek surgical aid. In a case of this kind early resection, followed by Roentgen therapy, would make the prognosis more favorable. The medicolegal importance of the circumstances accompanying the case is self-evident. The skiagraph is a protecting document for the surgeon in the first place. Suppose amputation would have been attempted later without resorting to a Roentgen examination first, the surgeon who first treated the "fracture" might have been held responsible. In the second place the Roentgen knowledge of the case would protect the company against an unjust claim.

To illustrate my views in general, especially with reference to the indications and the technic of operative interference, I may select the patella as a paradigm. The patella is a small bone which, by its superficial location, should appear to be easily accessible to palpation. But my cases demonstrate how even in so pregnant an instance we are apt to err. On account of the absence of a proper periosteal coat, the patella, being a true sesamoid, has little tendency to osseous regeneration. How intrinsic the influence of the periosteum is, we have been able to study well in Fig. 4. It is self-evident therefrom that unless the fragments are well approximated, osseous union cannot take place. And experience has shown that there is no dressing which affords perfect coaptation by any bloodless method; the intraarticular effusion following the fracture always keeping the fragments more or less separated. Still more, it must be borne in mind that the contraction of the extensor muscles always severs the fragments again, even though they have been brought into apposition. The intrusion of soft tissues, a frequent occurrence, is also an important factor in preventing perfect coaptation. The irregular character of the osseous tear is responsible for the laceration of the adjacent tissues, especially ligamentous structures, which become interposed in the gap.

Aspiration of the effused blood has often been tried, but the large clots situated behind the injured area in the joint cavity cannot be driven into the aspirating needle.

The rays have furthermore, as in similar injuries, revealed the fact that there is much more displacement of the fragments than we anticipate, by virtue of our palpating examination. Naturally we must stumble in our diagnosis, and how much greater must be our shortcoming in therapy? Here also the Roentgen method is a friend and truth teller. It shows that not in a single instance is the reduction thorough, even under anesthesia. The fragments diverge invariably, the upper fragment either being pulled upward by the quadriceps muscle, or the lower fragment being completely turned, since the lower patellar ligament has lost its power of contraction.

The recognition of all these well-proved facts shows that the only rational remedy consists in the opening of the joint, its thorough evacuation, and the suturing of the fragments, and eventually wiring. In cases treated by the "bloodless or so-called conservative method," the function of the joint is always impaired in ability to perform extension and thorough flexion, considerable atrophy of the muscles and greater or lesser degree of knock-knee being the predominating symptoms. While those patients who follow a light occupation may not be incapaciated, and can carry their burden with the aid of a knee-cap, working men are deprived of their means of making a living by not possessing the full use of their limb.

The integumental incision is given a semilunar shape, so that a flap is formed, the convexity of which touches the lower border of the patella. The flap is then reverted in the upward direction, the coagula and loose shreds of tissue are removed, and the joint is irrigated with hot salt solution. Any intervening tissue, small bone splinters, and similar fragments are to be evacuated; their nutrition, on account of their scanty provision of periosteum, be-

ing greatly impaired, it is generally impossible to preserve them. Everything, in a word, that stands in the way of exact apposition, should be removed. For uniting the fragments I use catgut if the soft tissues can be well appositioned. If not, I prefer a bronze suture of medium thickness. This material

Fig. 7.—Old patellar fracture wired.

is preferable to any other because its soft elasticity permits of thorough twisting without the risk of a break. The holes are bored in an oblique direction by means of a metal bone drill, while each individual fragment is firmly grasped by a bone-holding forceps and held upward while the manipulations are going on. Through a small slit, made in the middle of the flap, the ends of the wire are drawn out and bent over a small wick of iodoform gauze. Four to six weeks after the operation they are to be extracted. One bronze suture is sufficient if the twisting is done thoroughly. But the soft tissues must be united with the most minute care. Especially the lacerated portion of the capsule and ligaments must be carefully united with catgut. The whole extremity is then to be enveloped by a plaster of Paris dressing, reaching from the foot up to the pelvis, and provided with a fenestra for the control of the wound-area. Thorough asepsis is, of course, the *conditio sine qua non*. Cotton gloves are worn by the surgeon, as well as by his assistants, and grasping the tissues with the hands is avoided as much as possible. No joint reacts so promptly to the slightest offense given to asepsis, and so deplorably, as the knee joint. The reason must be sought in its peculiar anatomical conditions.

In fresh cases the technic is extremely simple. In older cases plastic manipulations must often be undertaken. Then the bronze wire is absolutely necessary as a support. The thorough refreshing of the fragmental margins must then almost always be undertaken. One case may serve as a type. It is that of a man of twenty-six years who sustained his patellar injury by a fall in May, 1905. The diagnosis of simple transverse fracture was made by a reputable physician, and the extremity immobilized in an extension dressing. Seven weeks afterward the patient was allowed to walk about. While it was possible for him to do some of his work, he could not do it well, and standing on his feet more than an hour made him extremely tired. This induced him to invoke surgical aid. I had the privilege of seeing the case October 15 for the first time. The patient limped slightly. Palpatory examination showed a slight transverse diastasis in the middle of the patella. The impression was that a fibrous but firm union had taken place. But skiagraphic examination (Fig. 6) showed the injury in a much severer light. In the first place the fact was revealed that instead of one fracture line there were two, one being represented by the slightly palpable transverse gap, the other being oblique, running upward to the inner margin of the patella; in other words there were three fragments. Between the upper and middle fragments osseous union had

Fig. 8.—Comminuted fracture of the lower third of the femur.

taken place in a somewhat deformed position, the lower fragment projecting anteriorly. This condition had escaped my notice completely on palpation. Between the two fragments which had seemed as one of us, and the lower a gap of fully an inch was detected. This showed, as did the subsequent

operation also, that most of the gap was filled up with irregular fragments of soft tissue, which palpation had erroneously taken for bone structure. It is needless to say that all these masses had to be carefully extracted before the fragments could be made movable. The osseous union between the two other fragments was not disturbed, but the project-

Fig. 9.—Fracture of the femur (Fig. 8) united by wiring; taken through a plaster-of-Paris dressing.

ing bone portions were equalized with the chisel. After having removed considerable capsular remnants from the posterior margin of the lower fragment, it became possible to approximate it to the upper area, but only at its posterior half, the anterior portion still gaping. Still it could well be fastened with a bronze suture (Fig. 7). The remaining portions of the capsule could also be coaptated, and were united with thin catgut. Five weeks after the operation careful massage was begun through the fenestra, and three weeks later the wire was removed. The patient will no doubt have perfect use of his limb. The skiagraph shows perfect osseous union between the two posterior halves of the sutured fragments. Artificial motion was begun a few days ago. On account of the impossibility of drawing the anterior hiatus together, I deemed it more certain to defer extraction of the wire as well as the beginning of the massage treatment for several weeks.

That there are fractures which cannot be reduced properly by bloodless means, although the greatest amount of care is taken, and although the Roentgen method gave the most precise information also as to the detailed character of the injuries, is proved by cases seven and eight. They illustrate how careful the critic has to be, and they also show how necessary it is that the surgeon secure a Roentgen picture in time, so that he can prove the complicated character of the fracture. I have seen both cases not later than two days after the injury, and I have not been able to accomplish proper reduction under anesthesia. In the first case, that of a woman of forty years, who leaped from a height of one hundred and twenty-five feet into a net, which broke, fracture took place at the lower third of the left femur. There was an overlapping of the fragments to the extent of over three inches (Fig. 8). At the same time a number of larger or smaller splinters had formed. The bloody effusion was enormous on account of the extensive laceration of the muscular vessels. There was considerable contusion of the sacrum at the same time. Even after the fragments were freely exposed from the external side, it was impossible to get them into apposition, although a considerable amount of tension and contraextension was exerted. Only after a large chisel was used as a lever could the contraction of the muscles be overcome. One bronze wire (Fig. 9) kept the fragment well in place. The blood clots, the numerous bone splinters, and the shreds of muscular tissue were removed. Recovery was uninterrupted. The wire was removed eight weeks after the operation. The result is blameless.

Case eight is that of a boy of fourteen years who sustained fractures of the lower ends of both bones

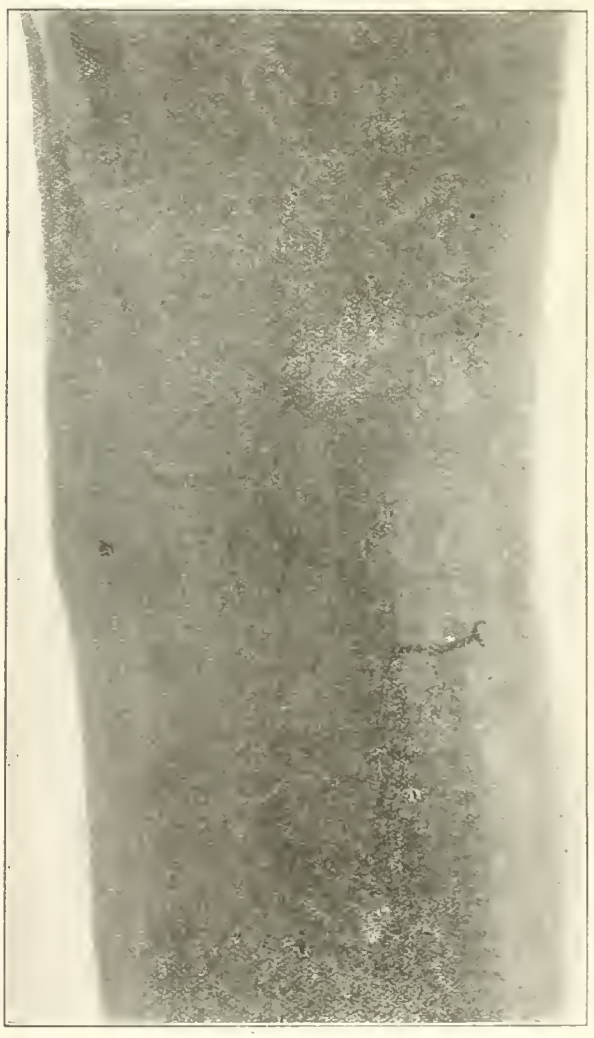

Fig. 10.—Wiring of the radial and ulnar fragments; taken through a plaster-of-Paris cast.

of the left forearm, by a fall on the outstretched hand. The skiagraph revealed extensive displacement of the lower radial and inward displacement of the lower ulnar fragment. I exercised considerable extension and contraextension, and had the impression that the fragments became approximated. While

they were held in that position a plaster-of-Paris dressing was applied. But the skiagraph taken through the cast at once showed my failure. Another attempt was then made under anesthesia, this time the apposition being worse than originally. I learned by this result that the difficulty was offered by my failure of disentangling the lower ulnar fragment. Therefore, after anesthetizing the patient once more, I tried a different maneuver. Instead of extending I tried rotatory manipulation, which should twist the obstinate fragments. But skill was not equal to will. On the testimony of the skiagraph I explained my failure to the patient and suggested exposure of the fragments, disentangling by the chisel and wiring, to which the patient readily consented. Even then, after exposing the ulnar fragment thoroughly, it was only possible to shift it to the opposite side, after repeatedly lifting it over the upper fragment (Fig. 10). Recovery was perfect in six weeks.

Case ten was one in which the lower epiphysis of the humerus detached and completely turned round, so that it became attached to the diaphysis lengthwise. A big mass was felt at the inner surface of the lower portion of the arm. Those who had no chance to examine the arm by the Roentgen method thought this mass, which was nothing but the displaced lower end of the humerus, to be abundant callus. The function of the extremity was inhibited so that the patient, a man of twenty-six years, was unable to make a living. Seven months after the injury I first tried to expose and displace the fragment with a view to transplant it to its normal habitat. But when I had severed it from its connection at the lateral surface of the humerus, I found it to be denuded from tissue, its external surface being represented by the articular surface only. Consequently nutrition would have become greatly disturbed, wherefore I removed it. The result is fairly good, the patient being able to use his arm since the impediment was taken away. The atrophy of the muscles has also disappeared. The arm can be well bent, while extension is possible to an angle of one hundred and fifty degrees only.

I may sum up these views in the following theses:

Let us now consider these cases from a medico-legal point of view. Suppose that the advice given on the basis of the skiagraphs and my tentative manipulations had not been realized. In that case a shortening of three and one-half inches in the first, and a deformed hand, very much impaired in function, would have been the result in the second case. Suppose the patients had then sued me for lack of skill? If I were not in possession of the skiagraphs I am positive that I should not have been able to exonerate myself in court.

I may sum up these views in the following theses:

1. The Roentgen method, in combination with the usual methods of examination, determines the character of a suspected bone injury.

2. If there be no bone injury, the proper treatment consists in massage followed by immobilization, a movable splint being preferable for the latter purpose.

3. If there is a fissure or fracture, followed by no displacement, manipulations of the injured area must be avoided and immobilization in the most comfortable position applied. As a rule a plaster-of-Paris dressing answers the purpose best. After two or three weeks it must be removed and massage begun. In about two weeks a splint of plaster-of-Paris is applied, which the patient can take off and reapply.

4. If there is any displacement, reduction must be tried at once. This can be done either under the control of the fluoroscope on a translucent table, a plaster-of-Paris dressing being applied after reposition is perfect (see Fig. 10 in "The Value of the Roentgen Method in Surgery", *Modern Physicians' Library*, L. Simion Nf., Berlin, 1905). This is a simple, short, and cheap method. A more tedious, but a safer way, is to reduce the displacement under the guidance of a skiagraph taken before. This will indicate in which direction the efforts at reduction must be made and how far. After a plaster-of-Pars dressing, padded with cotton layers at its ends only, is applied, the skiagraph is taken through it, in order to ascertain whether reposition was complete. If it does not seem to be, the dressing must be removed and another attempt at reposition made. If the process of reduction meets with difficulties, an occurrence which can, as a rule, be anticipated from the nature of the skiagraph, anesthesia should be employed.

5. In those cases in which, on account of entangling of the fragments, extensive splinter formation, or similar complications, reposition, even under anesthesia, cannot be accomplished, the fragments must be exposed by the scalpel and brought into apposition. If there be no tendency to displacement, as in the case illustrated by Fig. 1, a plaster-of-Paris dressing will insure immobilization. But if the fragments slip out easily it is safer to unite them with catgut, provided there is enough periosteum to be utilized for that purpose. Otherwise it is best—especially if large bones come into consideration—to keep them together with a bronze wire suture. The sooner this is done, the better it will be, because the smaller are the changes taking place in the soft tissues.

THE UTERUS AND OVARY OF NEURASTHENIA.*

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Summary: This study is restricted to the chronic and aggravated type of neurasthenia, and is based on full histories of a hundred cases.

I. The associated lesions in *cases of this degree*, and their frequency, as indicated by this series, would be as follows: (a) In the ovary, chronic ovaritis, chiefly microscopic, was found in nearly all; (b) in the uterus, endometritis, usually cervical, was present in the majority of cases, and was seldom accompanied with thickening; (c) a high degree of sclerosis of the vessels of the uterine walls, and of those of the endometrium, was sometimes discovered in cases of long standing, and the venous enlargements were many; (d) about the vulva, certain hypertrophies were noted in two-thirds of the cases; (e) in the bladder, congestion of the trigone was frequent (about 40); (f) in the rectum, catarrh, congestion and atony were persistent in a large number.

II. In this class of cases pelvic symptoms are prominent and lumbar pain constant.

III. In almost all of these cases the pelvic disorder is coincident, not causative.

IV. Correction of moderate abnormalities of structure and function by prolonged local treatment or by operation lessens pelvic pain very little and betters the general condition not at all. Treatment should be directed almost entirely to the general condition.

*Read before the Philadelphia Obstetrical Society, December 7, 1905.

V. Operation on pronounced pelvic lesions is warrantable in a few selected cases, such as persistent and exhausting hemorrhages, and the larger tumors, and, if thorough-going, brings about a revolution in the general condition in a very small percentage of cases.

VI. Anatomic cure frequently fails to bring about symptomatic cure.

While the bearings of pelvic disease on hysteria and insanity have been so studied, and the neuroses in general, what is new in this small series of cases is the clinical analysis, from the standpoint of the gynecologist, of the relations of pelvic disease to long-standing neurasthenia; the claim of the frequency of chronic ovarian changes, of chronic congestions of trigone and lower bowel, and of the vulvar hypertrophies of self-abuse; the statement that laterocession of the uterus and thickening of the left uterosacral and broad ligament, with left-sided ovaritis, in the absence of adhesions is always due to chronic proctitis; and figures bearing on the small percentage of cures after operation.

Literature.—There is a great body of writing concerning the interrelationship of insanity and diseases of the pelvic organs, and no small amount bearing on hysteria and pelvic disorders. Anent neurasthenia less has been published, but the general tendency is in one direction.

W. A. Freund ("Neurasthenie Hysterica der Frau," Berlin, 1904, pp. 40; "Das Bindegewebe beim weiblichen Becken, Gynaekologische Klinik," 1885; Gratulations-Schrift für Chrobak, 1903) believes that certain alterations in the connective tissue of the pelvis cause notable anatomical changes in the nervous system in the internal genital organs in women, whence follows a series of constant disturbances in distant organs, as well as peculiar physical changes. One form occurs after acute parametritis, to wit,—scar pressure. The chronic variety is due to long standing catarrh of the bladder, rectum, or cervix, causing scar-like changes in the internal pelvic fascia. The veins are thick-encircled, dilated, or compressed, the arteries narrowed, the ureters drawn upon. The first effect is a venous hyperemia, the last a marked atrophy. He pictures alongside the lower half of the body of the uterus, and alongside the cervix, and beneath the cul-de-sac, extensive neuro-fibromata,—paravesical, parametric, paraproctal. Striking varicosities in the venous system of the vertebral canal and the pia in the sacral and lumbar regions were also found in those women who presented grievous lumbar cord symptoms. Therefore Freund stands for the genital cause of hysteria. He enumerates as causes: Masturbation, excessive coitus, or coitus interruptus, malnutrition, overwork, rapid childbearing and lactation. But he particularly distinguishes women with hypoplasia of the genital and vascular systems, who are condemned to excessive use of the sex function.

F. C. Müller ("Handbuch der Neurasthenie," Leipzig, 1893), under the head of etiology, states that chronic catarrh of the genital passages does not readily set up neurasthenia (as in the male), because the female does not brood over such matters, and associate them with loss of sexuality. Nevertheless, affections of the uterus and adnexa, including uterine displacements, erosion of the portio, and chronic endometritis, are able in themselves to determine not only neurasthenia, but other neuroses and psychoses.

Savill ("Clinical Lectures on Neurasthenia," 2d Ed., N. Y., 1902), under etiology, only speaks of masturbation. This, he believes, to be more common in women than is usually thought.

But the majority of observers are all on one side

Engelhardt ("Zur Genese der nervosen Symptom-Complexe bei anatomischen Veranderungen in den Sexual-Organen," Enke, Stuttgart, 1886, pp. 3, 69), reports on four groups of cases, from Hegar's Freiburg Clinic, many being given in detail—109 cases in all:

1. Marked anatomical changes in the sex organs, *with* lumbar cord symptoms.
2. The same, *without* nerve disturbances
3. Absence of alterations in the sex organs, *with* lumbar cord symptoms, and other nerve disturbances; and.
4. Minor pelvic changes with the above symptoms.

Although two-thirds of his cases are available for comparison, that number includes few that belong in the class of severe cases which I have selected for study;—this is to be borne in mind in reading his conclusions. These are, in part:

"A local pelvic disorder can alone cause nervous manifestations, and often these are confined to the nerves belonging to the lumbar cord. A single distant reflex may be started. Severe widespread neuroses, however, are produced only when such a local disease has been of long standing. Reflex and sequent influence is then rarely alone at fault." Yet it may be the primary and important cause. "To attribute a constitutional neurosis like hysteria to a concrete anatomical alteration contradicts all clinical experience." "In the majority of sufferers from combined sexual and nervous disorders, a very complex set of conditions exists. Congenital predisposition, a tendency acquired in childhood, bad hygiene of puberty, physical injuries, sexual irritations, acute or chronic illness, hard labors, hemorrhages, these damage the nervous system and lead, in combination with the pelvic trouble, to the functional nerve disorder."

A cause which Engelhardt's observations develop is coitus imperfectus and onanism. "We are obliged to maintain that the very severe neuroses which develop (hysteria, with epileptiform seizures, asthenopia, etc.), as well as the pronounced cystic degeneration of the ovaries, with slight perioophoritis,—that these are coeffects of the unnatural irritation of the peripheral genital nerves and of the psychic excitation."

In Engelhardt's cases, one without knowledge of the cause can hardly doubt the primary affection of the nerve center. Unhappily, the conditions are not so simple as this. The symptoms permit of the supposition that a peripheral origin exists. Changes in the sex organs exist, but may be secondary. A fair proportion of Engelhardt's cases do not exhibit nervous symptoms and dysmenorrhea until late in their history. Exhaustion from difficult labors and overwork are then combined with serious pelvic trouble.

Grasset and Rauzier ("Traité Pratique des Maladies du Système Nerveux," 1894).—Under the head of *surménage genital* as a cause of neurasthenia, the authors suggest that masturbation may be an effect rather than a cause, *i. e.* there is no certain way of differentiating between cause and effect. They quote Charcot's distinction between psychical and organic neurasthenia. The latter may proceed from the stomach, liver, genitals, etc.

Löwenfeld ("Pathologie und Therapie der Neu-

rasthenie und Hysterie," 1894; on page 71, summary of views of relations between Neurasthenia and Genital Lesions): 1. Sexual lesions are in themselves sufficient to determine nervous disturbances. The former comprise flexion, prolapse, catarrh, and chronic endometritis and ovaritis. As a rule, there is a neuropathic predisposition. As for the mechanism, the nervous disturbances are in part, of reflex origin, due to compression of the local nerve filaments, in part due to losses of blood and pus, etc., and finally, in part, due to brooding over the disease. 2. Other causal factors usually coexist. 3. The two conditions represent a mere coincidence. 4. A woman already neurasthenic may become worse as a result of some genital lesion or disorder.

Binswanger ("Pathologie und Therapie der Neurasthenie," Jena, 1896) writes at length on the influence of pelvic disease in causing neurasthenia. The burden of his introductory remarks is "coincidence." He does not deny that the local lesions may set up the general condition. The pelvis is rich in nerve filaments and plexuses, centrospinal and sympathetic. The prolonged peripheral irritation may excite and then exhaust the nervous centers; and again the failure of general health may complicate the nervous system indirectly. Under this head we may mention chronic endometritis and metritis, malpositions, tumors of the uterus, para- and perimetritis, oophoritis, ovarian tumors, tubal affections. Profuse menorrhagias and leucorrheas should especially be mentioned for their general effects. A local treatment is, of course, indicated, but in the majority of cases this does not cure the neurasthenia. On the contrary, it is not uncommon to see the latter become worse. Hence, even if the pelvic state has been the cause of the neurasthenia, the latter in time becomes an independent condition, uninfluenced by local treatment.

If a woman, not an hereditary neuropath, has a chronic pelvic affection, and some local nervous manifestation occurs secondarily, treatment of the pelvic lesion often produces an astonishing degree of improvement in the consecutive disorder. But when a woman's nervous system is entirely compromised, local treatment is almost impotent to secure improvement, and the neurasthenia may be aggravated. In certain cases the pelvic lesions may be due to that general disturbance which also brings about the neurasthenic state, the latter considerably antedating the former. Again, on account of the great frequency of both the local and general states, very many cases probably represent coincidences. In a few cases arrested development of the genitals may be associated with neuropathic manifestations .

Dercum, the Philadelphia neurologist ("Relation of the Great Neuroses to Pelvic Disease," *American Gynecological and Obstetrical Journal*, 1898, XIII, 119) has the ablest and clearest paper on our subject; he says that when neurasthenia and pelvic disease coexist, it does not imply that there is any necessary causal relationship between the two affections. If a neurasthenic have pelvic disease, the local symptoms are very prominent by reason of the increased reaction of the general organism to local impressions. If neurasthenia coexist with pelvic disturbances, surgical treatment of the latter cannot remedy the former. This is now so well understood that the day has almost expired in which such operations are attempted. The nervous symptoms caused directly by pelvic lesions do not constitute neurasthenia (pain in pelvis, loins, hips, thighs). When pelvic disease and neurasthenia coexist, the latter state is not a contraindication to operation. Nevertheless, neurasthenics bear operation badly, and are extremely prone to nervous shock. Again, surgical intervention in the apparently healthy may be followed by postoperative neurasthenia. To prevent accidents of this character, patients should be treated by baths, massage, rest, forced feeding, etc., before operation. Any idea that operation on the pelvic organs can cure neurasthenia and hysteria, Dercum insists, must be given up entirely. (It is because I see operation urged on these cases still, that renewed protest is in order.)

Loewenfeld of Munich (Sexualleben und Nervenleiden, 1899, pp. 260; very full bibliography) warns against all hasty conclusion that the association of genital disease and nervous diseases implies any causal relation (174). He believes that the protest of the neurologist has brought about important results in checking overzeal on the part of the gynecologist, and draws attention to the Hegar findings among women with symptoms of irritability of the lumbar cord; to wit, that in 15 per cent. the pelvic organs were normal. Loewenfeld admits that the lower the resistance of the nervous system the more intense and widespread the nerve disturbance produced by pelvic disorder—even though that disorder be not great. Even in the case where the pelvic trouble is the sole originating cause of the nervous disturbances, we have to deal with complex relationships, and even when the two are closely tied together a number of other troubles are brought about at the same time greatly obscuring clear judgment as to what influence is to be attributed to the sex-disorder; and all is complicated by a variety of apprehensions—of marriage, of sterility, of pregnancy, of treatment and operation, of cancer, and he adds, by our method of keeping girls and women ignorant of sexual hygiene.

Loewenfeld's conclusion regarding hysteria is, that "we must confess that in the present state of knowledge no trustworthy criteria are available concerning the reflex interdependence of any one of the hysterical symptoms of women and the disorders of the sexual organs" (p. 190). For the worry-neurosis, the most frequent age is between thirty and forty; and hereditary tendency exists in 80 per cent. As causes among women, he found congressus interruptus, and the want of sexual satisfaction from various causes; anesthesia; abstinence, absolute and relative; masturbation; but there is wide variation between individuals in the weight to be given to the sexual harm.

Krönig ("Ueber die Bedeutung der funktionellen Nervenkrankheiten für die Diagnostik und Therapie in der Gynäkologie," Leipzig, 1902) gives an unusually full bibliography of many hundred titles. Of all this number there is no title relating to the connection of pelvic disease and neurasthenia. In contradistinction to the above, there is a copious literature as to the relationship between pelvic disease on the one hand, and insanity and hysteria on the other. Various works on neurasthenia (*e. g.* De Fleury) touch but lightly or not at all on the relationship between this affection and pelvic disease.

Krönig quotes several older authors as to a connection between the neurasthenic state and pelvic conditions. Speaking for himself, however, he is very skeptical. When endometritis is accompanied by profuse hemorrhage the nervous

system must, of course, suffer. However, in most cases of pelvic disorder associated with neurasthenia, there is no causal relation—nothing beyond a mere coincidence. Krönig appears to be an extremist, and his views may be unsafe to follow. He differs from the majority of authors in his views of women. Thus he believes that sexual apathy or frigidity is the rule among civilized women; also that masturbation is a rare vice with the sex. There is a wide divergence between his views and those of specialists on sex, like Havelock Ellis.

Cappelletti ("La Neurasthenie," Milano, 1903) states that the genitals exert a certain influence on the development of neurasthenia, but that this has been exaggerated. In 250 cases of neurasthenia in females, Krafft-Ebing found but nine cases in which affections of the generative organs could be regarded as cause of the nervous condition. Windscheid, in his study of the relationship between gynecology and neurology, attributed but a mediocre influence to the genitals in the production of neurasthenia. However, in treating the latter malady, recovery is favored by treating the local pelvic condition.

The literary reviews in the *Neurologisches Centralblatt*, etc., do not contain much to the point. Special monographic literature on the subject is very scarce.

In presenting a new study of the relation between pelvic disease in women and neurasthenia, I will exclude cases which obscure the inquiry, such as:

1. Patients weak or delicate from childhood.
2. Hysteria.
3. Melancholia, well defined.
4. Mild or transient cases of neurasthenia.
5. Cases with congenitally defective pelvic organs.
6. Cases not fully examined nor long under observation.

The hundred cases are from private practice, selected from nearly three hundred. They are at the opposite end of the social scale from the series studied by Engelhart in Hegar's clinic. They are not merely from the office work of a specialist, as they were partly gathered in the time before I practised gynecology exclusively. Teachers and musicians (14); young women worn out by long attendance on sick relatives; older women, exhausted by rapid childbirth; a few suffering from the shock of accident or operation; college girls, or society women—all are pronounced types of nerve exhaustion of considerable standing. Many are extreme cases. About twenty had come with the office habit fully established, and a few of these in its extreme form. Most of them have been long under treatment. A year of "electricity" within the pelvis, twice a week; weekly "local treatment" for two years; at various stretches for ten years by regular practitioners; biweekly "straightening" of a "telescoped bowel" by our most ignorant and successful quack; and worst of all, innumerable pessaries and tampons holding up normal uteri.

The acquisition of the office habit is not infrequently due to our medical sisters; the general practitioner who does some pelvic work is often at fault; the male gynecologist is far from blameless; and the writer confesses freely that he has been taught most of what he thinks he knows of this subject, by his own lapses from common sense. That obscure and rebellious symptom-complex which we are considering and which we may dread beyond all other ills, presents such a variety of pains and disturbances of function in and about the pelvis in women, that it is little wonder one looks for the causes of hysteria and neurasthenia and melancholia in the sex organs. In these conditions of the nervous system, too, the patient herself, owing to her habits of introspection, emotional excitability, exalted sensitiveness, and self-consciousness, naturally emphasizes this group of disturbances. Her doctor may thus direct his chief inquiry toward her dysmenorrhea, and may persistently treat an insignificant endometritis and sensitive ovary, ignoring mental and physical reconstruction. Thus neurasthenic women readily become sexual hypochondriacs—in the physical sense, not in the moral sense.

A well-balanced therapy would study to keep far in the background this part of the consciousness, for the emotional woman is overbalanced on the sexual side, whether she be conscious of the danger or no. Exalted states of the nervous system are in some inextricable way connected with sex feeling, as for instance during that period in life which develops a religious fervor characterized by its intensity—the period between fourteen and eighteen. This is the period of extreme and unreasoning emotional affection, and it is also the danger-zone for solitary sexual indulgence. There is a secondary time before the menopause that corresponds with the period of most frequent appearance of neurasthenia; but for this earlier crisis one may hardly lay too much stress on sanity and reserve in treatment, and on wisdom and frankness of teaching and training, whether physical or intellectual.

Symptoms Referred to the Pelvis.—I find that *all these women have lumbar pain.* While all complain of sacral distress, at and between the periods, only 46 suffer from "cramps" or pain in the lower abdomen while unwell; 43 complain of irritable bladder; 24 of leucorrhea, and nearly 10 per cent. are *entirely free* from any pelvic distress or disturbance, save backache.

Frequency of Pelvic Disorders.—In 65 the uterus is in normal position. In the remainder, the following abnormalities of that organ are present:

Anteflexion.—In the days when the normal angle in the uterine canal was called anteflexion, and the normal forward tilt onto the empty bladder was classed as anteflexion and a deformity, great bugbears were made of these two. Nor is the practice altogether obsolete. Therefore, a protest against this explanation for the severe dysmenorrhea of the neurasthenic should be again and again placed on record. In our series, if we label "anteflexion" only those cases wherein cervix and body point nearly in the same direction, six cases are found. In five the office habit was strong, yet the results of treatment had been but temporary. Accompanying endometritis was not marked, but accompanying ovaritis was present in five. One case was operated on, an excessive flexion with very pronounced endometritis and scant ovaritis. Incision, and watchfulness after, put an end to all dysmenorrhea and pelvic distress.

Retroversion.—There is one retroversion to every five cases in this series. This is about the usual average among gynecological patients. Among parous women, one in ten exhibited marked retroversion. Of these ten all but one have been anatomical cures, yet failures as far as striking improvement to the general condition goes. Pessary and operation have permanently replaced all but one uterus, and to the pelvic distresses

there has been afforded more or less local relief (as of dysmenorrhea and menorrhagia), but the other symptoms persist. The menstrual upset occurs still. The patients come back asking for pelvic treatment.

Including postpartum retroversion, there are 21 cases. On these 10 operative anatomical cures have been done, either by shortening of the round ligaments or by suspension, but not one *perfect* symptomatic cure accomplished. Partial relief, yes. Glad they had it done, a short time after operation, almost all. Entirely happy they had it done, two years after operation, only 2 out of 10.

Moreover, these are the patients prone to relapse after operation for retroversion. As far as I know, and this was in the time before the post-operative pessary was my rule, my only relapses after suspension or Alexander, have been in patients of this type—patients with great and incurable enteroptoses, patients with the whole weight of the bowels piled onto the uterus. The same is true of kidney fixations in neurasthenics; anatomical cure is easy; *complete* symptomatic cure infrequent.

"It is to be remembered always that it is not, primarily, the amount of displacement, or flexion, that counts; it is the amount of inflammation, hemorrhage, or enlargement produced." These are the criteria as to the stress to be laid on the mechanical defect.

Endometritis.—Very commonly encountered in its milder types, and chiefly affecting the cervix, it is found in 61 of this series. Only five times in 20 operations (and in 1 of these in connection with retroversion) was much material removed from the uterine cavity by the curette. I venture to think, therefore, that the nervous and vascular disturbances of the endometrium are more common than gross changes in the mucous membrane, and that the curette can promise little.

Chronic Ovaritis.—In two-thirds of the individuals on this list (63), I find ovarian abnormalities. Martin quotes 13 to 17 per cent. as a fair average in gynecological office practice. The most frequent condition is chronic ovaritis, chiefly microcystic. Ovarian tenderness of a very pronounced character, and distinct enlargement, and prolapse into the cul-de-sac make up the balance. While the diagnosis of chronic ovaritis is not proven in any case which has not been subjected to ocular demonstration, the findings by bimanual seizure must be approximately correct, as they tally with the exhibits during laparotomy. As many of these patients are thin or have lax abdominal walls, and as many of these ovaries hang low, accurate touch is frequently practicable. Chronic rectal irritations in neurasthenia cause many of the persistent irritations and inflammations of the left ovary. On direct inspection and palpation or resection by laparotomy, the following changes were noted in twenty-two chronic neurasthenics (many of them outside of this series). Ovarian cysts of considerable size were present in 3 cases, ovarian abscess in 1. Chronic microcystic ovaritis was present in 20. Not one abdomen, let it be said, was opened for this condition, in this class of patients.

If you ask, What constitutes a normal ovary, or, Have I ever seen one, or, Is the microcystic ovary a diseased ovary, I answer by this evasion:

For clinical purposes, we may classify the minor variations as abnormal or diseased, should we find alteration in the degree here specified:

The edematous ovary, when the swelling is marked or the knife finds much fluid in the structure; the hyperesthetic ovary, found acutely sensitive at more than one palpation; the varicose ovary, enlarged, with thickened ovarian plexus, seen on opening the abdomen; the dislocated ovary, in the cul-de-sac; the small-cyst ovary, with distinct *tension* of several cysts of a diameter of one-fourth inch or more; the chronically infected ovary, belonging either to adherent salpingo-oophoritis or to chronic proctitis with thickening of the uterosacral or broad ligaments (rare); the sclerotic ovary, in younger women, markedly shrunken as seen by section.

Yet I admit that one and all of these conditions may be present in certain women and the organ functionate without protest.

It would seem plausible, then, if laparotomy demonstrates that the ovaries of these neurasthenics are abnormal, and bimanual palpation can find two-thirds of such ovaries to be in trouble, to reason, from this small series of cases, that the two conditions belong together,—that most chronic neurasthenics have chronic ovaritis. And removal of such ovaries has brought much discredit on surgery.

Fibroids and Arteriosclerosis of the Uterus.—This extensive subject far outreaches my limits. I may only express a belief that there is a large proportion of arteriosclerosis in old cases of neurasthenia; that a single organ may be selected for the vascular changes, and that the uterus is frequently the chosen organ. Alterations in the blood-vessels were extreme in degree in four uteri removed for incoercible and exhausting hemorrhages in women with a long history of nerve exhaustion. (Dickinson, "Intractable Menorrhagias of arteriosclerosis of the uterus," *Brooklyn Medical Journal*, 1906.) After operation the anemia betters, the "monthly tragedy" no longer enacts itself, but the general condition alters little.

With fibroids the usual rule of operating for marked pain, for pressure, for active bleeding, or for complications, must be modified somewhat, under the first indication. As we recall that the neurasthenic pain-gauge has the habit of pointing unduly high, we shall be chary of promise of relief by operation. These be our celiotomy ghosts, that will not down, nor cease to haunt us with so-called "adhesions."

Varicosities of the broad ligament are not easy of determination, except in the most pronounced cases, and such a diagnosis should be verified by laparatomy to be tallied. I believe these to be frequent, but cannot prove it. Indeed, chronic disabling of the pelvic vasomotor apparatus is probably constant. The explanation of the relief given to pelvic aches in certain neurasthenic women by the pessary and the tampon underneath the normally located uterus and ovary, lies in the support of the varicose veins of the broad ligament and ovarian plexus, exactly as the suspensory helps the analogous male varicocele.

The kidneys were subject to a considerable degree of displacement in 19. Of *bladder irritations*, there was complaint in 43, but the systematic study of the bladder in the cases which are troublesome enough to warrant inspection by the cystoscope is too recent to make the report of any value. My observations suggest that the majority of patients presenting an aggravated habit of self-abuse have slight chronic inflammation and varicosity of the base of the bladder.

Rectal Catarrhs.—I have learned that latero-

cession of the uterus, chronic tenderness or thickening of one uterosacral ligament, chronic unilateral ovaritis, and retrocessions of the uterus, anteflexed or not, in the absence of a history of acute pelvic peritonitis, and in the absence of pelvic adhesions and salpingitis, are due to chronic rectal inflammation. Indeed, one may go so far as to predict, in the presence of any right-sided trouble in the above list, that the patient owns a right-sided rectum. As neurasthenics are common subjects of constipation and proctitis, the rectal examination is important and the cause of the pelvic disorder and its therapy are made clearer. Treatment of long-standing rectal catarrh is productive of distinct results, but complete cure is often missed.

Masturbation.—If the following alterations about the vulva are certain signs of solitary sexual indulgence, as I have elsewhere argued at length ("Hypertrophies of the Labia Minora," *American Gynecology*, Sept., 1902), then sixty-five of this series had been, *at some time*, addicted to the habit in a degree sufficient to produce profound changes in the external genitalia. Of these alterations, one or more may be present: labia minora (one or both), greatly enlarged, with cockscomb corrugations; pigmentation, sometimes pronounced; their sebaceous glands often numerous and distended; prepuce usually (alone or in combination), and fourchette (alone or in combination), strikingly duplicated, corrugated or folded, at times pigmented; varicosities about prepuce; dilated meatus, usually with lateral flaps and deep urethral glands; strong levator and anal sphincter. In the ordinary run of 1,000 consecutive cases in gynecological office practice, more than one-third of the patients presented these hypertrophies; of 150 neuropathic women, over half showed them, and in these aggravated neurasthenics, two-thirds, as stated above. At some future time I may have the temerity to try to correlate masturbation and neurasthenia. For the present, let me say that I believe the two matters are coincident, not consequent. It is noteworthy that twenty-one of the women with vulvar hypertrophies are all of the most grievous type of neurosis. On the other hand, four severe nerve exhaustions show no signs. And, moreover, the most extreme and prolonged solitary venereal excesses, in a limited number of individuals, may be shown to bring about no exhaustion of the nervous system.

Endometrium, uterine wall, ovary, bladder base, rectal mucosa,—all suffer from a chronic vascularity, a persistent venous engorgement, and some proven instances of arterial spasm and thickening. These vasomotor changes are alterations, I believe, that belong to the condition, and I hope to see in the discussion light thrown on the question of neurasthenia as a psychosis and where it belongs, and neurasthenia as an arteriosclerosis, and where it belongs—perhaps as a late development, in these worst cases.

Treatment.—The *minor measures*, for relief of pelvic symptoms, are in brief: For dysmenorrhea, bromides with hydrastinin (and helonin); for the menorrhagias, good ergot, stypticin; for rectal mucous catarrh, irrigation with astringents, and cure of constipation; for bladder irritations, water freely, and urotropin.

The *major measures*. After a careful study of the conditions of the patient's life, we plan such remodeling of the habits that each day she spends less nervous energy than she makes, such radical changes in ridding her of special worry or strain as by greatest effort of sacrifice may be possible; such thorough-going training in outdoor life,—first by resting methods, if necessary;—then by development of the muscular system; such a program of forced feeding and long sleeping, and healthful mental attitude and occupation, as to constitute gradual but complete readjustment. These are to be preceded by operation in a very limited number of cases, such as tumors (*e. g.*, ovarian) growing, and necessarily fatal; or exhausting hemorrhages, as from submucous fibroids, or extreme retroversion associated with marked endometritis that will not yield to lesser measures. But with the distinct understanding that the operation is to save life, or to initiate the cure, a first step to the more important measures above, and attended with danger of prolonged nervous disturbance.

Thus, in confirmed neurasthenics with pronounced pelvic symptoms, the hopefulness of the outlook depends not so much upon the operative cure of the few life-endangering conditions as upon the measure of our success in persuading patients to live and work contentedly within the fences of their limitations; on happy mental occupation; on the outdoor habit and outdoor hobby; on graduated muscular training and hydrotherapy; on regulated feeding and resting. What hospitals now are to major surgery, country and suburban sanatoria will become for the education of the sufferers from chronic illness.

APPENDICITIS.

A STUDY OF A SERIES OF ONE HUNDRED AND FORTY-SEVEN APPENDECTOMIES.

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My object in this paper is not to review the subject of appendicitis in general, as its literature is sufficiently voluminous, but to record my personal observations in a series of 147 appendectomies and various deductions drawn therefrom. The series is a consecutive one including all cases in my service at the Beth Israel Hospital within the term of the series that were operated. The few cases that were allowed to recover (?) without operation either by reason of their own refusal or because the indications were not sufficiently definite to demand it, are not included in this report. Otherwise every case was operated, none being refused on account of anticipated unfavorable outcome.

I am indebted to Drs. A. M. Hilkowich, B. E. Sheitlis, and H. Lorber, house surgeons of the hospital, for valuable assistance in the tabulation of the cases.

History of Previous Attacks.—In the records of 140 of the cases, where mention is made of this item, 94 patients denied any previous attack, while 46 admitted from one to five; of these 46, 26 had one previous attack, 9 had two, 4 had from three to five, 5 had continual pains since their first attack, and 2 had frequent general colic for years.

Of these 46 patients with a history of previous attacks the first attack dated back in 2 to one month, in 3 to two months, in 3 to three months, in 6 to between three and six months, in 16 to between six months and one year, in 7 to two years, in 3 to between three and four years, in 1 to seven and in 1 to eleven years. In 4 the time was not recorded.

These figures indicate that 33 per cent. of those coming for operation are recurrent cases, but that does not mean that only 33 per cent. of cases recur. The proportion is much higher and would have to be ascertained from observation of a series of unoperated primary cases. We do not get so many recurrent cases these days because so large a proportion is operated in the first attack; this is shown in this series, in which 67 per cent. were first-attack operations.

While the interval to recurrence may vary from less than a month to more than ten years, the most likely period is from six months to one year. The probability of recurrence is less in proportion to the length of time previous as well as subsequent to that period.

Day of Attack Operated.—Seven patients were operated on within one day of the beginning of the attack, 16 within two days, 22 within three days, 28 within four days, 13 within five days, 11 within six days, 17 within one week, 18 within two weeks, 7 within one month, 1 within two months, and 2 within three months. In 5 the time is not stated.

At first thought it would seem that the delayed cases would prove to be the bad ones, or at least to include most of the bad ones. This would be true if the development of local abscess were taken as the criterion, but it does not apply when general peritonitis is considered as an advanced form of appendicitis. The development of the general infection may occur at any period in the course of a neglected case, but it seems to require peculiar conditions of its own, and is just as likely, as far as we can judge any particular patient, to develop during the first day as later on. Two of the seven patients operated on within the first day of the attack proved to have diffuse peritonitis; 5 of the 16 operated within two days proved likewise; 4 of the 22 in three days, 4 of the 28 in four days, 2 of 13 in five days, 1 of 11 in six days, and 5 of 17 in seven days proved to have diffuse or general peritonitis. Of the 28 dating the beginning of their attacks back more than one week there was but one case of diffuse peritonitis. This patient had been sick more than four weeks and operation showed that he had developed a diffuse peritonitis early in his sickness which had taken the unusual course of localizing itself into multiple abscesses separated from one another by adhesions among the intestines. This was therefore not a late but an early development of a diffuse peritonitis that nature was attempting to cure.

Age and Sex.—The ages of the patients ranged from five to fifty-nine years; 64 were below twenty years of age, and 83 were above. Eighty-nine patients were males and 58 females.

Symptoms.—Under this heading I purpose merely to take up some of the more important symptoms and speak of them as they were exhibited in this series of cases.

First Symptom.—In about 75 of the cases a note was made of the patient's statement as to what was the first symptom he felt when his illness began. Thirty-two, the largest number, gave pain in the right side; 27, the next largest, gave general abdominal colic; 5 mentioned pain in the umbilical region, 3 pain limited to the left side, and 1 pain in the epigastric region; 4 began with vomiting and no pain, and 3 with chills and fever and no pain.

Pain.—Pain, as would be expected, proved to be the most constant symptom. It was prominent in 127 of the cases. In the other 20 it was not much complained of, but could be brought out as an objective symptom. Of the 127 patients complaining of pain, 112 referred it distinctly to the right side, 5 entirely to the left side, 5 to the umbilical region, and 5 to the abdomen in general. Fifty-three of the 112 with pain in the right side began with general abdominal colic which sooner or later became localized to the right iliac region.

Constipation.—The next most frequent symptom noted was constipation, which was present in 103 of the cases. Diarrhea is rather exceptional, yet was present in 6. My rule regarding constipation has always been, even in acute inflammatory cases, to make an attempt to relieve it, generally by calomel followed by enema and salts if necessary, previous to operation, with confidence that the beneficial effect on the patient's general condition of a thorough cleaning out and disinfection of his intestinal canal, and the establishment of intestinal drainage of the peritoneum, by far outweighs the bugbear of fear of peristalsis doing any local damage.

Vomiting.—Vomiting is another of the almost constant symptoms, especially in acute cases. It was present in 100 of this series, including mostly all of the acute and some of the subacute and interval cases.

Dysuria.—This symptom was complained of in 22 cases, and proved almost always to be due to proximity of the inflammatory area to the bladder.

Chills.—Forty-six patients included distinct chills in their histories. Of these 12 had general peritonitis, 19 local abscess, making 31 with pus, and 15 were clean cases. Chills with the onset of the attack are no indication of abscess, but coming on later, especially after four or five days, they are a pretty sure sign of pus outside of the appendix.

Temperature.—The temperature before operation ranged from subnormal to 105.2°. This series indicates that while the temperature is likely to be higher in a case with pus than in a clean case, and still higher in a diffuse peritonitis, no reliance can be placed on temperature by itself in any individual case as an indication of the local condition. The temperatures in the 60 cases without pus were from normal to 103.5°, the average being 100.3°. In the 62 cases with local abscess the range was from normal to 103.6°, and the average 101°. In the 25 cases of diffuse or general peritonitis the temperature was from 96.4° to 105.2°, average 102°. While the temperature is not of much value in the diagnosis or prognosis of clean or local abscess cases, it seems to be of use in the prognosis of general peritonitis, though not an invariable indication even then. In general those presenting the higher temperatures recovered, and those the lower died. Of the 25 cases the temperature in the 15 that recovered ranged from normal to 105.2°. 12 patients having 102° or above, and 3 less than 102°, an average of 101.7°. The 10 that died ranged from subnormal to 102.6°, only 4 having 102° or over, and 6 having less, an average of 100.8°. The explanation of this seeming paradox lies in the fact well known that fever is the natural reaction to the invasion of infection and is an indication of the presence of the good vitality necessary to carry the patient over a severe crisis. On the other hand, absence of temperature indicates a general apathy and want of resistance to the invasion of general infection. Absence of temperature where conditions justify its presence is an unfavorable sign, and its presence, especially when backed by a good pulse, is favorable.

Pulse.—The general unreliability of the pulse by itself as an indication of the local conditions

is well illustrated by the following analysis. The counts here given are those taken on the admission of the patient to the hospital. Besides the local pathological condition other influences, such as the character of the infection, the personal element or idiosyncrasy of the patient, the vital condition as indicated by the variation from normal in the reaction of the system against infection, govern the pulse rate and quality. I have made note of the mortality of the general peritonitis cases under the different pulse rate headings to bring out the point that the pulse in this condition, while not a positive omen, is much more reliable than temperature as such. The pulse was 90 or less in 27 cases of which 16 were clean, 8 had local abscess, and 3 had general peritonitis; of the latter, 2 died. It was between 91 and 100 in 33 cases of which 19 were clean, 11 had local abscess, and 3 had general peritonitis; of the latter, 2 died. It was between 101 and 110 in 24 cases of which 9 were clean, 13 had local abscess, and 2 had general peritonitis; none died. It was between 111 and 120 in 35 cases of which 12 were clean, 15 had local abscess, and 8 had general peritonitis; 1 of the latter died. It was 121 or more in 24 cases of which 5 were clean, 9 had local abscess, and 10 had general peritonitis; of the latter 5 died The pulse normal to the local condition should have a relative correspondence to the temperature, should not be slow with a high or frequent with a low temperature. Either of these discrepancies is a bad prognostic omen. A pulse that retains its usual frequency in spite of an evident local inflammatory condition is not up to the mark and should be looked on with suspicion. Likewise a pulse that has a tendency to run away faster than the provocation justifies is not to be depended on. The pulse has a tendency to run up high in the initial stage of infection, during the stage of lymphangitis before suppuration takes place. Then as it becomes accustomed to the presence of the infection it moderates somewhat. This initial rise accounts for so large a proportion of the clean cases having a comparatively high pulse rate, they having come under observation and been operated during the initial stage. The other clean cases were either chronic in which there was very little sepsis, or they were somewhat older in which the period of invasion had passed or the severity of the infection was already on the decline and the local condition had become temporarily dormant. When a case goes on to suppuration the normal pulse for that condition should be frequent, with morning and evening fluctuations in conformity with the temperature. It may be between 90 and 120. A drop below 90 in the absence of a general peritonitis is not a bad indication, but a rise above 120 is. Taking the severe type of the disease, that where general peritonitis has developed, to illustrate the relation of the pulse to the prognosis it will be noted that of the six cases with pulse below 100 four died, while of the ten with pulse between 100 and 120 but one died, and again of the ten with pulse above 120 five died.

The character of the pulse must also be considered, both in the diagnosis and prognosis. The so-called peritonitic pulse, the pulse of shock, small and wiry, indicates as a rule a diffuse or general infection and in proportion to its smallness and frequency the seriousness of the outlook may be judged. It is not always that the pulse responds in this manner to an extension of the previously localized infection; very often there is no noticeable change at all; but when such a pulse does suddenly appear with concomitant symptoms it indicates the shock of rupture into the general cavity of the contents of a distended appendix or of a local abscess. In the absence of a diffuse infection the pulse is not likely to assume the peritonitic quality, or if it does so temporarily, it does not retain it.

Leucocytosis.—A leucocyte count was made previous to operation in 43 cases, practically the latter part of the series. Twenty-six of these were cases without pus and their average count was 12,900; 18 of these 26 counted below this average, the lowest being 6,000. Of the 8 above the average one counted as high as 30,000, one 22,000, one 21,000, and the other five from 18,000 to 15,000. Eleven proved to be local abscess and counted from 12,000 to 36,000, average 17,500. Six were general peritonitis and averaged 20,700. The lowest was 6,000—this patient died—the next lowest 18,000 and the highest 28,000. These figures go to show that, like pulse and temperature, the leucocyte count in itself is no positive indication of the presence or absence of pus in any individual case, yet it may be of value as confirmatory evidence in the presence of other symptoms. The averages confirm this; 12,700 for the clean cases, 18,300 for local abscess, and 20,700 for the general peritonitis cases. This average for the clean cases is above normal by reason of a few very high counts among them, evidently due to some concurrent condition, while again the average for the general peritonitis cases is low by reason of one very low count, 6,000, surely unusual under the circumstances and indicating an abnormal absence of reaction on the part of the economy owing to which the patient died. There is hope for a more definite indication from blood examination in the differential count of the leucocytes, figuring only the relative number of the polynuclear leucocytes which seem to be the variety proliferated in the presence of abscess.

Choice of Time for Operation.—The question as to the most favorable time for operation has been the subject of a great deal of discussion. My practice has been to operate so soon as the diagnosis has been made, irrespecive of the period of the affection. What may be gained by any other course is more than counterbalanced by the risks of waiting. Interval cases, so far as the local condition is concerned, should certainly be operated as soon as practicable to exclude the possibility of recurrence that may take place at the most unexpected moment. In acute cases in which abscess has not yet developed, my observation has been that the existing inflammatory condition does not add any more to the risks of the operation than if it were done after the subsidence of the acute attack. These cases are invariably closed up after operation and no sepsis occurs. To wait for the subsidence of the acute attack gives us no assurance in any case that it will not go on to suppuration and possibly perforation and general infection of the peritoneum. Local abscess cases are, as a rule, simple and easily handled, yet in some the operation is very difficult on account of extensive adhesions, due to previous attacks, and the risks of working in a septic field are added. Yet my experience has been that the risks even in these severe cases are smaller with immediate operation than with waiting for subsidence. When abscess has formed, and we wait for subsidence, what becomes of the pus? While it may become encapsulated and re-

main dormant for a time this is exceptional and even then it does not remain so indefinitely. If we operate in this stage we have pus to reckon with anyhow. When subsidence takes place after the existence of an abscess, it is because the abscess perforates and discharges, generally into the gut, sometimes into the bladder or other viscera. This outcome is fortunate so far as the immediate danger of the existing attack is concerned, but leaves the patient with additional extensive and dense adhesions of an already crippled appendix to be dealt with in the future operation. Were this course of rupture into the gut assured it might be advisable to wait and have the advantage of working in a clean field, but while waiting for this good fortune the abscess is continually enlarging and involving new areas, and a most unfortunate perforation into the general peritoneal cavity is just as likely to take place as perforation into the gut. In general peritonitis there can be no reason for delay. The patients die if they are not operated, and the sooner the abdomen is opened and drained the better chances have they to recover.

Incision.—The incision used, as a rule, in suppurative cases was the right oblique through all the layers which were again united layer by layer, except for a small opening for the passage of a cigarette drain. In many instances the gridiron incision was found sufficient, but frequently the deep muscles had to be incised above or below the original slit or in both directions to give room for the necessary manipulation. Of late I am using the gridiron incision much more frequently in suppurative cases; if it does not prove sufficient there is always time to enlarge it. In clean cases the gridiron incision was invariably used. In a few the incision was median on account of uncertainty in diagnosis. In one case a second incision was made in the loin and the abdominal one closed because of the peculiar location of the abscess cavity. In the general peritonitis cases where a median incision had been made it was considered sufficient, but where a lateral one had been made the rule was to make a second incision on the left side similar to the one on the right and, after removal of the appendix and necessary attention to the abdominal cavity, to sew them both up again except for the drain openings. This second incision on the left side, while it greatly increases the efficiency of the drainage, takes but a moment to make and does not add appreciably to the time or shock of operation. It is done by inserting two fingers through the right incision and passing them under the abdominal wall to the left side, raising the parieties and cutting right through onto the fingers as a guide. The double incision was made in seventeen of the general peritonitis cases, always with satisfaction to the surgeon and benefit to the patient.

Local Condition.—Sixty were clean cases; that is, had no pus outside of the appendix. Sixty-two patients had local abscess, more or less extensive. Twenty-five had general peritonitis. This gives a series with about 40 per cent. of clean cases and 60 per cent. of abscesses. Of the latter about one in every three was general peritonitis. This is a large proportion of pus cases, and especially of general peritonitis and the reason for it lies in the nature of the service at this particular hospital, which is largely emergency, and which receives most of the urgent cases from the surrounding district in addition to those that come in the ordinary way.

Breaking Protective Adhesions.—The separation of adhesions about the abscess cavity seems to be regarded with general apprehension by the profession on the ground that it would result in the spread of the infection to the general peritoneal cavity. Due to hesitancy in this regard the diseased appendix when not immediately in the operative field is very frequently abandoned to be recovered by subsequent operation or to cause future trouble. It is rather exceptional that the appendix lies entirely within the abscess cavity and can be removed without opening into the uninvolved peritoneal cavity. This may be done when the appendix lies in contact with the parieties anteriorly or laterally, the opposite wall of the abscess being made up of other adherent viscera. In such case the appendix may be peeled up without breaking adhesions that guard the unaffected peritoneum. But generally it lies among and is adherent to the other viscera, making up with them the protective abscess wall. To separate it under these circumstances means to break through the adhesions and expose more or less unaffected peritoneal surface to the septic field. As this latter condition is the usual one very few appendices in pus cases can be excised without opening the general peritoneal cavity. This fear of extension by the breaking of adhesions would certainly apply to intraabdominal abscess that has not been opened for drainage, for here it must result in the extension of the septic process. But the conditions are entirely different in the course of an operation when an outlet is provided for the septic material. Here the drain prevents the accumulation of any surplus, while the peritoneum is able to take care of what little is left. Long ago I lost my fear of breaking these adhesions as I learned from observation of cases in which they were broken inadvertently that no harm was done. In this series three appendices were left on account of the general condition of the patients, but none was abandoned for fear of breaking adhesions, and no case developed general peritonitis or even did badly as a result. Drainage prevents the spread of the infection, and these cases are all drained anyhow, so that this feature adds nothing to complicate the operation. When the exposure of the uninvolved peritoneum has been extensive I use one or two extra slips of gutta-percha tissue from the infected region through the drain opening. Generally even this is not necessary, the usual cigarette drain to the site of the abscess being sufficient.

Location of the Appendix.—In relation to the superficial parts the base of the appendix has a fairly uniform situation at its junction with the lower part of the cecum, to the inner side and posterior. But from this point as a center its body may radiate in various directions, which must naturally influence the locality of the pathological developments when inflammation occurs. The following schedule gives the comparative frequency of radiation in different directions:

Radiating inward toward the median line	14
Radiating inward, the appendix long and anterior to the ileum and its mesentery	6
Radiating inward, the appendix long and posterior to the ileum and its mesentery	9
Radiating downward, below the cecum	40
Radiating downward, the appendix long and extending into the pelvis	21
Radiating upward, anterior to the cecum	6
Radiating upward, to the outer side of the cecum	17

Radiating upward, the appendix long and extending toward liver	6
No record as to location	28
Total	147

The records of the cases herewith given show that the most favorite locality for the appendix is just below and to the inner side of the cecum so that in case of trouble the signs would be most evident at the classical McBurney's point. Radiation in different directions, especially when the appendix is long, gives the variation observed in the location of the pain, etc., in different cases. The longest appendix I have encountered measured 8½ inches, another 7 inches, one 5½, and three 5 inches. No note was taken of those not varying much from usual length, which I should judge to be from 2½ to 3 inches. Especially when the appendix is long and involved near its tip is the location of the signs and symptoms likely to be far removed from the usual position. One of the most troublesome situations is when a long appendix curves up under the ileum and its mesentery in the direction of the umbilicus, and trouble develops at its distal end. Nine such are recorded in this series and they complained of pain on the left side, some presenting no right-side symptoms at all. Two had their abscess cavities wholly to the left of the median line. Diagnosis is always difficult in these cases and sometimes impossible, and is made only after an exploratory, generally median, incision. A long appendix extending downward into the pelvis is a comparatively frequent condition. Inflammation here causes pain from McBurney's point downward, is likely to cause dysuria from contiguity to the bladder, and in the case of abscess frequently causes a condition simulating intestinal obstruction by pressure on the rectum. When the appendix lies to the outer side of the cecum it is in contact with the parieties in that situation, and the region of major pain is just within the margin of Poupart's ligament. When a long appendix in this situation runs upward toward the liver it gives a different picture and is frequently the cause of doubt in diagnosis between appendix and liver conditions. One case in this series was especially marked in this respect. There was a painful mass below the liver with symptoms of abscess. No pain at McBurney's point, no history pointing to or symptoms of appendicitis. Incision was made at the border of the rectus over the mass which was found to be a retroperitoneal abscess to the anterior wall of which the tip of the appendix was adherent. The balance of the long appendix was normal in appearance. The abscess was so unusually situated that it was drained through a lumbar incision, allowing the abdominal one to be closed. The relation of the inflamed appendix to the parietal peritoneum has a marked influence on the severity of the pain. It is well known that the parietal peritoneum is much more freely supplied with nerves and is much more sensitive than the visceral. Consequently when the appendix is in contiguity, as it frequently is, with the anterior abdominal wall or with the pelvic wall, and involves one of these in its inflammation, the pain is much more severe than when it lies among the intestines or below the mesentery.

Condition of the Appendix.—To classify the various conditions in which the appendices were found and be exact is a very difficult matter, as many were the subjects of multiple conditions that would require each of them to be placed under various headings. The following classification takes into consideration only the main pathological feature in each case. It is therefore correct only in so far as that main feature is concerned. Its incorrectness may be illustrated by the fact that most of the perforated and many of the enterolith cases were also gangrenous; many of the perforated and gangrenous cases were due to obstruction of the lumen by enterolith, stricture, etc. The classification was arranged in this manner with a view to illustrate the causative relation of the conditions found to the establishment and course of the inflammatory process.

In 132 of the cases the condition of the appendix was recorded. Of these 40 presented more or less inflammation or the results of previous inflammation mainly evidenced in adhesions. Distension of the organ with purulent contents was caused by the organ being acutely bent on itself, the angulation causing obstruction to the lumen in 7 cases; enterolith was the cause of obstruction to the lumen and distention in 16 cases, and organic stricture in 5. The appendix was gangrenous in 32 instances, and perforated in 32. One of the main causes of trouble in the appendix is interference with the patency of its lumen and consequent stagnation of its contents, which are necessarily septic by infection from the bowel. The simplest cause for such a condition is an angular bend in the continuity of the appendix. This causes retention, local inflammation, and surrounding adhesions which in turn aggravate the condition and close the outlet completely. I have seen in more than one case an acutely bent appendix, its proximal and distal portions adherent to each other, with the distal portion distended and inflamed. On slitting open such an appendix a distinct line of demarkation is observed at the angle, the proximal portion practically normal in appearance and the distal distended with purulent contents and its inner layers gangrenous.

Enteroliths that form by gradual accretion of fecal particles entering from the bowel may likewise be the cause of irritation and adhesions. The inflammatory reaction causes infiltration and thickening of the inner layers that grasp the concretion the more tightly and so close the outlet the more securely, resulting not only in the damming back of the contents, but also in strangulation of the circulation in the distal portion and consequent gangrene and perforation, which latter is very likely to take place from pressure necrosis at the site of the concretion. Another possible result of the presence of a concretion is ulceration of the mucous layer from its irritation and, with the subsidence of the attack and healing of the ulcer, the production of cicatricial stricture of the lumen, partial or complete. Of the five cases of stricture observed three were incomplete. In one just beyond the stricture there was a poppy seed that was too large to pass through, and that acted as a ball valve preventing drainage. The other was an exactly similar condition, but with a small concretion substituted for the poppy seed. In one an incomplete stricture was completed by the swelling of the mucous membrane. Two other cases were complete fibrous strictures without the presence of any concretions and giving no clue as to the cause of the stricture. In both the appendices were found distended with fluid contents but not yet ruptured.

Stricture is probably more frequent than indicated in the above tabulation, as many of the gangrenous and perforated cases might have originated from this cause, the evidence of its

presence having been eliminated in the general destruction of the parts. Likewise angularity and enteroliths must be held responsible for a number of the cases that were found in the terminal condition of gangrene or perforation. My observation has convinced me that most cases are originally due to some such physical cause for obstruction as we have been considering. Yet many are observed in which the appendix is found inflamed, with congestion of the serous coat and infiltration and swelling of the mucous membrane, with no evidence on close inspection of any of the above causes of obstruction. Infection from neighboring septic conditions, such as colitis or infection of the pelvic organs in the female, will account for some of these cases, but most seem to be due simply to the opportunities presented in the stagnated contents of the appendix for the proliferation of the various bacteria that are likely to enter there. Given any cause that interferes with the natural resistance of the parts to the invasion of these bacteria, among which may be included acute gastroenteritis, constipation, rheumatism, the fevers, traumatism, etc., and these bacteria take advantage of the opportunity to proliferate and to enter the tissues and lymphatic circulation and thus start the process that if not checked results eventually in lymphangitis, gangrene, perforation, and abscess.

Mode of Amputation.—Much has been written regarding choice of the mode of amputation of the appendix and various methods have been advocated. I have limited my work to a few of the methods, and make my choice not by routine preference for one or the other, but by the conditions in each individual case that make one or the other more suitable.

Ligation of the stump and cauterization of the exposed mucosa was done in fifty-eight of the cases. Separation of a peritoneal cuff and stitching the same over the ligated mucosa and muscularis was done in 16 cases; inversion of the stump, with purse string suture, 52 cases; decapsulation of the appendix, with either ligation or inversion of the core, 14 cases; the appendix found spontaneously amputated, 4 cases; not excised, 3 cases. Of the three appendices not excised one was in a case of extensive suppuration in very bad general condition, another in a case of general peritonitis, also in extremis, and the third was the only one in the whole series in which the appendix could not be located within the amount of time and manipulation thought justifiable at the time for the sake of its recovery. This patient passed out of my hands, but I am informed that he had two recurrences and two subsequent operations, the appendix being secured at the third operation, subsequent to which he remained well.

The method of ligation and cauterization of the stump with the actual cautery or with carbolic acid, followed by alcohol, and the return of the stump in this condition to the abdominal cavity, was the one I previously used, and from a practical point of view, judging by results, I have no fault to find with it. It has never caused any trouble, either in closed or drained cases, except once, in a case operated previous to this series, and there the cause was that the cecal attachment was unusually situated on the front of the cecum, allowing the stump to point directly into the drainage opening. It became adherent there and its orifice subsequently became patent and formed a fecal fistula. This was a very interesting case in other respects also, and was fully reported in the Medical Record, April 18, 1903. While this simple ligation method may be practically good it is not theoretically nor anatomically correct, for various reasons. One is that the sterilization of the stump by cauterization cannot be entirely depended on. Another is that the ligature brings in apposition mucous surface to mucous surface, which cannot unite except when the mucous layers have been destroyed by disease. The closure must take place by union of the raw edges of the stump where amputated, or where ligated, if the ligature be tight enough to strangulate the distal portion, with the serous covering of the adjacent viscera, thus necessarily causing adhesions. In the case mentioned there were no adjacent viscera and when the ligature either gave way or cut through, no union taking place between the apposed mucous surfaces, the appendical orifice remained open. This method is useful, in fact is about the only practical one, in the condition quite frequently encountered where, by reason of the proximity of the abscess to the base of the appendix, the latter is infiltrated and inflamed and too brittle to hold sutures or stand inversion or manipulation. In other cases this method, taking less time than any other, is applicable where time is a consideration, especially in general peritonitis. In pus cases that must be drained, there is no use wasting time on sterilization with carbolic acid and alcohol, or with the cautery as the condition of the stump is no worse than that of its surroundings.

The method of peeling off a peritoneal cuff from the appendix extending for about a half inch from its base, ligation of the core within and stitching the cuff over the stump, was used early in the series. It is an improvement on the plain ligation method, as it provides a covering for the end of the stump thereby avoiding adhesions. Yet it is open to the theoretical objection that beyond the ligature there is left a portion of secreting mucous membrane if the ligature has not strangulated it, or a nodule of necrotic tissue if it has. In the former case it leaves a portion of the appendix unexcised, which may either drain its normal secretion into the cecum if the ligature has not caused an obliteration of its lumen, or if the lumen has been closed by the ligature may, by its own secretion, become the nidus of a septic or cystic sac. These objections are theoretical only. I have not had any unfavorable experience with it, but have discarded it for the method I use at present.

What I consider the ideal method in all cases where it is applicable, is inversion of the stump and a double suture to close the orifice and to cover in the raw edges and stump of the divided mesoappendix. What is left of the secreting surface of the appendix is inverted without any ligature into the cecum where it can never do any harm, and all the raw surfaces made during the operation are covered. The technique is carried out as follows: The mesentery is ligated, the ends of the ligature being left long for future use, and divided to the cecal junction. There will be seen two-minute bleeding arteries after this cut near the base of the appendix, which are easily controlled by temporary clamp or by twisting. The assistant now holds the appendix up vertically, with a blunt clamp which will not break it, while a purse-string suture of fine catgut is inserted in the serous and muscular layers of the cecum around and well outside the base of the appendix, beginning at the incision in its

mesentery, going all around, and ending at the same point. The stitch half way around opposite the mesentery is not drawn taut, but is allowed to form a free loop which is temporarily held in the eye of an artery clamp. The free ends on one side and the loop on the other serve as tractors by which the assistant raises the cecum at the base of the appendix, spreading the threads on either side so as to open out its lumen. A strip of gauze is laid around the base of the appendix under this tractor to protect the gut from any possible drip of fecal matter when the appendix is cut through which is now done proximal to a clamp placed about a third of an inch from the cecal attachment. With the assistant still holding up the tractor and spreading the cecal orifice by holding the threads apart, the end of the stump is caught with a small pointed clamp and easily inverted. While held in this position for a moment the assistant makes a tie in the free ends of the ligature and draws it taut, taking up the loop and tightening the purse string around the clamp which holds the inverted stump in place. The clamp is now loosened a bit, so as not to draw the stump out again with it, and removed, the suture is tied and the ends are left long. The instruments used in the section of the appendix are put away with the specimen, the gauze strip around the stump is carefully removed, and the parts are wiped with a wet sponge. The long ends of the mesenteric ligature and the purse-string suture are now used as tractors to raise up that portion of the cecum to be sutured. The purpose of this final suture is to cover in the raw edges of the mesentery and its stump and to reinforce the purse-string closure of the appendical orifice. A Czerny stitch is taken to one side of the base of the mesenteric stump, then inserted into the top of the stump proximal to the ligature, and again into the cecal wall on the opposite side. When this stitch is tied it buries the stump within the inverted cecal wall. The suture is continued as a running Czerny towards and well over the appendical orifice, taking in sufficient of the cecal wall on either side to cover it securely. This gives plenty of apposed serous surface for the desired union, leaves a smooth rounded cecum with no stump, and leaves no raw surfaces to form adhesions. This method is not new, but the one feature that, as far as I know is original with me, is the burying of the mesenteric stump by the suture that reinforces the purse string closure of the orifice.

All clean cases and the majority of suppurative ones may be handled in this way. But when the base of the appendix is involved and too infiltrated and brittle to hold the stitches, the method can not be used. The element of time may enter as a consideration in other cases. It does not take as long to do as to describe, yet it takes a little longer than the plain ligature, and where this little time is not of vital importance the ideal results more than compensate for it.

Decapsulation was done in fourteen cases. This procedure does not refer exactly to the treatment of the appendical orifice, but to the enucleation of the body of the appendix when it is bound down and involved in adhesions. Such cases are frequently encountered and it requires considerable time and patience to separate these adhesions. In doing this the gut may be injured or troublesome hemorrhage produced, either or both of which may prolong the operation more than the condition of the patient might justify. A simple method of overcoming these difficulties is to split the peritoneal coat of the appendix in any portion of its length available, separate it from the core composed of its inner layers, and follow up this core in either direction until the whole organ or that part involved in the adhesions is freed. Then the core, the only offending portion, is removed and the adherent capsule is allowed to remain *in situ*. When the appendix is removed in this way there is no necessity for the preliminary ligation of its mesentery, and if the incision in the peritoneal capsule is made opposite the mesenteric attachment there is no bleeding requiring attention. The closure of the appendical orifice may be by any one of the above mentioned methods which is most suitable to the conditions of the particular case. This method of decapsulation I have fully described with illustrative cases in the MEDICAL RECORD, April 15, 1905.

Four instances were encountered of spontaneous amputation of the appendix; that is, the appendix was found entirely separated from the cecum by its own destructive inflammation, and the cecal orifice closed. This might occur as the result of a concretion impacted near the cecal orifice, causing pressure necrosis and separation of the appendix, the orifice closing as a result of the active local inflammation. Stricture at or near the orifice of the appendix is found occasionally to be the cause of distention and inflammation of the appendix, and such a condition could also likely result in gangrene and spontaneous amputation with closure of the appendical orifice.

Drainage.—The manner in which drainage is used is a most important consideration in every case in which pus is encountered. It is here an indispensable measure, but should be used properly. Overdoing it may result in complicating the case and causing protracted convalescence. Not using it where indicated is likely to result in no convalescence at all. Where no pus is encountered the accepted procedure is to close the wound entirely. There are a few operators who are brave enough to close in some instances after having cleaned out the pus, trusting to the absorptive powers of the peritoneum to take care of what is left, or hoping if that fails that the resulting suppuration will find the line of least resistance along the course of the incision and so work its way to the outside world. This would probably be the result in the majority of the cases thus treated, but in a minority it would work the patient along to the next world. There is no justification for taking these chances, for just as good and quick results can be had with the insertion of a small rubber tissue drain between the stitches to be removed in twenty-four to forty-eight hours, which will not interfere with primary union in those cases in which absorption takes place and will give an outlet for the infective material in those in which the infection persists.

The abuse of drainage is in overdoing it. The old method of packing any amount of gauze into the belly is now obsolete, but as a rule too much drainage is yet used. The object to be attained in drainage of the abdominal cavity is to give sufficient outlet for any possible exudate, and at the same time to repair the abdominal wall, for the prevention of hernia, as perfectly as is consistent with the presence of efficient drains through it. It must be remembered that the abdomen is not a cavity with rigid walls, and that it is filled with more or less flaccid and movable viscera; that the walls and contents adapt themselves to

each other so that the cavity is always practically filled, leaving no dead spaces. When an abscess forms among the viscera and its contents are removed by operation the natural tendency is for its walls to collapse, the viscera occupying the space previously taken up by the abscess. This process is sometimes retarded by the rigidity and adhesions of the walls of an old abscess, but even here as the infiltration subsides after removal of the cause the walls very soon collapse and obliterate the cavity. All the drainage that is required in these circumstances is an outlet for the passage of the amount of new exudate thrown out, and sufficient for that purpose is a small "cigarette drain" or even a narrow slip of gutta-percha tissue from the site of the abscess out through the abdominal wall. There is no sense in packing a large or even small amount of gauze into the cavity, for that only prevents its collapse, affords a reservoir for the stagnation of pus, and by the irritation of its presence causes the continuation of the surrounding infiltration and aggravates the adhesions. On the other hand the presence of the small drain allows of the collapse of the cavity, leaves no space for the accumulation of pus, which is forced out as it is formed, and allows of speedy obliteration of the cavity by gradual union of its apposed walls.

The drain used in abscess cases consists of a strip of gutta-percha tissue folded into four to eight layers, an eighth to a half-inch wide. When more seems to be needed a "cigarette drain," a strip of gauze rolled loosely in gutta-percha tissue making a cigarette of about the diameter of a lead pencil or a little larger, is used. This passes from the abscess cavity, or from the deeper parts if adhesions have been broken, exposing uninfected peritoneum, out through the wound. The latter is closed up layer by layer, leaving a little extra space between the two stitches where the drain passes or omitting one stitch for it. Gauze should not be used directly in contact with the peritoneal surface except where necessary for the control of hemorrhage. It becomes adherent to the surface and draws the intestine out of place with it in its removal besides leaving a raw surface likely to form adhesions.

Fowler's position is always advantageous even in local abscess, for besides the reason that he gives for it in general peritonitis, gravitation of the exudate to the pelvis where it is less likely to be absorbed by the lymphatics, gravitation also forces the viscera into the pelvis and lower abdomen and helps thereby to close the cavity and force its contents out of the belly.

The drainage in subsequent dressings depends on the behavior of the case. It is removed in twenty-four to forty-eight hours, not to be replaced at all in some cases. Generally, though, where there has been considerable pus at the operation, it is safer to replace it, and especially where pus is found at the dressing should it be continued. A similar drain is used, but inserted not quite so deeply. Subsequent dressings are at intervals of one to two days, and the drain is made shorter each time the conditions justify. It is very exceptional when a larger drain has to be inserted. The less drainage used consistent with the requirements, the less the suppuration and the shorter the convalescence.

Mortality.—In the 147 cases there were 15 deaths. To apply this mortality rate to prognosis in general would be incorrect, as the mortality of clean cases, which should be nil, or even of local abscess cases, which should be low, is very different from that of general peritonitis cases which must be comparatively high. Another important element in prognosis are the pre-operative complications, which if present may prove the cause of death in spite of favorable progress of the local condition. Postoperative complications, naturally, cannot be reckoned with before operation, but the possibility of their occurrence must be kept in mind. Of the 60 clean cases one patient died. This was his second attack of appendicitis and he had, in addition, a severe influenza on account of which operation was delayed for some days. He developed a postoperative general peritonitis, cause unknown. The lowered vitality brought on by the influenza no doubt contributed toward the fatal end.

Of the 62 local abscess cases 4 patients died. One was a five-year old child with a bad pulse. very large abscess, and very septic, on which the operation seemed to have no effect, the sepsis progressing till death took place. The second had a pre-operative severe bronchitis, cyanosis, and bad pulse, and developed a postoperative pneumonia which took him off on the fourth day. The third was doing nicely for three weeks and almost well, when for some unknown reason he developed a general peritonitis and died. The fourth was a septic case with extensive abscess. He did well for six weeks, when he developed signs of abscess of the liver. Secondary operation, rib resection, and exploration of liver, was done but without benefit.

Of the 25 general peritonitis cases 10 patients died. In 8 of these death was due practically to a continuation of the general sepsis. Another one did well for more than a week, when abscess of the liver developed with pronounced jaundice. The tenth should hardly be put in this class as his peritonitis had passed the acute stage and gone into a condition of multiple circumscribed abscesses from which about two quarts of pus were evacuated. His death could not be charged directly to this condition, from which he might have recovered. had it not been for a secondary operation for fecal fistula. The fistula was due to injury of the gut in separating the dense adhesions between the intestines to afford an outlet to the abscesses among them.

240 East Broadway.

FILTRATION OF PUBLIC WATER SUPPLIES.*

By CASSIUS E. GILLETTE,

MAJOR OF ENGINEERS, U. S. ARMY.

The water supplies of cities are generally drawn from streams or lakes, both of which are always liable to contamination with disease-producing germs, especially of typhoid fever. Many supplies are drawn from rivers almost certain to be infected from the sewage of cities above, and many cities pump their own diluted sewage into their water reservoirs. Often large sums are spent to get a water supply from mountainous or sparsely settled regions, but immunity from typhoid is not thereby obtained. It is a noticeable fact that mountain districts, where only sparkling streams prevail, are often scourged with epidemics of typhoid. Maps accompanying the report of the census of 1890 indicate rather more typhoid in the country along clear streams in the Appalachian region than along the muddy streams of the Atlantic Coast plain, or the Mississippi Valley. This is probably partly due to

*Read at a meeting of the Medical Association of the Greater City of New York, February 12, 1906.

the fact that if a clear and pure stream happens to get contaminated the germs live much longer than they do in muddy streams or waters teeming with other bacteria. Hence, even a mountain water is unsafe as a supply unless the whole region is rigorously policed, which is practically impossible. Such a supply may be safe for many years and yet ultimately cause an epidemic. One typhoid case anywhere within the watershed may pollute the entire supply.

It would, therefore, appear that no source, subject to inflow surface water, is safe unless measures be taken to remove the dangerous bacteria before the water is used. Three methods of making such a removal exist in nature:

(1) Quiescence for a long time to permit the germs to die or settle to the bottom.

(2) Flow for long distances in streams bearing sand or silt. Such streams are constantly depositing their burden and eroding new material. This deposition seems to carry with it the bacteria and most of the decomposable matter. The Missouri river water, for example, after the mud and sand are settled, has remarkable keeping qualities, and is a good drinking water, except where taken near and below a city.

(3) The process of soaking into the ground, reappearing as springs or artesian wells which are usually of good water. However, springs in thickly settled, rocky regions are not certain to be safe. Shallow wells in towns or cities are extremely dangerous.

Artificial means of purifying large surface water supplies have generally been made in imitation of the first and the third of the above natural processes. Large reservoirs settle out both the mud and the bacteria. They are open to the objection that under certain conditions they develop growths that are disagreeable, if not injurious; that the accumulations in the bottom become very foul, and that their construction of a sufficient size is expensive and often impracticable.

Slow sand filtration doubtless started as an imitation of nature's way of purifying by soaking through the earth, although the process is really not exactly the same. This system is undoubtedly the most practicable and reliable method yet devised for general use with large water supplies. Its strong point is its certainty. Ignorance or negligence may lessen the output, but only wilful mismanagement will produce a dangerous product.

With certain muddy waters, however, the expense of operation becomes very great. In these cases many cities have adopted a system of mechanical filtration in which the mud is first coagulated by alum, or some equivalent, and then strained out with the bacteria by forcing the water rapidly through a coarse sand strainer, which is cleaned at intervals by mechanical means. This system requires careful and intelligent management, for the proper quantity of alum varies with the condition of the water, and a variable quantity of lime has also sometimes to be added to the water to produce good results. A more serious trouble results from the failure to add enough alum. Carlessness in this respect may permit the dangerous bacteria to go through the filter with little or no improvement in the water.

There is a widespread prejudice against the use of alum, based on the idea of its presence as such in the filtered water being injurious to health. There appears, however, to be no foundation for this. Careful management of mechanical filters will give good water. The danger lies in inattention.

Slow sand filtration consists in causing the water to sink slowly through a bed of clean sand, from one to three feet thick. Originally devised as a simple, natural strainer, it has been discovered that the action is more complicated and effective than mere straining. In the operation of a filter in the early stages the results are generally poor until the sediment and bacteria in the water, settling on the surface of the sand, have partly clogged the interstices and formed a thin gelatinous layer over the particles of sand forming the surface of the filter. This "schmutzdecke," as the Germans call it, undoubtedly constitutes the most essential part of the system. Its exact action is somewhat obscure in the present state of the art. It probably acts in some or all of the following ways:

(1) The coating of each particle of surface sand makes a finer strainer by diminishing the interstices. In this it is doubtless assisted by the deposited fine silt.

(2) After the film is once formed the other bacteria are caught by adhesion.

(3) The colony of bacteria on the surface may remove from the water part of the food supply or oxygen, or other substance necessary to the existence of those bacteria that pass into the sand below, and they die of starvation or for the lack of something necessary to their existence. The removal of oxygen in the filter is sometimes quite marked.

(4) The bacteria of the gelatinous layer may give off some substance that is toxic to those which pass into the depths of the sand and aid in their destruction. The writer has recently had a test made in one of the Philadelphia filters that indicates an increase in the carbonic acid content of the water. This may help cause the destruction of those bacteria that get through the surface or at least help prevent their multiplication in the sand or underdrains.

If such increase in carbonic acid should prove to be a general accompaniment of sand filters to any material extent, it may throw some light on several things, as for instance, the possible increase in hardness by the increased solution of lime from calcareous particles in the sand or the gravel. It is a generally observed fact that algæ grow more freely in water after it has been filtered than before. The increased carbonic acid may favor this vegetable growth. In this event it might be cheaper to lessen the carbonic acid by some simple process than to build expensive concrete covers for the filtered water reservoirs. The subject is worth investigating.

The above four methods seem to cover all the ways in which the filter can act, and they all probably contribute to the result.

That simple straining is an important part is indicated by the fact that in the Maignen system a quickly prepared slow sand filter is produced by adding to the fresh sand surface an artificial "schmutzdecke," composed of comminuted asbestos.

The filters in Washington are composed of very fine sand and the water is considerably purified by sedinemtation. No recognizable "schmutzdecke" is formed.

That the layer of bacteria is generally essential is shown by the fact that a second sand filtration of water does not improve it, but on the contrary generally adds to its bacterial content.

As the quickness with which the "schmutzdecke" is formed and its efficiency must depend somewhat upon the bacterial content of the applied water, it would seem unnecessary, or even inadvisable, for a city to go to the tremendous expense of bringing in a mountain supply to be filtered, if a reasonably

good supply could be obtained at a nearer point. The bacteria in the nearer supply, while they would injure it for direct use, would be harmless, or even advantageous, in a supply to be filtered.

This principle, however, should be applied with some limitations. It is not advisable for a city to filter water that is positively dangerous, as, for instance, to use a supply contaminated by its own sewage, but an ordinary river water, taken from a point not immediately below a large city, is generally plenty good enough for filtration and may be much more economical than a mountain supply, both from less first cost and better adaptation for filtering purposes.

Thus, in the writer's judgment, it requires other reasons than mere improvement in quality for the City of New York to go to the distant mountains for water to be filtered if a reasonably good supply can be obtained at less cost from the Hudson, at the point where the proposed conduit line crosses that stream. On the other hand, the present plans for Philadelphia contemplate filtering water from the Delaware, subject to present and ever-increasing contamination from the city's own sewage. This may be tolerated at present, but nothing should be done to prevent a future supply of reasonable good quality from above Trenton.

In the operation of slow sand filters, the filtration part itself is a comparatively simple matter, while the civil engineering of designing plants for economical operation is a quite complicated subject. Costs of land, of construction, of pumping to different elevations, of cleaning filters, sand renewals, etc., render any particular case a matter for most careful consideration and scientific treatment.

The cost of cleaning and operating is perhaps the most important element, to which not enough rigid investigation has yet been applied. After a filter has been in use a few days it is necessary to increase the pressure to force the water through the filter at the proper maximum rate. This is done by increasing the difference in level or head between the applied and effluent waters. This is generally called "loss of head." On account of necessary construction it is impracticable to increase this loss of head beyond a certain amount. When this is exhausted the filter must be put out of commission and the surface scraped off. The frequency of these scrapings, on which the cost of operation principally depends, is rapidly increased by unfavorable conditions of the applied water as to turbidity, bacterial content, or other qualities.

Two principal methods have been used to prepare the water for effective filtration, with a view to prolonging such period of operation, or "run," and of adding to the permissible daily rate, thereby increasing the output. These methods are sedimentation and preliminary filtration, or "scrubbing."

If water is kept quiescent in a reservoir for a few days it will, during unfavorable periods, improve the quality, so that with equally good results the runs of the filters may be materially lengthened and the rate increased. Similarly, various rough, rapid filters have been used to prepare the water.

Which is the best plan is, in the present state of knowledge, a matter of experiment for any particular water, and its determination greatly adds to the complexities of engineering design.

The writer has attempted to deduce, from the records in the Filtration Bureau in Philadelphia, what constitutes the best preliminary treatment of Schuylkill river water at that point; to determine by the records of the slow sand filters what conditions of the applied water have given the greatest runs and at the same time have been accompanied by good results.

There are three separate filter plants that have been treating this water for many months: Upper Roxboro, where the water is settled for about two weeks; Lower Roxboro, where it has a slight sedimentation and is treated by preliminary filters consisting of an upward flow through coke and a top layer of sponge clippings, and Belmont, cohere the water is used after a little sedimentation. Daily observations have been continuously recorded at each filter, showing turbidity and bacterial content for both applied and effluent waters, loss of head, and other elements of the problem.

Obviously the preparatory treatment should be directed to the production of such a water as will give a good effluent from the sand filter and at the same time produce the minimum increase in the daily loss of head, thereby prolonging the "run." It has generally been considered that such daily loss of head is caused entirely by the clogging of the sand filters with mud, aided perhaps by the bacterial jelly, and that the preliminary treatment should be directed simply to reduction of turbidity.

While the results obtained by following this idea have been fairly satisfactory, an analysis of the operation of the three plants above mentioned do not indicate any very striking connection between turbidity or bacterial content and loss of head.

Thus, take the run of a filter bed at Upper Roxboro from February 19 to May 13, 1905, a long run of 85 days (but at only about one-third the normal rate of three million gallons per acre per day). During the first thirty days the water was very clear; during the next thirty days quite muddy. The daily loss of head was about the same during the two periods. During the last twenty-five days the water cleared up considerably, but the daily loss of head was very much greater than during the earlier part of the run. During the first third and last third of the run the bacteria was low; during the middle third very high. Apparently after this filter had taken care of a certain quantity of mud it rapidly went out of commission, irrespective of what kind of water it received thereafter. At the same place the loss of head, during the summer of 1904 and during the spring of 1905, was less for high turbidities than for low. On the other hand, when the bacterial content was over 35,000 per cubic centimeter, the filters clogged much more rapidly than when under that figure. At this place, after two weeks' sedimentation, the turbidity and bacterial content are rather independent of each other. In general though, at these filters the clogging is more rapid with high turbidities than with low, but, as stated above, there are some rather remarkable exceptions to this.

At Belmont, taking the entire run of the filters since they were started, we find that on the average the loss of head caused by twenty-seven observations of a turbidity of 160 (silica standard) is actually less than the average caused by a turbidity of only 5. The average loss of head corresponding to waters of over 150 turbidity is not 50 per cent. greater than that caused by turbidities of less than 10.

The loss of head at this place was apparently little influenced by the numbers of bacteria present. At this place even the short sedimentation period seems to make the amount of turbidity and the bacterial content more independent of each other than in the raw river water.

In the river, while as a general proposition the numbers of bacteria are greater when the river is muddy, the two do not go hand in hand. Gener-

ally an increase in the turbidity, following a prolonged low stage, is accompanied by a marked rise in bacteria. This may fairly be attributed to the washing in of accumulated bacteria on shore and from small streams. The following floods are naturally less contaminated. The latter part, too, of a prolonged flood is not so contaminated as the first part, because the first washings have gone and the settling of part of the mud has carried down the bacteria and purified the water. In the winter, on the other hand, the bacteria will often rapidly increase while the water remains clear. This is probably due to a variety of causes. It is well known that bacteria rapidly increase in reservoirs in winter from multiplication. In the river this doubtless takes place also to some extent. Light rains or thawing snow may wash in abundant bacteria, with no disturbance of the frozen ground.

At Lower Roxboro, where the water is given a rough preliminary filtration, the water applied to the sand filters shows a closer relation between turbidity and bacteria than does the raw river water, and the daily loss of head seems to increase directly with each.

Comparing the advantages of preliminary filtration at Lower Roxboro with the two weeks' sedimentation at Upper Roxboro, the average daily loss of head is about double where the preliminary filters are used. But, as the rate at the latter place is about double the former, honors seem to be about even with the two methods. Preliminary filtration seems to give rather the better results in summer and sedimentation in the spring. In the fall and winter the difference is not marked.

The various elements of the problem for the Schuylkill water have been tabulated and plotted on a large variety of assumptions, but thus far about all that can be said is that in general the removal of the mud improves the water for filtration, partly by lessening the sediment, partly by removing excess of bacteria, or of certain classes of bacteria, and perhaps partly by the incidental improvement of the water in some other respect not yet determined.

The indications also are that the most economical preparatory treatment of this water is, for part of the year, by sedimentation, part of the year by both sedimentation and preliminary filtration, and occasionally to use the raw water direct.

It will be seen that where preliminary treatment is necessary, as it generally is, the subject of filtration becomes much more complex, especially as to the economics of engineering design. In the present state of knowledge experiment alone will show the best system for any particular case. As such experiments take time, it would be the part of wisdom for every municipality, drawing its supply from streams or lakes, to inaugurate small testing plants to determine the best way of purifying its water supply, even if such purification on a large scale is not contemplated in the immediate future.

PUBLIC WATER FILTRATION IN MASSACHUSETTS.*

BY CHARLES HARRINGTON, M.D.,
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THE fact that the State Board of Health of Massachusetts has for many years conducted, and is still carrying on, extensive and important investigations in the field of purification of water and sewage, at the Lawrence Experiment Station, and that it has the general oversight of all but certain specified inland waters of the State and acts as an advisory body in all matters of public water supply and sewage disposal for all the cities and towns, has given rise to a somewhat prevalent idea that Massachusetts, as a whole, is largely supplied with filtered water. This impression is, however, decidedly erroneous, for within the Commonwealth there are but five communities which filter their water, and but one of these, Lawrence, is a place of any considerable size. The public water supplies of the State are, in general, very efficiently guarded against pollution at their sources, and hence, with few exceptions, are not in need of purification before distribution. Of the five supplies that are filtered, but one is so treated because of danger in the use of untreated water.

The town of Athol employs a "mechanical" filter, with alum as a coagulant, because its water supply contains an abundance of Anabaena, from which arise disagreeable taste and odors. The town of Reading uses the same kind of apparatus on account of an excessive amount of iron. The towns of Milford and Hopedale have a supply in common: partly surface water, which has decided color, and, according to the amount of overgrowth of Anabaena and other organisms, disagreeable taste and odors; and partly ground water. For the reduction of color, odors, and taste, this supply is subjected to filtration through a sand filter-bed. In none of these towns has there ever been any large amount of typhoid fever, and, in consequence, a comparison of the death rates from this disease, before and after the installation of the filters, yields no results. In Hopedale, for example, the total deaths from typhoid fever, in the twenty years ending in 1904, were but 8 in number; in Milford the number was 58; in Athol, 31; in Reading, 16.

In the case of Lawrence, which is a manufacturing city, having at present a population of 69,939 (census of 1905), the conditions are different. Lawrence is situated nine miles below the city of Lowell, on the Merrimack river, into which the latter city discharges its sewage, and from which the former draws its drinking water, about a fifth of a mile upstream. The high death rate from typhoid fever in Lowell and Lawrence, in comparison with that of other cities of Massachusetts, was investigated in 1890 by the State Board of Health, and it was demonstrated that the large incidence of the disease in Lowell was due to infection of the river by cities and towns above, and that the greater incidence in Lawrence was due to the further infection of the river by the sewage of Lowell; whereupon the board, which, shortly after its reorganization in 1886, had established an experiment station at Lawrence for the study of purification of water and sewage, took up the problem of a system of filtration which would remove all pathogenic organisms and supply an adequate supply of purified water to meet the demands of the city. The result of the work was an experimental sand filter which produced practical sterility, filtering at the rate of two millions of gallons per acre daily; and, in 1891, the city was advised to install such a filter of proper size to meet its needs. In the following year the city government undertook the construction of the filter under the direction of the board. Without going into the details of construction, let it suffice to say that in September, 1893, a gravity sand filter-bed of two and one-half acres was completed at an expense of about $65,000, capable of furnishing five million gallons of water per day. The chemical changes in the water were noted from the beginning of the application of the river water to

*Read at a meeting of the Medical Association of the Greater City of New York, February 12, 1906.

the filter, and were very marked. The diminution in the number of bacteria in the effluent was also observed from day to day. In the first three days this amounted to but 25 per cent.; in the next three days it was 70 per cent.; and after three weeks it amounted to 98 per cent.; and then, as time went on, it went to 99.3 per cent. Eight months after its use was begun, the effluent contained but 1.7 per cent. of the original number of bacteria in the applied water, and the number was still further reduced during passage through the mains and service pipes, so that the water as delivered at the tap in the City Hall contained less than 1 per cent. of the original number.

The results of the change in the character of the water on the health of Lawrence have been very striking. In the first eight months, the typhoid mortality dropped 60 per cent., and of the 40 per cent. of the former mortality, nearly half was due to the use of unfiltered water taken by mill operatives directly from the canals, in spite of posted warnings at all faucets in the mills in which such water could be drawn for washing purposes.

Prior to the installation and use of the filter the typhoid death rates per 10,000 population were as follows: 1890, 13.44; 1891, 11.94; 1892, 10.52. The filter was completed in September, 1893, and was immediately placed in service. The rate for that year was 7.96, and subsequently as follows: 1894, 4.94; 1895, 3.45; 1896, 2.59; 1897, 2.50; 1898, 2.41; 1899, 3.48 (the increase due to imperfect working); 1900, 2.08; 1901, 2.03; 1902, 2.29; 1903, 3.44 (the increase due, in part at least, to infected milk); 1904, 1.61.

As an instance of the protection afforded by filtration may be cited the fact that, in spite of the occurrence of an outbreak of typhoid fever in Lowell, between August and December, 1903, in the course of which no fewer than 231 cases were reported, and, notwithstanding the amount of infective material which must have been poured into the river in the sewage of that city, not a single case of the disease occurred in Lawrence which could be traced to the use of the filtered river water.

Illustrative of the bacterial efficiency of the filter may be cited the following figures:

Monthly bacterial counts of the river water at the intake during 1900 showed from 3,200 bacteria per cubic centimeter (May) to 19,200 (September). The effluent showed less than 100 bacteria in every month but January (110) and as low as 17 and 18 (August and September). The highest number in the water at the tap in City Hall was 83 (January), and the lowest was 12 (August).

In 1901, the number in the river water ranged from 1,300 to 8,900; in the effluent, 7 to 61; at the tap, 6 to 34.

In 1903, the river water averaged 12,900, and the effluent 32, showing a bacterial efficiency of 99.7 per cent.

The management of the beds requires, of course, careful supervision, but the amount of actual labor is comparatively slight, each of the twenty-five beds requiring, on an average, not more than sixteen scrapings annually.

Slaughter of the Innocents.—According to a statement made by Prof. H. W. Wiley, of the chemistry bureau of the Department of Agriculture, more than a million infants have been sacrificed to the various concoctions known as soothing syrups and pain killers, and more than twice that number have been killed by impure milk.

Glycosuria in Pregnancy and the Puerperal State.—Bini says that glycosuria in the pregnant and puerperal state is not constant, and is even quite rare. It is a true glycosuria, since out of twenty-nine cases examined by the author, it was found in two cases only that lactose appeared in the urine, while in the puerperal patients there was glucose and lactose; the glucose disappeared rapidly, the lactose disappeared after a few days in those who were not suckling their children, while in those that were nursing it remained for some time. The author interprets this glycosuria as of spontaneous alimentary nature, from alteration of metabolism generally dependent on pregnant intoxication directly, and collaterally from all such causes as dyscrasia, alimentary troubles, etc.—*La Riforma Medica.*

Juvenile Glaucoma Simplex Associated with Myasthenia Gastrica et Intestinalis.—John Green summarizes the history of a case of this nature: A young woman free from hereditary ocular taint and afflicted with chronic constipation, which began in earliest childhood, was attacked shortly after puberty with glaucoma simplex. In one eye the failure of vision was progressive, and resulted in blindness. Near work was found to be impossible on account of ocular pain and blurring. Finally the vision of the fellow eye began to fail and she sought relief. Treatment with myotics over a period of several months failed to check the progress of the disease. General treatment directed against the constipation was instituted. Improvement in the general condition was accompanied by a like amelioration in vision, in the ability to use the eyes, and later by a widening of the field. The writer says that inferences drawn from the study of a single case are admittedly of little value. He states that we must be content in this case with noting the facts, which to his mind, were at least highly suggestive of an immediate etiological relationship between the constitutional and ocular condition. Constipation has been, indeed, accorded a place among the possible contributing constitutional causes of glaucoma (Treacher Collins); but in this case the assumption of a more intimate relationship has seemed not unjustified. As to treatment, the writer thinks that ophthalmic surgeons are pretty well agreed that in the acute and chronic congestive types of this affection operation is imperatively indicated. He again calls attention to the lesson which this case enforces, namely, that certain of the problems which confront the specialist can be satisfactorily solved only by collaboration between the specialist and his brother in general medicine.—*St. Louis Courier of Medicine.*

Pseudokousma.—Frank H. Koyle defines pseudokousma as that condition in which there is false perception of pitch. It is to be differentiated from diplacusis. The writer gives a brief review of the functions of the various tympanic functions concerned in hearing, laying particular stress on the tympanic cavity and mastoid cells in their capacity as resonance chambers. He shows how these functions are influenced by structural changes involving the sound-conducting and auxiliary apparatus. He cites two cases, with details of the history and treatment of each, together with a series of tuning-fork experiments. In one of these cases the immediate cause of the false hearing is ascribed to a rupture of some or all of the fibers of the stapedius muscle. In the absence of the stapedian curb, there is permitted an exaggerated pressure from without inward, and a condensation of the intratympanic air, resulting in a profound disturbance of the labyrinthine elements. The compressed sound-conducting fluid of the labyrinth is immediately responsible for the altered character of certain sounds, the muscle lesion being the causative factor. A relative inhibition of energy in the molecular impact takes place as a result of continued abnormal propulsion in a spirally compressed fluid, the increase in pressure causing a deviation from the curvilinear direction normal to the fluid contents of the structure. The writer states that it would seem that the degree of variation for a given tone in the scale will depend upon the degree of compression existing in certain area in a corresponding turn of the cochlea.—*Buffalo Medical Journal.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

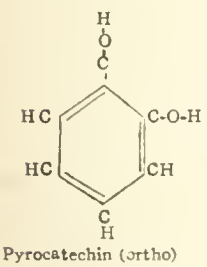
WM. WOOD & CO., 51 FIFTH AVENUE.

New York, March 24, 1906.

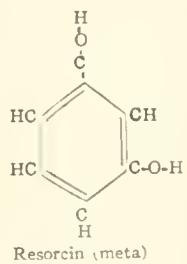
DIFFERENCES IN THE ACTION OF ORTHO-, META-, AND PARA-COMBINATIONS.

INVESTIGATIONS have proven that there exists a difference in the toxicity of ortho-, meta-, and para-compounds, and that as a rule the para-compounds are more powerful poisons than either of the other two. There are exceptions to this rule, as will be seen later. Why this should be, no one has as yet explained, nor shall we attempt to explain it here. We merely wish to call attention to these mysterious differences and to give some illustrations. As in the case of tissue selection and the effect that the weight of a molecule has when applied therapeutically, much remains for the present at least inexplicable, but that these several factors do very materially influence the physiological and pathological action of remedial agents is proven. In order that the reader may more clearly comprehend the meaning of the terms ortho, meta, and para, as applied to chemical products, it will be well to call attention to the theoretical molecule, represented by the following figure:

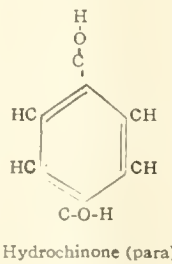
The figures refer to the different positions, or play of affinity. The benzene molecule is represented by a hexagon figure with CH at each angle, having thus the formula C_6H_6. When a sign is attached without a connecting line to any angle of the hexagon, it indicates that the body represented is substituted for the hydrogen at that point and the product thus becomes an ortho-, meta-, or para-compound, according as it enters at either of these positions. A substitution at 1 : 2 will mean an ortho, 1 : 3 a meta, and 1 : 4 a para-compound. Let us illustrate this in detail thus:



Pyrocatechin (ortho)



Resorcin (meta)



Hydrochinone (para)

Now, wherein do these several products differ physically, physiologically, or pathologically?

Pyrocatechin, the ortho-compound, occurs in flat crystals or plates, readily soluble in water, alcohol, and ether; it reduces silver salts in the cold and Fehling's solution on warming; if made alkaline, it absorbs oxygen and turns green; it has weak acid properties. Contrary to the rule above mentioned, this is the most toxic of the series. The fatal dose per kilo of body weight is 0.06 gm., of hydrochinone 0.1 gm., and of resorcin 1 gm. per kilo. Resorcin, the meta-compound, is found in colorless crystals melting at 100° C., boiling at 276° C.; very soluble in water, alcohol, and ether, with a sweetish taste. It is a powerful antiseptic and antifermentative. Hydrochinone, the para combination, is moderately soluble in water, easily so in alcohol and ether, occurs in six-sided prisms, fuses at 169° C. It is antipyretic and antidiarrheal in doses of 5 to 8 grains.

Again, we have orthocresol, a crystalline solid, fusing at 31° C. and boiling at 185° C. This exerts a paralyzing effect upon the heart in small doses. It irritates the nervous substance of the inhibitory apparatus and in larger doses it is a powerful tissue poison. Metacresol is a liquid boiling at 195° C. This is but a faint heart poison, does not affect the inhibitory apparatus, but acts rather upon the vasomotor system. Paracresol, a solid fusing at 36° C. and boiling at 198° C. This is also a cardiac poison, and acts secondarily upon the nerves. All these cresols tend to paralyze the sensory and motor systems.

There are exceptions to the rule that the para-compounds are more poisonous than either the ortho- or meta-, as was noted in comparing the toxicity of the dihydroxybenzenes (pyrocatechin, resorcin, and hydrochinone). Another illustration is furnished by the fact that para- and meta-oxybenzoic acids are both inactive, while the ortho-compound, known as salicylic acid, exerts an energetic action.

In the nitrophenols the para-compound is most poisonous, the meta- next, and the ortho- the least. All of these substances kill by paralyzing the heart; they exert no influence upon body temperature. The point of action and mode of action are the same, despite difference in the positions of the groups. One difference exists, however; the ortho- and meta-compounds irritate the vagus, while the para-compound weakens the action of the vagus.

The nitroanilins show a decrease of toxicity from para- to meta- and ortho-compounds. There are symptoms of anilin poisoning, formation of methemoglobin in the blood, and marked cardiac paralysis. All show an irritant effect upon the peripheral distribution of the vagus. The para-compound is ten times as poisonous as the ortho-combination.

The three isomeric toluidins are alike in their physiological action. All act destructively upon the red blood coloring matter from which they form methemoglobin. They paralyze the cord and cause death by arrest of respiration. Injected into the jugular vein of dogs, the fatal dose of orthotoluidin is 0.208 gm. per kilo body weight, that of meta-toluidin is 0.125 gm., and that of the para-combination, 0.1 gm. A striking illustration in the difference in these products dependent upon the substitution position is furnished in the benzoates of sulfinide.

The orthobenzoate of sulfinide, known to commerce as saccharin, is five hundred times as sweet as sugar, while the para-compound is tasteless.

Chemists are familiar with these differences and are thus enabled to build up at will products which exercise a predetermined physiological and pathological effect.

THE PATHOGENESIS OF PULMONARY TUBERCULOSIS.

When the discovery of the tubercle bacillus was announced it was generally thought that the question of tuberculous infection was solved and that the entrance of the germ was sufficient to produce a tuberculous inflammation in any given organ. It was soon demonstrated, however, that this view could not be accepted without certain modifications, particularly as regards the prèdisposition exhibited by the pulmonary apices, and that a number of other factors must therefore be concerned in the process. During the period when the inhalation theory was in vogue, the predilection of the apices of the lungs to tuberculous inflammation was first ascribed to certain peculiarities in the branching of the bronchial tree, and later on to a localized respiratory insufficiency. It was then asserted that the tissues of this region were less resistant to infection, because their blood supply was poorer than that of the rest of the lung, owing to the action of the force of gravity. This seemed disproved by the fact that in certain susceptible animals whose thoracic contents were maintained in a position more or less like those of man, such as the monkey, the kangaroo, and the giraffe, no such predisposition existed. All endeavors to solve this question by a resort to anatomical principles has thus far failed in their object. The interesting suggestion is now made by L. Hofbauer in the *Wiener klinische Wochenschrift*, No. 6, 1906, that a physiological rather than an anatomical explanation must be sought for in accounting for the difference in the pathological relations between the apical and the basal portions of the lungs.

Under ordinary circumstances, quiet, normal respiration in the human subject is accomplished in great part by the lower portions of the thorax, and even here the movements of the diaphragm play the most important rôle. The upper segments take very little part in this action, and the respiratory function, as has been proved by numerous observers, is exercised to a large extent, at least, by the lower thoracic segments. This difference in the activities between these two portions of the lung not only interferes with complete and thorough aeration of all the pulmonary alveoli, but the resulting disturbance in the equality of the intrapulmonic pressure likewise produces an unfavorable effect on the lymphatic circulation of these organs. There is a law in physics which states that the pressure in any closed space with communicating chambers is always equal in all parts of the same, and this would apparently contradict the idea that all portions of the pulmonary cavity are not equally aerated by the excursions of the diaphragm. Numerous experimental observations have shown, however, that variations in pressure starting from some particular portion of the lung do not progress very much beyond their point of origin. This is probably due to the manner in which the component branches of the bronchial tree radiate and also to the position of the connective-tissue septa.

There is every reason to believe, therefore, that the functional differences of the various thoracic segments agree very closely with similar differences in the corresponding portions of the lung. And so, in passing from below upwards, we find that during ordinary quiet breathing the respiratory movements of the thoracic wall are steadily diminishing in extent until a minimum degree is reached at the apex. This fact is sufficient, according to Hofbauer, to account for the circumstance that the basal are better aerated and nourished than the apical portions of the lungs, and so a greater resistance is interposed by the former to the penetration and growth of the tubercle bacillus, which simply settles where conditions are more favorable to its development. Before admitting the truth of this claim, one is tempted to ask why this same process of resistance should not be exercised against other pulmonary infections, such as the ordinary lobar pneumonia, whose favorite initial site is in the lower lobes of the lungs.

The Rectal Injection of Ether Vapor.

The sequelæ, oftentimes dangerous as well as unpleasant, which attend the administration of ether as an anesthetic, have prompted the introduction and use of numerous adjuvants and substitutes. The respiratory apparatus is most often affected by the drug as the result of the usual manner of oral administration, and the complications to be dealt with include respiratory disturbances, depression of the cardiac reflexes, resulting from irritation of the laryngeal or bronchial mucous membranes, pneumonic processes, etc. Attempts have been made in great number to overcome or at least to diminish these effects of ether by the preliminary administration of nitrous oxide, ethyl chloride, etc. Another suggestion in an entirely different vein was made as long ago as 1847 by the well-known surgeon, Pirogoff, in Paris. He proposed, in place of the inhalation of ether, its introduction in vapor form into the rectum for the purpose of inducing general narcosis. The method did not meet with any enthusiastic reception, but from time to time it is revived or is suggested independently by some one who has not heard of the previous attempts in this direction. Some fifteen years ago the method was revived in Denmark, and was received with favor by surgeons all over the world. It fell again into desuetude, and now a Russian military surgeon, Dr. Krugiline (*Der Frauenarzt*, December 15, 1905), writes that he has used it altogether in 43 cases requiring operations of moderate severity and extent, such as harelip, bone tuberculosis, hernia, lupus, etc. Two conditions must be fulfilled in order to insure the success of this procedure: the colon must be absolutely empty and no fluid ether must be permitted to enter the rectum, as the mucosa of the latter is particularly sensitive. This can readily enough be avoided by the use of a properly constructed apparatus. If thorough catharsis has not been obtained the entrance of ether into the rectum will produce unpleasant symptoms, especially an annoying tenesmus. Ordinarily, however, with an empty colon, sensation is lost in from two to three minutes, and the odor of ether may then be detected

in the breath. Narcosis is soon complete, the pupils become contracted to a marked extent and do not react to light, but as a general rule the corneal reflex remains. The writer is quite enthusiastic regarding the advantages attendant upon this method, the narcosis being produced rapidly and the usual respiratory difficulties being avoided; he also claims that there is no period of excitement, and no reactionary symptoms are noted. For all ordinary cases the narcosis produced by this method was found to be sufficiently deep, but if not, the intermittent inhalation of a few drops of chloroform was enough to make it so. Although particularly adapted for operations upon the head and neck, Dr. Krugiline thinks that the method may be used with equal advantage in other cases, the only apparent contraindication being furnished by intestinal inflammations and ulcerations, and peritonitis. It is not likely, however, that this suggestion of the rectal administration of ether will be taken up with any great enthusiasm so long as the generation of surgeons who once tried it and abandoned it is still living.

Yaws and Syphilis.

The relationship between these two diseases has been the subject of numerous discussions among physicians interested in tropical medicines, some claiming that yaws is merely a form of syphilis, others that it is quite distinct. The accumulating observations of recent years seem to show, however, that the two diseases are different and this distinction seems to be supported by the geographical distribution, the clinical symptoms, and the histopathology of these conditions. As pointed out by Castellani (*Journal of Tropical Medicine*, January 1, 1906), who has made a special study of the disease in Ceylon, syphilis is pandemic, while yaws is localized in certain parts of the tropics, the nearest point to our own shores being in the West Indies. There are other contrasts, moreover, between yaws and syphilis which stamp them as distinct diseases. The primary sore, if it may be so called, of yaws is generally extragenital; the eruption is of the papular variety and may proliferate into a papillomatous growth; there is an extremely well marked pruritus. In yaws, moreover, sequelæ comparable to tertiary syphilis or parasyphilitic conditions are absent or extremely rare, neither is this disease hereditary or congenital. The study of the bacteriology of the disease brought forth some interesting developments. All sorts of bacteria were found, including cocci, sarcinæ, and bacilli, but in a majority of the cases Castellani isolated an organism which could not be distinguished from *Spirochæta pallida*. This observation has also been confirmed by Wellmann and by Powell in other cases. If future investigations prove that yaws is a spirochete disease, its germ will have to be distinguished biologically from the spirochete of syphilis. An analogous situation may be traced in the morphological similarity between the leprocy bacillus, the tubercle bacillus, and many other acid-fast bacteria; yet leprosy is not considered to be tuberculosis. It is also practically impossible to distinguish morphologically the surra from the nagana trypanosome, but the two diseases are nevertheless different. Castellani has found that antisyphilitic treatment is effective also in yaws, yet it is asserted that some cases may recover spontaneously. In all stages of yaws, however, he has found large doses of potassium iodide more effective than mercury. This cannot be used as an argument for stamping the disease as syphilitic in character, for we have another instance of the beneficial effect of the iodides in a disease quite different from syphilis, namely, actinomycosis.

The Effect of Changes of Temperature on the Viscosity of the Blood.

It is an interesting question whether it is possible to alter the viscosity of the circulating blood by changing the temperature of the surrounding medium. R. Burton-Opiz (*Journal of Experimental Medicine*, Vol. VIII, No. 1), who had previously studied the effect on the viscosity of defibrinated blood, has now directed his attention to solving the behavior of "living" blood in this respect and has made a number of experiments in dogs for this purpose. The effects of warm and cold water baths and of hot dry air were tested. As regards the effects of the bath, it was found that the viscosity of the blood reacted very sharply toward changes in the temperature of the surrounding medium, it being decreased by warm and increased by cold water baths. The greatest change took place during the first ten or fifteen minutes of the bath, and the effects were equally pronounced with cold as with hot water. The specific gravity of the blood pursued a course parallel to that noted for the viscosity, warm water baths producing a decrease and cold water an increase in the specific gravity, the changes being very pronounced in both cases. Hot air baths did not render the blood less viscous, as one might suppose, but rather more so. Comparing them with the warm water baths it was seen that the two produced directly antagonistic results, although the former was less powerful. The specific gravity of the blood became greater during the hot air baths and there seemed to be a direct relationship between this and the viscosity. These results constitute an interesting addition to our knowledge of the theories of physical therapeutics.

News of the Week.

Seaside Park Bill.—On March 15 the Assembly Cities Committee framed a substitute bill for the Tompkins seaside park bill which was discussed in the Medical Record of March 3. The bill authorizes the Board of Estimate to appropriate $1,500,000 for the purpose. Care of the park is devolved upon the Park Department. With the approval of the Sinking Fund Commission the Board of Estimate is also to have the power to withdraw from the jurisdiction of the Park Department such portion of the park as it deems proper for a period of not exceeding twenty-five years, and to allow its use by any charitable or benevolent society that will erect a convalescent hospital thereon. No insane or persons affected with a contagious disease are to be received and maintained in any hospital in the park. Provision is also made to enable the Board of Estimate whenever it has appropriated a sum sufficient for the erection and maintenance of a hospital in the park, to withdraw from the jurisdiction of the Park Department any portion of the park it may deem proper and confer jurisdiction over the same on the Board of Health or the trustees of Bellevue and allied hospitals, or the Commissioner of Charities.

Dr. H. N. Heinemann, formerly of New York, who has been ill, is now, his friends will be glad to learn, fully restored to health and has resumed his practice in Nauheim.

Dr. Thomas Watts Eden of London was the guest of honor at a dinner given by Dr. J. Clifton Edgar at the University Club on Wednesday evening of this week. There were about sixty guests, including many prominent obstetricians of this and neighboring cities, and other medical men.

Patent Medicine Formulæ.—At a hearing before the Senate Committee at Albany to consider the Stevens bill, which was described in these columns last week, several amendments were inserted. The chief amendment was one making it a felony to sell opium or cocaine without a physician's prescription, and a felony also for a physician to prescribe it unless it shall be for purely medicinal use. Much stress was laid by those appearing before the committee on the dangers of the indiscriminate sale of opium and cocaine preparations, and this amendment was the result.

Yellow Fever.—The New Orleans Board of Health has announced that a patient supposed to have yellow fever is under treatment in the Charity Hospital. This is the first suspicious case observed since last autumn. No one has yet been able to claim the prize offers of $5 for the first person to bring a live stegomyia mosquito, $3 for the second, and $2 for the third. People have come from all about bringing all sorts of insects, even water bugs, in bottles, but the offer is still open, as no genuine stegomyia has been found.

The Smoke Nuisance.—Seventy-five warning notices have been or are being issued by the Board of Health to firms whose smokestacks have been emitting smoke of improper nature. It is promised that if when a reinspection is made five days after the receipt of the orders the nuisance is still unabated, the Board of Health will use the authority vested in it to compel obedience.

Immunity from Smallpox.—Chief Medical Inspector of the Chicago Health Department, Dr. Heman Spalding, is credited with saying that the certain efficacy of vaccination in preventing smallpox accounts for Chicago's immunity from the disease this winter. This is apparent, for the disease is all about in neighboring towns and cities, as it was in each of the past seven years, when the disease found lodgment, but it has gained no foothold in Chicago. Continuous efforts to secure the vaccination of everybody in Chicago have been made by the department, and with gratifying success. Chicago is said to be now one of the best vaccinated cities in the United States. There are still enough unvaccinated, however, to make it necessary to be aggressive and vigilant in enforcing the vaccination ordinance, lest the unprotected increase in number. Dr. Spalding urges that there be no abatement in vaccination, because smallpox is not killing by the hundred. Laxity in the matter of vaccination is sure to reap its harvest, as it has many times in the past. To continue free from smallpox, the people of Chicago must be kept vaccinated.

Philadelphia Clinic for the Home Treatment of Consumption.—A clinic has been founded in Philadelphia for the purpose of combating tuberculosis among the poor, not only by direct medical treatment but also by supervision of the living quarters, instruction in hygiene and sanitation, etc. Daily clinics will be held between three and four every afternoon, except Sundays, at 519 South Fifteenth street, for the treatment of all chest troubles in patients who are able to walk. Patients of the same class who are unable to walk, and who are not under medical care, will, by giving notice to the clinic, be visited by a physician, and by a nurse if necessary. Medical services and nursing are free, but a nominal charge for medicine is made to those who are able to pay. The territory to which the work will be confined at first is divided, and each district will be assigned to a physician and nurse. The members of the medical staff are: Dr. Thomas J. Mays, Medical Director, Dr. John D. McLeon, Dr. Ralph H. Spangler, Dr. J. P. Bethel, Dr. Andrew D. Carter, and Dr. Arthur C. Wolfe.

The Lisbon Congress.—The executive committee of the Fifteenth International Medical Congress announces that a considerable number of rooms with one or more beds have been reserved for medical visitors at prices ranging from six to ten francs per bed. Pension rates are fifteen francs a day for each person. Accommodations will be assigned in the order of the reception of applications by Mr. Manuel José da Silva, Palacio Foz, Praça dos Restauradores, Lisbon. Arrangements have been made with the French, German, Italian, Spanish, and Portuguese railroads through which those attending the Congress will be given a reduction of 50 per cent. in fares, and will be permitted to take different routes in going to and returning from Lisbon.

Bequests to Charity.—By the will of the late Edward T. Dobbins of Philadelphia, the sum of $3,000 is bequeathed to the Woman's Medical College of Pennsylvania, for the endowment of a free bed; an additional sum of $3,000 to the same institution to pay the tuition for the regular course of instruction in medicine of a young woman who can pass the necessary examination, preference being given to a graduate trained nurse; $5,000 to the Burlington County Hospital; $5,000 to the Children's Hospital; $5,000 to the Home for Incurables; $2,500 to maintain a scholarship at the Philadelphia College of Pharmacy to be conferred upon a New Jersey apprentice passing the highest preliminary examination; $10,000 to Christ Church Hospital, and $10,000 to the Hospital of the Women's Medical College.

Hospitals vs. Libraries.—Twenty-one hundred citizens of Mansfield, Ohio, have signed petitions requesting that the Carnegie library building, now in course of erection, be made into a city hospital, and that the ten thousand dollars already advanced by Mr. Carnegie be returned to him unless he should be willing to have the building used as a hospital. The petitioners say that the city needs a hospital more than it needs a library.—*Lancet-Clinic.*

Gifts to St. Luke's Hospital of Chicago.—Mr. J. Ogden Armour has given $25,000 toward the $140,000 required for the new George Smith addition to St. Luke's Hospital (Chicago). Of the required amount it is said that $80,000 is at present in the treasury.

Dr. Robert T. Morris on March 14 delivered a lecture on "A Naturalist's Camping Trip to Hudson Bay," before the Linnæan Society of New York City at the American Museum of Natural History.

Louisville Academy of Medicine.—At the meeting of the Louisville Academy of Medicine, which took place March 7, 1906, the following officers were elected: *President*, Dr. J. T. Windell; *Vice-President*, Dr. D. R. Jacob; *Secretary*, Dr. O. H. Kelsall; *Treasurer*, Dr. Gavin Fulton. The guest of honor was Dr. Lewis S. McMurtry, the president of the American Medical Association.

Cincinnati Academy of Medicine.—At the meeting of this organization held on March 5 the following officers were elected: *President,* Dr. John E. Greiwe; *Vice-Presidents,* Dr. Henry Bettman and Ellen McCarthy; *Secretary,* Dr. Stephen Cone; *Treasurer,* Dr. A. G. Henry.

Fire at the General Memorial Hospital.—The catching fire of a supply of hay in the ambulance stable of the General Memorial Hospital, New York, one day last week made it necessary to go through the fire drill and send in an alarm. The hospital employees had the blaze under control before the firemen arrived, and but little damage was done.

Attack in a Hospital.—As the result of a recent railroad accident twenty-one injured men are being cared for at the Westmoreland Hospital, Greensburg, Pa. Some of their fellow laborers, Italians and Austrians, living in barracks at Rodebaugh, became enraged because no visitors were allowed to see the patients, and assembling in force stormed the hospital for several hours. Attempts were made to force the doors and many missiles were hurled. The local police managed to hold the doors till the State constabulary could be summoned.

Tuberculosis Exhibition.—The University Settlement, the College Settlement, and the Recreation Rooms and Settlement on March 14 opened their joint tuberculosis exhibition at the Recreation Rooms, 186 Chrystie street. On the different evenings of the exhibition, which lasted four days, popular addresses were made in English, Italian, and Yiddish.

Royal Medical and Chirurgical Society.—At the meeting of this society held on March 1 Mr. J. Warrington Howard was elected president for the ensuing year.

Bubonic Plague is said to have reappeared in New South Wales, and five cases have been reported from Sydney.

The Sand Cure.—From Toledo, O., comes the story of a man of 88 who is youthful enough to break in yearling colts, and considers that his good health is largely due to occasional teaspoonful doses of well-washed sand. Fifteen years ago he developed some gastric affection which did not yield to medical aid, and in his efforts at self-treatment he finally hit upon the idea of taking the sand. The measure was promptly followed by an abatement of the symptoms and has continued to do so whenever he feels that a recurrence of the difficulty is imminent.

The Poison of the Borgias.—According to a newspaper dispatch several young Russian women who are students at the university of Turin are being kept under surveillance by emissaries of the Russian secret police because they are suspected of being engaged in attempting to discover the secret of the *aqua tofana,* the mysterious poison said to have been employed with such success by the Borgias. On the occasion of a rather serious illness suffered by the Tsar some years ago it was alleged that he had been poisoned by means of a pair of gloves impregnated with one of the old Italian poisons, the composition of which had been rediscovered by Russian revolutionaries by search among the old manuscripts in which the Biblioteca Nazionale at Turin is especially rich.

To Remove State Tax on Virginia Doctors.—Dr. Powell's bill removing the State license tax of $10 a year now imposed on practising physicians in Virginia was passed by the House on March 8 by a vote of 52 to 29.

Operating Under Difficulties.—In consequence of a fire which did $15,000 worth of damage to the building, seventeen patients in the Trull Hospital in Biddeford, Maine, had to be removed to places of safety. When the fire was discovered an operation was under way on a female patient, and as the operating room was in danger of being invaded by the flames the patient was carried to the ground floor where the surgical procedure was completed. It is stated that owing to the leakage of water through the ceiling from the rooms above it was necessary to have umbrellas held over the operating table in order to protect the wound.

Absinthe in Belgium.—Several efforts have already been made to abolish the use of absinthe in Belgium, but the opposition of the manufacturers and retailers involved has always been too strong. A short time ago, however, a prohibitory bill passed both houses of the legislature, and from now on the importation, manufacture, transport, sale or storing for sale of absinthe or of any substitute for it is illegal. The penalties are substantial.

Obituary Notes.—Dr. William T. Bacon of Hartford, Conn., died on March 17 at the age of sixty years. He was well known as a specialist in diseases of the eye and ear.

Dr. Leopold Hirschmann of New York City, died on March 15 at the age of thirty-five years. Dr. Hirschmann was born in Germany but had lived in New York for sixteen years. He was a graduate of Cornell University Medical School.

Dr. Lawrence J. Gerold, assistant surgeon of the State Soldiers' Home Hospital at Bath, N. Y., died March 15 of heart disease. He was forty-one years old and was formerly assistant physician at the State Hospital, Kings Park, L. I.

Dr. John P. Henry of Jersey City, died on March 16 in a private hospital at Paterson, N. J. His illness was due to overwork. Dr. Henry was born in 1858 and was graduated from the College of Physicians and Surgeons in New York in 1881. Three years later he was appointed a city physician of Jersey City and served as a member of the Board of Health for a number of years.

Dr. Peter V. P. Hewlett of Newark, N. J., died March 13 at the age og fifty-nine years. He was graduated from the College of Physicians and Surgeons in New York in 1871 and began to practise in Newark the following year. He was county physician of Essex County for several years and was prominent in the management of the City Hospital. About a year ago he became infected in the course of an operation and was obliged to give up practice on this account.

Dr. Everett Hasbrouck of Brooklyn, died on March 16 in his sixty-sixth year. He was a graduate of the Long Island College Hospital and of the New York Homeopathic Hospital. He had practised in the Windsor Terrace district for over twenty years.

Dr. Henry T. Calkins of Petoskey, Mich., died on March 5 at the age of sixty-six years. Dr. Calkins was born in Germantown, N. Y., and received his medical diploma in Louisville, Ky., in 1860. After two years of service in the army as assistant surgeon he located in Grand Rapids but removed to Petoskey in 1878, since which time he had occupied many public positions.

Dr. William H. McCormick of Cumberland, Md., died on March 6 at the age of eighty years. He was born in Fayette County, Penn., and was graduated from the Jefferson Medical College of Philadelphia in 1849. In 1863 he located in Cumberland, and since that time had filled many professional and public positions. He was one of the founders of the old Alleghany County Medical Association and was one of its presidents; and was twice president of the Jefferson Medical College Alumni Association. He retired from active practice about ten years ago.

Dr. Jewett Williams, Jr., Adrian, Mich., died on March 9 after an illness of several weeks which had its origin in an injury to the pelvis caused by a blow from the crank of his automobile. He was graduated from the Detroit Medical College in 1890 and in 1895 took a course in the New York Postgraduate Hospital. Dr. Williams was forty-three years of age.

Dr. S. R. Hewitt of Dubuque, Ia., died on March 5 of heart failure at the age of seventy-six years. He was graduated from the Rush Medical College in Chicago and had practised in Floyd County since 1859.

Dr. J. M. Selfridge of Oakland, Cal., died on March 3 at the age of eighty-two years. He was born in New York State, but after completing his medical education went to California in 1852 where he practised until 1856. He then went to Philadelphia for a year of postgraduate study, and returned to California, where he had practised ever since. He was twice president of the Homeopathic Society of California and was attending physician to the State Institution for the Deaf, Dumb, and Blind from 1872 to 1878.

Dr. Mabel Wells, formerly of Monticello, Ark., died on March 3 in Wellesley, Mass. She was graduated from the medical department of Johns Hopkins University and was thirty-two years old.

Dr. L. T. Holland of Los Angeles, Cal., died on March 6 at the age of sixty-three years. Dr. Holland was graduated from the Missouri Medical College and had practised in California about twenty years. He served for a number of years as coroner and as a member of the Board of Health.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

GASTRIC SURGERY—INTESTINAL CASES—OSTEOARTHRITIS IN DISGUISE—X-RAYS AT CAMBRIDGE—TO HONOR THE DISCOVERER OF COAL-TAR COLORS—DEFECTIVES—CARE OF TEETH.

London, March 2, 1906.

Gastric surgery has been very prominent of late, and I have reported the expressed views of several of its most able exponents. Now we have the Hunterian lectures for this year at the Royal College of Surgeons devoted to the subject, the professor being Mr. Herbert J. Paterson, who is one of the surgical staff of the Temperance Hospital. It is impossible to take note of the various conditions and surgical procedures discussed in this course, and many of them have had a place in my former letters. I will, therefore, confine myself to "Hour-glass Stomach," which Mr. Paterson treated with much acumen. The condition, first accurately described by Morgagni, may be present to a great degree and give little indication on the exterior surface of the stomach. In one case, the lecturer said, there was only slight puckering, but internally an annular stricture admitted only the tip of his little finger. He supported the view of Mayo, Robson, and Moynihan, that the congenital variety has probably no existence in nearly all recorded cases, ulceration or its consequences having been found. No case has been recorded in a fetus. Some so-called congenital cases may be explained by an incident related: At a postmortem an apparently typical specimen of hour-glass stomach was found, and by an oversight was not put into a hardening reagent. On examining it next day, Mr. Paterson found all trace of constriction vanished, and presumably it was only a muscular contraction persisting after death. Had it been put into the hardening solution, "doubtless I should have presented it before you to-day as a typical example of congenital hour-glass stomach."

As to treatment, the lecturer had collected ninety-two operations for non-malignant hour-glass stomach, and ascertained the after-results in sixty-one out of the seventy-six patients who survived the operation. The several procedures had been: (1) Gastroplasty (in some cases with resection of the ulcer); (2) gastroenterostomy; (3) gastrojejunostomy; (4) gastroduodenostomy; (5) dilatation. Combined operations have sometimes been required and carried out. The importance of examining the whole stomach from the esophagus to the duodenum was emphasized by reference to two recorded cases in which the pyloric pouch was mistaken for the whole stomach. In some cases two constrictions existed, dividing the stomach into three pouches (the trifid stomach). Sometimes pyloric stenosis complicates the case, and if then gastroplasty only is performed a further operation may be necessary, as in one recorded case. Of the ninety-two cases collected by the lecturer, sixteen died of the operation and seventy-six recovered. Of the fatal cases, some were worn out by prolonged pain and vomiting. In three the pyloric pouch was mistaken for the whole stomach and gastrojejunostomy performed on the pyloric side of the constriction. In two, death occurred from septic peritonitis, in one from perforation of another ulcer, and one died from hematemesis a month after operation. These and other statistics were considered at length and set out in tabular form, the conclusions arrived at being that: Gastroplasty is the simplest plan, but is open to the same objection as pyloroplasty for stenosis of the pylorus, viz., frequent relapses. In at least 25 per cent. no relief followed or there was relapse later, especially when there was active ulceration at the time of operation. It was pointed out that this operation is not a preventive of ulceration, nor does it modify predisposing conditions. Further, adhesions are often present and impair motility, and keep up gastric stasis, leading to hyperchlorhydria. The same criticisms apply to gastrostomy, from which 30 per cent. either got no relief or relapsed. It was therefore suggested as advisable, when either of the preceding operations were performed, to do a gastrojejunostomy at the same time. Only two of the patients on whom this last was performed had recurrence of symptoms, and one of these was due to coexistent pyloric stenosis, while not one out of eight patients on whom the double operation was performed had had so far any sign of relapse. Possibly anastomizing a loop of jejunum to both the cardiac and pyloric pouches would be a simpler plan, and that does not necessitate cutting the diseased area. Whatever details may be modified, it would seem that gastrojejunostomy must form part of the method adopted. In hour-glass stomach, as in so many gastric disorders, that is our sheet anchor.

Intestinal cases occupied the Clinical Society on Friday. Mr. Sherrin first related three unusual cases of obstruction. One was a man of thirty-one, who had a stricture at the junction of the jejunum and ileum. Enterostomy, followed by enterectomy three weeks afterward, led to recovery. The second case was in a girl of thirteen, caused by left duodenal hernia and reduced seven hours after onset of symptoms. She recovered. Only ten similar cases have been recorded, six of them fatal. The third case was volvulus of the cecum in a man of thirty-one, operated on seventeen hours after onset of symptoms. The cecum was gangrenous, and resection was performed, with anastomosis of ileum to ascending colon. These cases seem as rare as they are interesting.

Mr. Hutchinson, Jr., had lately seen volvulus with great laxity of the mesentery, under which the cecum had passed and was found near the spleen. The patient, a young man, recovered.

Mr. Raymond Johnson referred to a case in which a twisted and distended cecum passed under the small intestine. He untwisted and aspirated, but the man (aged 49) died within twelve hours.

Mr. Spencer related a fatal case of twisted cecum in an old man. It was found near the spleen.

Mr. Barker mentioned a case he had published, in which the small intestine had twisted round a gastroenterostomy union. He thought duodenal hernia more frequent than usually supposed.

The next contribution was by Mr. H. W. Carson on two cases of appendicitis associated with oxyuris vermicularis. The first was in a woman of nineteen, seized suddenly,

brought to the hospital the next day, with temperature of 103, tenderness, etc. The appendix was removed and an oxyuris found. The mucous membrane was inflamed, but not ulcerated. In the second case, a woman of twenty-four, the temperature on admission was 100.6°, but pain and other symptoms more severe. In the appendix three worms were found. In neither case was there a history of thread-worms, and none had been seen in the motions since. Mr. Carson referred to Dr. Still's paper on two hundred necropsies of children under twelve, in which the oxyuris had been found in the appendix twenty-five times without symptoms. Worms had been reported in the appendix after removal thirteen times. He thought it more reasonable to believe they caused the appendicitis than that their presence was a mere coincidence. The president (Mr. Clutton) thought otherwise, as did Mr. Hutchinson Jr. The worms were rare, compared with the frequency of appendicitis.

Abscess of appendix with severe hemorrhages, in a woman of thirty-six, was the subject of the next communication, made by Mr. J. D. Malcolm. On the third and sixth days after evacuation of a foul abscess, which was drained, the bleedings occurred, the second producing collapse and unconsciousness. The wound was opened and much clot removed. The appendix was not found, the cavity was packed, and healed by granulation. Some recorded cases were referred to. The complication was attributed to sloughing induced by microbes in the bowel, and compared to secondary hemorrhage in preantiseptic days.

Mr. Clutton related a case in which continuous oozing occurred for fourteen days, starting on the fifth day after operation. It was not an abscess case. He thought it curious that secondary hemorrhage was so rare in appendix cases.

Mr. Spencer suggested as a reason that the hemorrhage was due to a special organism, Klein's *Streptococcus hemorrhagius*, in which he still believed.

Mr. Raymond Johnson had seen alarming hemorrhage in such a case in a boy of seventeen. The external iliac artery had been ulcerated and had to be ligated.

Mr. Seymonds many years ago saw death from this accident.

Mr. Hutchinson, Jr., quoted a series of cases (published in the *Bulletin de la Société d'Anatomie*) in which this accident preceded the operation. Many cases were fatal. He had seen one on the ninth day after operation. He suggested some might occur from the ligature on the meso-appendix slipping.

Mr. Wallis advocated the use of strong antiseptic gauze, but some surgeons dissented.

"Osteoarthritis in Disguise" was the title of a paper at the Æsculapian Society, by Mr. P. L. Daniel, which he illustrated by numerous skiagrams. Among the disguises in question he named sciatica, hallux vulgus, flatfoot, internal derangement of the knee joint, loose cartilages, bunions, lumbago, and all degenerative changes in joints and the surrounding tissues. An extensive list, you will say! A suffering doctor assures me the disease is quite capable of as many or more disguises. Mr. Daniel held that any toxemia might set up a joint affection, and if any joint were injured or inflamed, it the more easily suffered from any toxin. Skiagrams almost always showed some joint affection in sciatica, though no disease of the nerve had been found. Flatfoot was associated with change in the small joints of the tarsus, and so is bunion, for which he recommended passive exercise. Lumbago, he said, often resulted from affection of the sacroiliac or vertebral joints. Massage and slapping the back relieved by separating adhesions.

At the invitation of the professors in Cambridge University, Dr. Walsham inaugurated *x*-ray work with a lecture and demonstration with lantern slides from skiagrams, of the clinical value of this method of investigation. The most recent forms of apparatus were described, particular stress being laid on the importance of the exact measurement of both the quantity and quality of the rays emitted from a given tube. The splendid installation used for the lecture had been presented by Dr. R. C. Brown of Preston to the committee for the study of special diseases, the value of whose gift was acknowledged by Professors Allbutt and Woodhead as having put the committee in a position to begin *x*-ray work at once.

The Lord Mayor presided on Monday at a meeting to inaugurate a fund to honor Dr. W. H. Perkin, who fifty years ago, when only eighteen years of age, in the course of a research respecting quinine, discovered the dye-stuff known as "mauve." His discovery was the beginning of the great coal-tar color industry. Dr. Perkin had not himself capital to develop this industry, and English business men were as careless as usual of scientific discoveries, the ultimate result being that the invention passed to Germany and is producing millions a year. Now England proposes to present Dr. Perkin with a portrait to keep for his life and then to revert to the nation, to have a bust executed for the Chemical Society, and to establish a "Perkin Research Fund." Rather a feeble as well as a belated recognition—is it not?

Dr. John Macpherson, lunacy commissioner, Edinburgh, assured the commission on the feeble-minded that the administration of the lunacy act in Scotland was admirable, only needing attention to bring the deficit under proper care. Observation wards such as those in Glasgow should be established in all large centers and all cases in which there was any doubt sent to them to be watched. For the morally, though not markedly mentally insane, village asylums for various terms might be utilized. Parish councils should take charge of all neglected imbecile children. A wider recognition of insane conduct would bring inebriates, spendthrifts, and chronic delinquents under control.

Dr. Macdonald, superintendent Dorset Asylum, advocated the necessity of preventing reproduction by degenerates, and Mr. Bund, chairman of Worcester County Council, would provide homes in which the promiscuous multiplication of the deficient could not occur.

What with one sanitary organization and another the public is getting plenty of advice. At the Institute of Hygiene Dr. G. Norman Meachen has been lecturing on the mouth and teeth. He remarked on the discrimination of taste by the sides and tip of the tongue, its relation to smell and so on. Considering that only 14 per cent. of school children were reported by the committee of the British Dental Association as having good sets of teeth, free from decay, he felt there was need for inquiry into the causes. Neglect of the teeth in childhood was the most fertile source of dental caries. To protect them against the inroads of the one hundred or more species of germs found in the mouth nothing is more effective than mechanical friction with the too-neglected toothbrush.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

THE ROYAL FAMILY—ACTION OF HORSE SERUM—A CANCER CIRCULAR—SKODA'S CENTENARY—AN UNUSUAL PUPILLARY CONDITION—EMPHYSEMA FOLLOWING MEASLES.

VIENNA, January 18, 1906.

OUR readers have probably learned from the daily press that the Austrian Royal Family have lately suffered severely from sickness. The Archduke Otto, whose chronic malady has for several years required prolonged courses of treatment, has been suffering from a perichondritis of the larynx of so grave a nature that tracheotomy became necessary on account of the danger of suffocation. The Archduke stood the operation well and is now on the road to recovery. His son, Archduke Karl, at one time heir presumptive to the throne, recently while skating was the victim of an unlucky accident which resulted in a fracture of both bones of the leg. The injury was examined under the *x*-rays and it was found that the fractured ends were in good position and without splintering, so that a good prognosis has been given.

Dr. Emil Körmörczi experimented with horse serum in treating erysipelas in Prof. Rona's clinic. As a result of these observations Körmörczi continued his investigations by injecting large amounts of the horse serum and reached the conclusion that when given in large quantities it is capable of producing pathological symptoms. Severe chills are caused, followed by an elevation of temperature lasting ten or twelve days; the patient's general condition is poor, the body weight falls, the glands and the spleen become swollen, and long persisting and obstinate diarrheas are observed. If the horse serum is used for therapeutic purposes it is important not to administer it in too large amounts. It is important to use only concentrated serum in order that small doses may be sufficient.

The Medical Association has distributed among all the physicians of Austria a circular intended to aid in the combat against cancer. The circular was drawn up by a committee of the society, appointed for the study of carcinoma. It calls attention to the fact that cancer is curable in most cases and that it can be definitely cured when taken at a stage when it is still a purely local disease. At the present time the most reliable method of treatment consists in the early and radical application of surgical measures. The circular also states that most cases of malignant disease do not reach the operator's hand until the disease is in so advanced a stage that the prospect of a radical cure is greatly diminished. While it is true that in many instances this delay is the fault of the patient, it cannot be denied that cancers often come to operation too late, owing to injudicious advice on the part of the medical attendant. Then follows a detailed account of the symptoms of beginning carcinoma as they are likely to be encountered by the practitioner. The satisfactory results attending the distribution among mid-

wives of a similar circular are also spoken of. It is stated that while before the appearance of this general caution 54 per cent. of the midwives consulted by patients acted incorrectly in either attempting to treat the women themselves or in not sending them promptly to the physician, after distribution of the leaflet of instructions this occurred in only seven instances. It may also be noted that the committee which induced the Medical Association to publish this warning to physicians is composed of the most prominent teachers of the University faculty and of practitioners of recognized ability.

On December 10 the Viennese medical world celebrated the day on which the inimitable clinician Skoda was born, one hundred years ago. Skoda, although he pursued his studies under the greatest hardships and met with much opposition in endeavoring to popularize the methods of percussion and auscultation, finally succeeded in having the correctness of his views universally recognized and caused Vienna in the years following 1838 to become the center of scientific medical study. His courses of lectures attained a world-wide reputation and attracted listeners from all parts of the world. Skoda died in 1881, of calcification and aneurysm of the aorta.

Dr. Schmeichler has reported an unusual pupillary condition. A twenty-year-old tinsmith three months previously fell from a ladder, and in addition to other injuries sustained a contused wound of the right temple, and cerebral concussion. The further course of his illness was not known, but on entering the room it was at once noticed that the left pupil was greatly dilated. As the man stated that he saw nothing with one eye it was assumed that he was blind on the left side, but this was found not to be the case, for on bringing the patient to the window both pupils became equal. On testing each pupil separately it was found that direct light thrown on the right pupil produced no reaction in either eye; on exposing the left pupil to light it contracted actively and there was a moderate consensual contraction of the right pupil. This remarkable phenomenon was explained on the use of the ophthalmoscope, which revealed well marked atrophy on the right side. The conditions present may be easily understood if in addition one assumes the existence of a congenital dilatation of the left pupil. Under ordinary conditions of illumination the left pupil was larger than the right, but in a bright light the left pupil contracted strongly while the right remained fixed, thus causing both to appear of equal size. The pupillary examination even without the ophthalmoscope showed that the cause of the blindness must be on the peripheral side of the optic chiasm, otherwise no consensual reaction of the right pupil would be possible.

Dr. Swoboda has described the case of a three year old girl suffering from subcutaneous emphysema following measles. The child was rather weakly, weighing only six kg., had a tuberculous family history, and was extremely rachitic. Seven days after the onset of the measles it showed marked swelling of the neck. This soon became extreme and spread to the rest of the body; the eyelids were puffed up to such a degree that for a week the child was unable to open them; percussion everywhere elicited tympanitic resonance and on palpation crepitation was felt. Placed in a bath tub the child floated like a cork on the surface of the water. The swelling subsided thirteen days later; on *x*-ray examination numerous tuberculous foci were detected in the lungs and it is likely that these lesions played some part in the production of the emphysema. The condition might be explained by assuming the rupture of dilated alveoli or cavities, permitting the escape of air into the interalveolar tissue from which point it spread to the hylus of the lung and into the mediastinal connective tissue; or superficial alveoli or cavities may have ruptured and the air may have entered the pleural cavity from these. Several similar cases have been reported in the literature.

The Employment of Oxygen in Surgical Infections.—M. H. Wohlgemuth communicates the good results which he has obtained from the employment of oxygen in the treatment of whitlow, furuncle, anthrax, and phlegmon. Thanks to repeated injections of oxygen, the writer has been able to arrest or shorten the evolution of the infection, and in every case he has been able to limit the suppuration. He has also avoided the necessity of large incisions. Thus the deforming scars so common after operations in such affections are prevented. The only inconvenience attaching to these injections of oxygen is their painfulness.—*La Presse Médicale.*

Progress of Medical Science.

Boston Medical and Surgical Journal, March 15, 1906.

The Open-air Treatment of Tuberculosis.—W. A. Griffin notes that in making patients take the open-air treatment there are certain points upon which stress should be laid. One is that the more nearly the treatment is kept for the entire twenty-four hours, the better. It is not sufficient that the patient should spend the day in the open air, but the windows should be open all night. There are various forms of shelter, but the best, other things being equal, is the simplest. The only necessity is that it shall keep out the wet. Another point is that cold weather is no hindrance to staying out, provided there is plenty of covering over the body, so that it does not feel chilled at any time. Plenty of woolen should be worn next to the body. Old-fashioned felt shoes make the best covering for the feet. At night the bed should be made up with a heavy blanket over the mattress. A blanket may be laid loosely between the sheets so that the body may be rolled in it. As to diet, Griffin does not believe in "stuffing" patients. Health is no more promoted, often, by forced than by moderate feeding, while the latter avoids the dangers of overloading the digestive powers. The giving of eggs has been overdone. Exercise must be carefully regulated. It is still a moot question whether pulmonary gymnastics shall be advised or not. Doubtless, where there is rapidly advancing disease, it is not well to prescribe deep breathing, especially if there is a pleurisy. Indeed, nature gives us the cue in many cases and by pain limits the respiration. In other cases, however, there can be no objection to moderately deep breathing, for by it the air of the lungs is better aerated, and certainly we cannot expect to get rid of diseased tissue in the presence of poor blood. It has been recently proven, also, that the secretion of the bronchial tubes is gotten rid of not so much by the action of the ciliated epithelium as by the pumplike action of the bronchial muscles.

Bilateral Torsion of the Fallopian Tubes.—M. Storer gives the history of one case, finding some sixty or more similar cases recorded since Bland Sutton first called attention to the condition in 1890. Torsion without strangulation is excessively rare. When it does occur, the symptoms are, as a rule, very alarming and are those of any acute internal arrest of circulation; sudden pain, almost always nausea and vomiting, faintness, complete arrest of bowels and often paralysis of the bladder, combined with local tenderness and increase in the size of the tumor from venous congestion. In the thirty-seven cases, however, in which the diagnosis before operation is stated, there was but one instance in which it is claimed that the exact condition was actually recognized. The correct diagnosis can probably be made only when it is known that a hydrosalpinx has been present previous to the advent of acute symptoms, and that that hydrosalpinx has undergone a rapid increase in size, especially if a previously pelvic tube has become abdominal. The causes of torsion are as yet but matters of theory. In a few cases the sudden stabbing pain has followed some muscular exertion. Certain conditions, such as a tubal tumor in the distal portion of the tube and its nonadherence, undoubtedly favor torsion. The tumor must be fairly high in the pelvis. The number of turns in the torsion varies from one-half a turn to five and a half turns. Torsion occurred thirty times on the right side, nineteen on the left, and was bilateral in four. The preference for the right side may be due to the anatomically greater play of the right mesosalpinx. The ovary is given as involved in eighteen cases, and not, in twenty-two. Apparently this complication increases the severity of symptoms. Immediate operation is the only treatment. Of the sixty-two cases enumerated, all but two recovered.

New York Medical Journal, March 10, 1906.

Balsam of Peru in Castor Oil as a Surgical Dressing.—E. V. Hubbard refers to the literature of this subject and declares that this combination of remedies deserves a greater popularity than it receives. He summarizes his personal experience in certain clinical cases, as felons, paronychia, deep burns, abscess, operation for tuberculous glands, etc. Iodoform in the balsam-oil mixture is disguised up to the strength of ten grains to the ounce. The balsam-oil proportions are half a dram of the former to one ounce of the latter. The dressing is valueless in eczematous affections and is no protection against erysipelas infection.

Diagnostic and Prognostic Value of an Examination of the Throat in Pulmonary Tuberculosis.—W. G. B. Harland notes that in many cases of pulmonary tuberculosis there are considerable wasting of the mucosa of the upper air tract and changes in the quality of the secretion, which becomes of a distinctly seromucous character. As a result, we have constantly recurring colds, post-nasal dropping, hoarseness, and cough. Such a combination of symptoms should

always lead to a rigid examination of the chest, observation of temperature, and bodily weight. The usual laryngeal changes in this disease are enumerated by the author, who considers it probable that the ordinary breath sounds are altered by the disease in the larynx, thus masking sometimes the local signs present in a diseased lung. As it is probable that macroscopic tuberculous lesions of the larynx do not ordinarily occur until after the general and local resisting powers have been partly destroyed, the appearance of laryngeal tuberculosis becomes, to a certain extent, an index of the seriousness of the patient's condition. The presence of any laryngeal involvements makes the prognosis less favorable, though not necessarily hopeless. Statistics have been collected to show that certain sorts of lesions portend less dangerous consequences than others, and that when certain parts of the larynx are affected the prognosis is more hopeful than when other parts are involved. Thus of those with simple infiltration twice as many improved as when deep ulceration was present, and of those without involvement of epiglottis or arytenoids three times as many improved as when these structures were involved. It is needless to say that difficulty in swallowing in tuberculous cases is always a most serious complication.

Diarrhea and Its Diagnostic Significance.—J. P. Tuttle says that the 101 varieties of diarrhea may all be classified under one of six types, viz., simple, serous, lienteric, toxic, mucopurulent, and reflex. The first variety is more a habit than a disease, and occurs in large eaters and drinkers, especially of beer and dry wines. The patients often have anal excoriations from repeated cleansing of the parts, occasionally hemorrhoids. Serous diarrhea generally results from severe nervous disturbance or exhaustion. It often occurs in the crises of acute diseases and occasionally as an intestinal crisis in tabes. It is at times vicarious, as in nephritis, and is often associated with relaxation of the sphincters. Lienteric diarrhea presents particles of undigested food in the passages. Analysis will show whether these particles are nitrogenous or carbohydrates; if the former, the trouble is doubtless in the stomach; if the latter, in the bowel. This variety may point to serious organic lesions. Toxic diarrhea results from the ingestion of infectious material, organic, inorganic or bacterial. It begins with nausea and vomiting, running into loose, fecal stools, later serous, and if protracted containing mucus and blood. Most of the foregoing are caused by cleansing the tract with oil or salines. Mucopurulent diarrhea is not, according to the author, a nemesis, but the expression of a hypertrophic cotant due to infection or autointoxication and may be due to ulcerations high up in the small bowel. Such cases demand instrumental examination. Reflex diarrhea may come from painful affections in any part of the body. Finally, we may have the diarrhea of impaction and that form which may come from the lodgment of a foreign body. The course to be followed in such cases is obvious.

Practical Results Accomplished with Radiant Energy.—Samuel Stern notes that the *x*-ray and high-frequency spark are of extreme value in the cure of all forms of epithelioma. They are of great value in the treatment of other malignant growths, in their ability to stop pain and prolong life, but should be used only in nonoperative cases, or in conjunction with surgical measures. In internal diseases they are of value in leukemia, Hodgkins' disease, various forms of chronic tuberculous conditions, in subacute or chronic rheumatism, lumbago, sciatica, or other forms of nerve affections. In skin diseases, the *x*-ray will show practically 100 per cent. cures in sycosis of the parasitic or nonparasitic type. Almost as great percentage in eczema of all varieties, and in psoriasis, but in the latter there is the usual chance of recurrence. In acne vulgaris, in conjunction with other treatment, it is of great value, but of not very much value in acne rosacea. It is very valuable in favus, trichophytosis, keloid, various forms of lichen, mycosis fungoides, folliculitis decalvans, and hypertrichosis. The *x*-ray, or the high-frequency spark, or the combination of both, is very valuable in the treatment of all forms of prurigenous affections due to any cause. The high-frequency spark accomplishes a great deal in the treatment of lupus erythematosus, lupus vulgaris, tuberculosis vera cutis, in the destruction of all forms of nævi, verrucæ, molluscum contagiosum, and other forms of superficial growths. It is of decided benefit in alopecia due to anemic condition of the scalp, and in alopecia areata.

American Medicine, March 17, 1906.

Without Mosqnitos There Can Be No Yellow Fever.—James Carroll argues that the logical conclusion from the investigations which have been made would seem to be that the parasite of yellow fever belongs to the animal kingdom for the following reasons: (1) It is absolutely necessary for its continued existence that it pass alternately through man and the mosquito, and its parasitic existence in these hosts is obligatory. (2) The fact that a period of about two weeks must elapse before the contaminated mosquito is capable of infecting, points to a definite cycle of development in that insect. (3) The limitation of its development cycle to mosquitos of a single genus and to a single vertebrate conforms to a natural zoologic law and does not agree with our present knowledge of the life history of bacteria. (4) The effects of climate and temperature upon *Stegomyia* and upon the rate of development of yellow fever parasite within the body of the insect are exactly the same as the effects of the same conditions upon the anopheles mosquito and the malarial parasite.

Gonorrhea in Women.—Palmer Findley says that anatomic recognition of gonorrhea of the urogenital tract may be impossible, particularly in cases of long standing. For this reason the diagnosis must occasionally rest upon the finding of an inflammatory lesion in one or more portions of the tract and associating these lesions with a history of exposure to gonorrheal infection. A diagnosis that admits of no doubt can only be based upon the finding of the gonococcus in the secretions or tissues. This is by no means easy in the chronic stages when there is little or no secretion, and the organism, which at best is recognized with difficulty in the tissues, is found in small numbers or may be wholly wanting. The small size of gonococci and their scarcity in the tissues of chronic cases may necessitate the microscopic examination of a large number of sections. This involves rare skill in technique, not only in the preparation of the sections but in the differentiation of the gonococcus from other cellular structures. Grave mistakes have been made in diagnosis by assuming that no infection exists because the usual complaints of an acute infection do not appear in the history. Since the cure of gonorrhea is so unsatisfactory, and when deeply seated is usually only accomplished by a mutilating operation which too often unsexes the woman, prophylaxis becomes the paramount issue in the management of gonorrhea of women. Unfortunately it is not alone the laity which is in need of education in this respect; the profession is often guilty of being too hasty in pronouncing a cure and in giving sanction to marriage and to the resumption of the marital relation. Untimely interference with uterine and urethral applications in the early stage of the disease too often causes an extension of the infection and makes a serious lesion of what might otherwise have been a self-limiting disease.

Actinomycosis Limited to the Urinary Tract.—E. MacD. Stanton records a case in which an actinomycotic lesion was limited to the kidney and bladder. The case was clinically one of cystitis and pyelonephritis, the actinomycotic character of the kidney lesions not being recognized during life or at the time of autopsy, but being discovered only upon histologic examination of the kidney and bladder.

Journal of the American Medical Association, March 17, 1906.

Some Possible Causes of Emaciation.—The points emphasized by R. C. Cabot are that cell growth, cell multiplication, and cell nutrition are profoundly influenced by age, by sexual influences, by internal secretions, by sleep and exercise, and by a multiplicity of hereditary individual and psychic factors not yet clearly distinguished. He first calls attention to the changes that take place with age, the gradual or fairly rapid loss of weight often observed as a part of the aging process in persons past middle life, which is often associated with arteriosclerosis, possibly as a result, possibly as a concomitant effect of some third unknown factor. With some exceptions, the rule is that during the years in which arteriosclerosis is prone to develop there is a loss of weight, usually gradual, sometimes rather alarming. The very rapid increase of weight often seen in growing children and after wasting diseases, is not the direct result of abundant food, but must be referred to a heightened energy of cell growth. The sexual influences are also factors in nutrition, as strongly suggested by the changes observed following parturition, the menopause, and castration of animals. The importance of internal secretions in maintaining or perverting nutrition is shown in the emaciation of Graves' disease, the increased weight in myxedema, and possibly by the local hypertrophies of Paget's disease and acromegaly. Lastly the possible decisive influence of sleep on weight is suggested by the rapid emaciation sometimes occurring in aneurism cases, when insomnia is produced by pain while the appetite remains excellent.

Autolysis.—P. A. Levene reviews the known facts in regard to tissue disintegration in the animal body. He shows that while proteid combustion in the normal organism is apparently different from the proteid disintegration of autolysis, the latter process does occur under normal conditions in the body. In health the autolytic disintegration is only such as is required to free the system from waste material and possibly to prepare its products for more rapid combustion. In conditions of defective nutrition, and in

certain conditions of disease, an exaggerated tendency to tissue self-destruction exists, and this is most remarked when the tissues are under the influence of protoplasmic poisons. In such cases, all the tissues are affected more or less, but there are conditions in which self-digestion of special organs takes place physiologically, as in the atrophy of the thymus or the involution of the puerperal uterus. The softening of tumors is also brought about by the same process. It has also been shown that autolysis may be one of the means resorted to by the organism to elaborate protective substances, such as antitoxins. Levene sums up the results of the study as follows: "Autolysis, then, is the process by which dead tissue is not only prevented from becoming a burden to the organism, but, in addition, becomes converted into useful fuel material. By the aid of these processes, diseased tissues, pathological formations, and new growths are removed and replaced by normal healthy tissues. The organism resorts to this process also for the elaboration of protective substances against bacteria and bacterial toxins. It still remains to be demonstrated whether or not in the course of autolysis enzymes are formed which are concerned in producing that energy which makes all animal functions possible."

Irrigation of the Abdominal Cavity.—J. W. Vaughan considers general abdominal irrigation after operations as absolutely contraindicated from a bacteriological point of view. A general peritonitis, understanding by this one involving all parts of the abdominal cavity, is, he thinks, an impossible condition unless brought about by some such method. We should try, he says, to aid nature in forming protective adhesions by the use of sterile gauze drains, following these as the exudate dries, by the glass tube, insuring free drainage. He believes that the disuse of irrigation in cases of typhoid perforation, as well as in appendicitis, would be followed by a marked reduction of the present mortality rate after these operations.

Alcohol in Carbolic Acid Poisoning.—After reviewing the history of the use of alcohol as an antidote to carbolic acid poisoning, T. W. Clarke and E. D. Brown report the results of a clinical and experimental study of the subject. The general conclusions from the experiments were: "(1) Alcohol has a local antidotal effect to carbolic acid burns, due to its solvent action. (2) There is no evidence of chemical antagonism between alcohol and phenol. (3) There is no effect produced by alcohol on carbolic acid poisoning after the latter has been absorbed into the system, as is shown by the intravenous experiments on dogs. (4) Alcohol and phenol placed in the stomach give no different results from phenol alone. (5) Lavage with alcohol is effective when the phenol is in the stomach, but its superiority over lavage with water is not pronounced." From the clinical aspect, alcohol seems to have a local antagonism to carbolic acid, and they would not say that it is of absolutely no value in poisoning by this drug. Its solvent action may nevertheless be, under certain conditions, a danger rather than an advantage, as shown by the more marked symptoms of intoxication seen when the poison has been taken in whiskey, and this seems to contraindicate the alcohol being used as an antidote and left in the stomach. The procedure recommended is as follows: Immediate abundant lavage with 10 per cent. alcohol, this to be followed by lavage with plain water, and stimulation as indicated. To be effective, alcohol must be used while the acid is in the stomach; it is of no use after it has been absorbed. The danger of pneumonia from inhalation of the regurgitated stomach contents during lavage in an unconscious subject is pointed out, and the authors advise during lavage turning the patient on the side or face, with the head low so that anything entering the pharynx will flow out through the mouth. Since using this plan they have had but few pulmonary complications in their patients.

Quinine in Pneumonia.—A. L. Custetter gives accounts of four cases of pneumonia treated with large doses of quinine as recommended by Galbraith, and says that he has had many others which he has treated in the same way with like good success. In Nogales, pneumonia is a very common disease, and under other methods of treatment a very fatal one. His mortality in pneumonia cases was formerly nearly 80 per cent., but since he has been using the quinine treatment according to Dr. Galbraith's method, he has not lost a patient. Out of a total of about thirty cases so treated, only one (one of those here reported) showed any signs of quinine poisoning (profound deafness and almost complete blindness), but in this case the symptoms passed off completely within ten or twelve hours, leaving no after-consequences.

A. S. v. Mansfelde calls attention to the recommendation of the use of large doses of quinine in croupous pneumonia, by Prof Theodore Juergenson in v. Ziemssen's "Cyclopedia of the Practice of Medicine," Vol. V, p. 165, and says that he has used just this treatment for the past thirty years. In this connection, he remarks that Dr. Galbraith's publication "demonstrates that nihilism in the use of individual drugs simply means lack of knowledge of their proper uses, with the consequent reliance on proprietary mixtures, which only too often are void of substance and consequently of action." Is it not a pity, he asks, that such masterly works as Ziemssen's Cyclopedia are so much ignored at the present day?

The Lancet, March 3, 1906.

Marked Intolerance of Belladonna.—T. R. Atkins' patient was a woman with cellulitis of the leg without abrasions, for whom forty minims of "glycerin and belladonna," representing twenty grains of the extract of the latter, were applied to the inner side of the foot. Within half an hour the patient complained of great swelling of the leg and a sensation as if the skin would burst. Dryness of the throat and lips, a feeling as if the nipples were being forcibly retracted, and difficulty of speech quickly followed. The patient now became delirious, the pupils were widely dilated and insensible to light, the hands were kept in perpetual motion groping for imaginary objects, and efforts were made to tear the bedclothes. This delirium lasted for some hours, after which she gradually became more composed but felt as if she had passed through a severe illness. In forty-eight hours the dryness of the throat and the pain in the breast had disappeared, though the pupils remained dilated and resumed their normal condition only on the fourth day. The treatment consisted in the administration of hot coffee and a quarter of a grain of morphine, together with the use of continuous hot applications.

The Psychology of the Tuberculous.—This question has been studied by A. S. Gubb, who notes that there are presumably two principal morbid processes at work in the determination of the psychical peculiarities noted in the tuberculous: (1) changes in mental temperament, presumably due to the action on the nervous system of the toxins of the tubercle bacillus, and (2) modifications in character due to mechanical interference with the cerebral function, secondary to the deposits of tubercle within, or upon the brain. Such deposits may cause cerebral impairment, and even epilepsy or melancholia. The characteristic features of the general psychology of this class of patents are instability, feverish activity alternating with intense depression, phases of despair with intervening elaboration of plans for the future, hypochondria—from which the patient may seek relief in intense application to his work or by reckless indulgence in sexual pleasures. There is a tendency to sentimentality and generalization, that is, in general, a marked intensification of cerebral function, the manifestations in a given case varying according to the temperamental peculiarities of the individual patient. The author notes that the reproductive functions are peculiarly active, while the fertility of tuberculous couples is almost proverbial. The feverish activity of such people is often regarded as the cause, while in reality it is the result of the disease. All these features are notable in cases with a short, acute terminal period. Up to a certain point the exaggerated metabolism appears to supply the necessary amount of nervous energy until the final breakdown comes on and the weakened system succumbs to the tuberculous invasion. Two interesting clinical histories are given by the author, both in the same family; in both an initial local pulmonary lesion was followed by a marked deterioration in the moral status. Post-mortem examination in one revealed old tuberculous meningitis and fresh tubercles at the base, the initial lesion having been a tuberculous pleurisy with invasion of the adjacent lung.

The Diagnosis and Treatment of Tuberculous Pleurisy.—According to Sidney Martin, the diagnosis requires a consideration of the following factors: (1) Mode of onset; (*a*) insidious, with fever, but no chest signs or symptoms; then, in a week or two, we find well-marked signs of pleural effusion. Unilateral deficiency of chest movement is of especial significance. (*b*) The history of a similar attack of pleurisy a few weeks or even months earlier—on the same side (usual) or on the other side. (2) Course of the disease, including examination of the effused fluid. Non-tuberculous effusions (excluding empyema) tend to disappear. In tuberculous cases, the course is longer in its acute stage, slower in recovery, and there is a tendency to chest deformity with lung contraction. Effusion does not always occur; instead, there may be an increasing thickening or fibrosis of the pleura, with a prolonged pyrexia Recovery may occur under the latter conditions, or one may have a subacute general tuberculosis or the chronic pulmonary disease. The fluid removed in cases of tuberculous pleural effusion sometimes coagulates spontaneously; if, however, the disease has lasted some time or has become chronic, coagulation may be slight or absent. In some cases much may be learned by an examination of the fluid. The author does not claim that the effusion in a tuberculous case never contains the bacteria which are the cause of non-

tuberculous primary pleurisy, but if these and other bacteria are shown to be absent by cultures made from the centrifugalized deposit (100 c.c.)—*i.e.* if the fluid is found to be sterile by cultivation on ordinary media—the disease is tuberculous. In some cases microscopical examination and inoculation of the deposit of the centrifugalized fluid are important. Positive results sometimes follow here, even when we are unable to discover the bacilli in the effusion. As to treatment, the author declares that in the acute stage, beyond the ordinary measures of rest in bed and good nursing, the main point that will arise for decision is the question of removing the fluid from the chest. There does not appear to be any greater danger in removing the fluid in tuberculous cases than in the non-tuberculous, and, indeed, there may be a definite reason in advising the removal of the fluid, owing to the permanent adhesions that are liable to be formed in tuberculous cases. Apart, therefore, from any urgency for paracentesis such as may occur when there is respiratory distress, it is not wise to allow a large quantity of fluid to remain in the chest for too long a time. If the fluid, therefore, is large in quantity and shows no sign of absorption, it had better be removed. Cases which run a prolonged course with pyrexia, and perhaps no urgent symptoms, are best treated by living in the open air, properly wrapped up and well fed. After the pyrexia has ceased all such patients require a prolonged course of treatment in the open air, in order to help the healing of the tuberculous lesion. If this were done more systematically it would, perhaps, to a great extent prevent a second attack of tuberculosis which so frequently affects the lung tissue and leads to either a very chronic illness or more immediately to death.

British Medical Journal, March 3, 1906.

A Rapid Cure for Lumbago.—J. Farquhar commends the use of the Ung. Antimoni tartrat. (B. P.) in the treatment of lumbago. It is to be well rubbed in. He finds that Croton oil liniment used in a similar way is efficacious in cases of chronic sciatica and allied disorders in the hip region. The pain may return after a time, but the remedy is very useful in relieving the stiffness and gnawing attacks characteristic of this class of disorders.

A Case of Myxedema.—The report is made by T. Fraser, whose patient was a man of 42 years. Typical symptoms were presented, while the less conspicuous manifestations, such as slow heart action and respiration, sluggish mentality, lowered temperature, and recurring cramps were also in evidence. The illness covered a period of eight years. Speedy improvement took place, all the symptoms disappearing after a few weeks' course of thyroid extract, and the weight diminishing some forty pounds. The patient has been taking thyroid regularly for some years and has maintained a nearly normal health standard. At one time, when he was deprived of the remedy for two weeks, several of his original symptoms reappeared—such as feelings of coldness, husky and slow speech, and face swelling, but all disappeared in the resumption of the remedy.

The Treatment of Neurasthenia.—The first and most obvious indication, according to G. Rankin, is the enforcement of rest, preferably away from the patient's relatives and usual home surroundings. Absolute rest may give place after a while to a drive or walking. Light literature may be allowed, or the pursuit of any simple hobby or pastime. The muscular system should be improved by massage and faradism. Much depends on the daily visit of the medical attendant. An antiseptic mouth wash should be given, and any error in digestion remedied. The bowels must be regularly evacuated, while the diet must be carefully adjusted to the patient's digestive power; at first it may consist of milk foods, thin soups, fish, fowl, and game. Red meat should be given only once daily, tea should be avoided, all vegetables and fruit should be cooked, bread stale or toasted, fats in abundance, and at least a quart of milk daily. Cod-liver oil may be added to the daily dietary, beginning with very small doses. Stout, Burgundy, or claret may be used with luncheon. For insomnia we may give coal tar products, or even small hypodermics of morphine. If anemic, the patient should receive iron; but it is useless to begin it until the digestion is regulated. If the iron disagrees, we may give some form of manganese, phenacetin with caffeine for headaches, the Paquelin cautery for special tenderness, bicarbonate lavage for gastric cleansing, and a change of surroundings for a few weeks before resuming work, all serve as adjuncts. A most careful hygiene and regularity of living must follow. A fixed portion of the day should be spent in the open air, while every slight ailment calls for immediate attention, so that the risk of incurring nervous exhaustion may be reduced to a minimum.

The Pathology of Epilepsy.—As a result of personal investigations J. Turner summarizes the following changes occurring in epilepsy. Most important are those in the nerve cells. These may show (1) a form indicative of imperfect development; (2) retention of subcortical nerve cells; also an indication of imperfect development; (3) either an acute form of cell change, similar to that produced by ligature of the cerebral arteries in a dog, or (4) groups of darkly-stained, shrunken cells, representing a more chronic change, and very probably, at all events in some cases, the sequel of that just described. On the part of the vascular system we may find (1) large numbers of blood plates in the blood; (2) different forms of intravascular clotting, probably in large measure derived from amalgamation of the blood plates, but to some extent also probably due to destruction of red blood corpuscles; (3) small cortical hemorrhages, which in some cases can be traced to rupture of a vessel blocked up by the aforementioned clot. He submits the proposition that this correlation of defectively-developed, and probably unstable nerve cells with the local stasis of the blood current resulting from intravascular clotting, constitutes the pathological basis of the typical epileptic seizure.

Münchener medizinische Wochenschrift, February 27, 1906.

Lymphangiectomia Auriculi.—Vörner says that it has heretofore always been taken for granted that when clear fluid was obtained on incising an othematoma the colorless nature of the fluid was due to degeneration or disappearance of blood pigment in what was originally a pure hematoma. Various observers have claimed that collections of lymph might also be formed under similar conditions, but the former view has always prevailed. He describes a case in which a fluctuating swelling 2.5 cm. in diameter appeared spontaneously at the upper border of the ear of a man twenty-two years old. Although the skin over the mass was of a slightly bluish shade, on making an incision with the galvanocautery, in order to avoid contaminating the contents with blood, only clear yellowish fluid was obtained. Various tests on the fluid indicated that it was lymph. Its centrifuged sediment contained no red corpuscles but only a few lymphocytes and endothelial cells, and the wall of the cavity on histological examination was found to be lined, partially at least, with endothelial cells, so that the author concludes that in some cases lymphangiectases of the ear may resemble othematomata.

Isolated Subcutaneous Fissures of the Long Bones.—Giese says that all injuries about the limbs which give rise to subjective symptoms which appear to be disproportionately severe in comparison with the objective findings, should be subjected to *x*-ray examination. While the occurrence of fissures of the long bones has frequently been described in connection with more severe injuries, it is not generally recognized that such lesions may be produced under conditions that give rise to only comparatively slight objective evidence. It is only since the introduction of the *x*-ray that it has been possible correctly to diagnose such cases. He describes a case in point, the patient being a boy of eleven years, who after a fall which appeared to result in only a superficial bruise, complained of great pain and inability to walk. Examination with the fluoroscope revealed nothing abnormal, nor did a radiograph taken from the front. Another view showing the median aspect of the bone revealed a fine tissue of considerable extent, however. Another diagnostic point mentioned by the author is the fact that in the present instance the hemorrhage was manifestly subperiosteal, so that the suspicion of a bone injury seemed justified.

Fatal Benzin Poisoning and Its Postmortem Appearances.—Burgl describes a case of fatal poisoning with this agent, the patient being an infant of eighteen months that received 30 or 40 grams of benzin. Death followed in coma at the end of about three and one-half hours. The autopsy findings are described in great detail and presented evidences of death by suffocation, combined with more or less pronounced symptoms of carbonic oxide poisoning. The most characteristic lesions are said to be extensive hemorrhages, which appear on the surface of the lungs and also throughout their substance. An inflammatory condition of the lymphatic apparatus of the digestive tract was also noticed. The general manifestations comprised cyanosis, dilated pupils, fluidity of the blood, congestion of the lungs, the trachea, and bronchi; the air passages were filled with bloody foam, and there was congestion of the brain, liver, and kidneys. In this case, as in the three others that have been described in the literature, the symptoms during life included rapid loss of consciousness, dilated pupils, cyanosis, rapid, small pulse, cold skin, rapid and superficial breathing, and convulsions.

Diarrhea.—Creel employs the following if Squibbs' cholera mixture is complained of as being "too hot":

℞ Pulv. opii,.....gr. vii.
Pulv. camphor,.....gr. vii.
Pulv. capsici, ...gr. vii.

Ft. Caps. No. vii. Sig.—One capsule two or three times daly.—*Therapeutic Record.*

Book Reviews.

An Atlas of Human Anatomy for Students and Physicians. By Carl Toldt, M.D., Professor of Anatomy in the University of Vienna, assisted by Professor Alois Dalla Rosa, M.D. Translated from the Third German Edition and Adapted to English and American and International Terminology by M. Eden Paul, M.D., Brus., M.R.C.S., L.R.C.P. Sixth Section: G, Neurology; H, The Organs of the Senses (Figures 1124 to 1505 and Index). London: Rebman Limited; New York: Rebman Company, 1904.

This sixth and final volume of Toldt's admirable Atlas is perhaps the most important, certainly the most interesting, of the series, dealing, as it does, with the anatomy of the nervous system and the organs of special sense. In notices of the earlier volumes we have described the general character and scope of the work, and have expressed our appreciation of its excellence. It is purely an atlas, without descriptive text, and cannot take the place of Cunningham or Gerrish or Gray as a text-book for the student's use; but as complementary to any of these treatises it cannot be too highly commended. No part of the anatomy of the human body, gross or microscopical, is slighted; some of the regions depicted are, indeed, to be found in no other anatomical treatises with which we are familiar, and can be seen by the student only in special and skillful dissections. The translator has added a few useful explanatory notes, and a very complete index concludes the volume. The work as a whole is a most welcome addition to anatomical literature—if a series of pictures can be so designated—and as a reference atlas for the surgeon or internist it has no equal.

A Treatise on Diseases of the Skin. For the use of advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Professor of Dermatology, Jefferson Medical College, Philadelphia; and Clinical Professor of Dermatology, Woman's Medical College, Philadelphia. Fourth Edition, Revised. Philadelphia and London: W. B. Saunders & Company, 1905.

The first edition of this work appeared in June, 1902, and the fourth edition in October, 1905. This is a sufficient indication of what the profession thinks of the work, and relieves the reviewer of any necessity for praise. In the present edition the principal additions are to be found in the section treating of the *x*-rays, Finsen light, and d'Arsonval (misprinted d'Arsonoal) current as therapeutic measures. The paragraph treating of the latter might, we think, have been considerably amplified with advantage, for though, as the author states, the use of the higher-frequency current is still in the experimental stage, it has given some positive results and is deserving of more than the few lines accorded to it by Dr. Stelwagon. One decided improvement is the substitution of several illustrations taken from the author's own cases for those borrowed from Mracek's Handatlas in the earlier editions. The work is well illustrated with 32 colored and halftone plates, and some 250 pictures in the text. The dermatological specialist, as well as the general practitioner who needs to inform himself regarding the most common diseases of the skin, will find this work most helpful.

The Surgical Treatment of Chronic Suppuration of the Middle Ear and Mastoid. By Seymour Oppenheimer, M.D., Otologist and Laryngologist to Gouverneur Hospital; Otologist and Laryngologist to Mount Sinai Hospital Dispensary; Fellow of the American Laryngological, Rhinological, and Otological Society. Philadelphia: P. Blakiston's Son & Co., 1906.

The treatment of mastoid disease is one of the recent developments of medicine which has been productive of untold saving of life, and it is a field which is being tilled boldly by many. Most of the work hitherto accomplished in this line has been recorded only in periodical literature, and the writer of this treatise has done well to collect in permanent form the results of the labors of the multitude of otologists who have been working along these life-saving lines. The work is, however, in no sense a compilation, but a thoroughly original treatise, in which the views of the writer are expreseed in no uncertain manner. The reader is impressed with the feeling that he is under the personal guidance of an expert; if he is a specialist, he may not always accept the views of the author, but he must respect them; if he is a general practitioner, who must perforce be a specialist in all branches of medicine, he can have no safer guide in this particular field. Dr. Oppenheimer is a lucid writer of good English, which some original investigators are not, unfortunately, and the reader of his book has no difficulty in following him through every point of his argument and in the description of operative details. The illustrations are deserving of special praise. There are forty-six halftone plates made after special dissections, and many of them are supplemented by diagrammatic plates, facing the halftones, which serve as keys in explanation of the original plates. The work deals not alone with the treatment of mastoid and middle-ear disease, but presents an exposition of the symptomatology upon which the diagnosis is based. It is a treatise which no specialist can do without, and which the general practitioner—not only the one who must treat his own cases, in whatever special lines they may fall, but also the more fortunate city physician, who can command the assistance of the special surgeon when he has made his diagnosis—will find of the greatest assistance in cases of neural disease accurring in his daily practise.

Pathogenic Microorganisms, including Bacteria and Protozoa. For Students and Practitioners of Medicine and Surgery and Health Officers. By William Hallock Park, M.D., Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College and Director of the Research Laboratory of the Department of Health, New York, assisted by Anna W. Williams, M.D., Assistant Director of the Research Laboratory. New (second) Edition, Enlarged and Thoroughly Revised. Philadelphia and New York: Lea Brothers & Co., 1905.

In the five years that have elapsed since the first edition of this work appeared, progress in the domain of human microparasitology has been rapid. Especial importance has been assumed by the protozoan parasites, which are found to be the pathogenic agents in an increasing number of diseases. The majority of tropical diseases appear to be due to the presence of animal microparasites, and the belief is growing that most, if not all, of the exanthemata, including syphilis, have an animal causation. The author has recognized this fact and has included in this edition of his work a considerable section, which we predict will be yet more extensive in future editions, to a consideration of the protozoa. The chapters dealing with the bacterial parasites have been thoroughly revised, so that the book in its present form may be said to reflect the latest knowledge in the entire domain of microparasitology. It is not intended for specialists, but can be confidently recommended to students and practitioners of medicine who would be informed regarding the causation of infectious diseases.

Military Hygiene. By Robert Caldwell, F.R.C.S., D.P.H., Lieutenant-Colonel Royal Army Medical Corps; formerly Medical Officer in Charge District Laboratory, Meerit; Member of Committee on Field Sanitation in Connection with Surgeon-General's Report on South African Campaign; Medical Officer in Charge, District Laboratory and Isolation Hospital, First Army Corps. New York: William Wood & Company, 1905.

This is an interesting book of about 400 pages, and worth careful reading by every medical officer of the military and naval services. It appears to be rather a series of essays on the various subjects treated than a text-book, and lacks so much in the way of amplification and detail as to render it scarcely sufficient as the only guide to the military sanitary officer. That it should be the latter is evidently not the purpose of the author, who has apparently only modified his recent prize essay on "The Prevention of Disease in Armies," to render the information therein more accessible. The book is largely based on the personal experiences of the author, and contains much valuable information relative to the sanitary history of the recent Anglo-Boer War which had previously not been available. It is the latter part especially which gives the book particular value to the medical officer and epidemiologist. One defect to be noted is the apparent slight effort made to review recent literature bearing on medicomilitary sanitation and further broaden the author's experience by the combined experience of many others. The author is a strong believer in the apparent *de novo* origin of disease from previously latent and apparently innocent germs assuming a virulent character, and cites many interesting examples to prove this important point. It is noticeable that he classes "jaundice" as a separate disease among the affections to which the soldier is liable, and also classes "sewer gas" as one of the direct agents inducing Malta fever and other diseases. The book is naturally prepared more especially to meet the needs of the British army surgeon and certain chapters have no great value for medical officers of other services. On the whole, all such others should read it, but few need to study it. The book is well gotten up and entertainingly written. Even if incomplete as a text-book, it is a valuable contribution to sanitary literature.

A Study in Nursing. By Miss A. L. Pringle, Formerly Matron of St. Thomas' Hospital, Superintendent of the Nightingale Training School for Nurses, Superintendent of the Nurses at Edinburgh Royal Infirmary. London and New York: The Macmillan Company, 1905.

In this little book a veteran nurse writes most pleasingly about many things in connection with her profession. Every page bears ample witness to a wide experience and a thorough knowledge of human nature. The high ideals of nursing, as well as its humble details, are constantly kept in view. The book is well worthy the attention of all nurses.

Society Reports.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, February 12, 1906.

THE PRESIDENT, DR. THOMAS E. SATTERTHWAITE, IN THE CHAIR.

Filtration of Public Water Supplies.—By MAJOR CASSIUS E. GILLETTE, Engineer Corps, U. S. A. (See page 468.)

Public Water Purification in Massachusetts.—By Dr. CHARLES HARRINGTON, secretary of the Massachusetts State Board of Health. (See page 472).

On the Problems of the Public Water Supply of New York City.—ERNST J. LEDERLE, Ph.D., a member of the State Water Supply Commission, discussed this phase of the subject. He stated that the questions of adequate transportation facilities and the proper housing of its school children, the furnishing of an abundant supply of water, were three matters of most vital importance which the city was always behind in. For the past five or six years competent authorities had stated that within a very short time the water supply of the city of New York would be insufficient for its wants, and for the increase in population and the increase in the use of water. Various commissions had been appointed during the past five years to investigate this subject, and as the result of their labors, a number of very excellent and exhaustive reports thereon had been submitted, and in all of these the importance and urgency of an additional water supply were emphasized. As a result of this agitation, two bills bearing upon the subject were passed by the Legislature in 1905. One of them, known as the McClellan Bill, authorized the Mayor of the City of New York to appoint a board of water supply, the duty of which should be to proceed immediately and with all reasonable speed to ascertain what sources existed and were most available, desirable, and best for an additional supply of pure and wholesome water for the city of New York. This board was thereupon appointed, and based upon its labors and investigations, and aided by the reports submitted by previous commissions, a report was compiled and submitted to the Board of Estimate and Apportionment of the city of New York on October 9, 1905, in which the need of an additional water supply was again emphasized, and a certain section of the State recommended in which to obtain that additional supply. The plan submitted by this board entailed the enormous expenditure of over $161,000,000, and a great deal of public opposition to it had developed, including many formal protests which would eventually be taken up by the State Water Supply Commission. This latter commission would have to decide, first, whether the improvement asked for was a public necessity; second, whether the plans, as outlined, were just and equitable to those affected by it, and whether it affected the present or future water supply of the section recommended; third, whether the city of New York had made proper provision for the payment of direct and indirect damages to the property-holders.

The sources for an additional water supply recommended by the board in its report of October 9, 1905, were the following: 1. Esopus creek, to be taken at a point near Olive Bridge. 2. Rondout creek, to be taken at a point near Napanoch, together with three small streams tributary to the Rondout. 3. Schoharie creek, to be taken at a point near Prattsville. 4. Catskill creek, to be taken at a point about one mile north of East Durham, together with several tributary streams. The estimated yield of these proposed sources would aggregate 660,000,000 gallons daily. The conclusions offered by the Board of Water Supply were as follows: 1. The Catskill Mountain watersheds were the most available, the best, and the cheapest from which to obtain a proper additional supply of water for the city of New York. 2. The order of development of these sources should be Esopus, Rondout, Schoharie, and Catskill. 3. The Borough of Brooklyn should look for immediate relief from the water famine conditions existing to the water collected and stored in the sands of Long Island, and should use every effort to make these sources available. 4. To insure an addition at the earliest possible time of some 80 to 150 million gallons per day to the safe available Croton supply, work should be concentrated on the location and construction of the aqueduct from the Croton watershed to Ashokan reservoir, and the construction of the latter.

In connection with his remarks, Dr. Lederle showed a number of interesting lantern slides of views of the present Croton watershed, illustrating the improvements that had been made there in recent years from a sanitary standpoint. In reply to the claim made by some that the Hudson River offered the most available source for an additional water supply, Dr. Lederle said that one objection to that plan was that the water would have to be pumped, and another was that if 500,000,000 gallons of water were taken from the Hudson River daily at a point say as far up as Hyde Park, which was above the influence of salt water, it would necessitate the building of compensatory reservoirs in the Adirondacks, to maintain the normal flow of the Hudson river.

The Relation of Sewage to the Public Health.—Dr. HERBERT E. SMITH, dean of the Faculty of Medicine, Yale University, presented this paper, in which he briefly discussed the salient points of the dangers of sewage to the public health, and the means by which the infectious organisms might be transmitted from sewage to the food of man. Air transmission was properly regarded as of less importance than formerly. The air of sewers had been found to be surprisingly free from bacteria of any kind, a condition easily accounted for by the difficulty with which bacteria passed from a fluid to a gaseous medium, and by the facility with which they were removed from the air on coming in contact with wet surfaces. It had to be conceded, however, that infectious sewage organisms might be transmitted through the air from dried and comminuted sewage of any sort. In speaking of the fly as a disseminator of infectious organisms, Dr. Smith called attention to the coincidence between the occurrence of typhoid fever in the country districts in the summer and early autumn and the great abundance of flies in those seasons. He ventured to predict that when this method of transmission had received more careful consideration, the fly would be found to rival the historic well as a means of disseminating typhoid fever. The facts of the water transmission of infectious organisms were well known, and great epidemics of typhoid and cholera had been traced to this method of dissemination. The danger from infection through the medium of ice formed from contaminated waters seemed to have been overestimated, as clear ice was commonly of very low bacterial content as compared with the water from which it was formed. Another fortunate feature was that a freezing temperature was unfavorable to pathogenic bacteria, and as ice was commonly stored some months before it was used, this tended to diminish the number, and to lessen their virulence. So potent were these modifying conditions that, although ice was frequently cut from sources that would not be tolerated as sources of drinking water, there were almost no authentic cases of infection through the use of ice. The transmission of infection by the agency of milk was closely connected with contaminated water, through easily understood relations. There were cases on record where milk infection had been traced to the agency of flies. Of other means of transmission green vegetables were a possibility, and should be considered where it was proposed to use sewage for irrigation and the fertilization of truck farms. The remaining means most in the public mind was that through the agency of shell-fish. This was a real danger, as indicated by a number of demonstrated epidemics, and by numerous probable isolated cases, as well as by the known conditions of oyster culture.

Ultimate Disposal of Sewage.—George A. Soper, Ph.D., a member of the New York Bay Pollution Commission, said that the problem of the disposal of sewage was one that had arisen as a result of the concentration of population. In the beginning there was very little difficulty, apparently, for man to dispose of his wastes in a manner that would meet with the most exacting demands of the modern hygienist. He simply disposed of his wastes wherever it happened to be most convenient to him, and then moved away. That could not be done now in the cities and towns; there it was necessary to move the wastes away, and it gradually had become necessary to move them further and further away, in order to guard against, first, the production of offensive odors, and, second, the production of disease.

Originally, sewers were not built to carry off what we now call sewage, but were designed as underground drains for the purpose of carrying off rainwater chiefly. Both in London and Paris they were built for that purpose, and as late as 1815 it was made a penal offense in London to use the underground drains for any other purpose than to carry away the storm water and slops, and it was not until 1847 that cesspools and privies were abolished and the underground drains were utilized for the purpose of disposing of sewage. The statute books of many of the States of this country contained laws pertaining to the disposal of sewage; in some this control was only partial; in others it was more or less stringent, while in comparatively few the restrictions were very severe. Among the latter were New York, Massachusetts, Connecticut, Vermont, New Hampshire, and Wisconsin. In New York State all projects relating to the disposal of sewage had to be submitted to the State Commissioner of Health for his approval, and the emptying of unpurified sewage into any of the waterways of the State without a permit was prohibited. The laws themselves were efficient, but difficulty lay in their proper enforcement.

Dr. Soper said that the employment of sewage purification processes was a comparatively new development in sanitation. In this country twenty-three of the States had plants for that purpose a year or so ago. Of the total urban population of about 28,000,000, 73 per cent. emptied their sewage into inland waterways and 23 per cent. emptied theirs into the ocean, leaving about 4 per cent. that purified their sewage. The total amount of solid matter in sewage, roughly considered, should range from 150 to 400 grams per person per day. About one-half of this was organic matter, and about one-third was suspended in the form of solids in the water. These figures were mere approximations, but they served very well to give a general idea. It had often been supposed that the fertilizing ingredients in sewage could be employed to advantage, and many projects toward this end had been arranged. Unfortunately, the hope of running sewage disposal works with profit to be realized from the sale of the fertilizing materials recovered had always met with disappointment. The dilution of the manure was far too great and the methods of extracting the useful properties were too expensive to make such projects profitable. The inoffensive disposal of sewage was always an expensive undertaking, and experience showed that it could never be undertaken except at a considerable net annual outlay. Carefully managed sewage farms sometimes brought in a small partial return, but in this case the chief value of the sewage lay less in its fertilizing than in its irrigating properties.

The chief method of disposing of sewage at the present time was by dilution. It was emptied into the nearest waterway, and, if the supply of water was sufficient, it naturally purified the sewage in time. The question arose, how much sewage could be emptied into a watercourse without overcharging it? It had been found that for such rivers as we had in New England, a dilution of about one part in twenty-three was usually sufficient to avoid the production of odors. The dilution in salt water, however, was not so favorable, as salt water would not digest as much sewage as fresh water. Extensive nuisances had occurred in many tidal harbors through the emptying of sewage into the water without purifying it or insuring its dilution by adequate currents.

In disposing of sewage it was not always necessary to use the most efficient process, for the reason that it was not always necessary to attempt to secure the same degree of purification. Partial purification was often sufficient, as, for example, when the sewage was to be emptied into a small stream which had some, if limited, capacity for digesting it. In the ultimate disposal of sewage the fate of the bacteria always played a leading part. Among the oldest methods of sewage disposal was that of the sewage farm, such as had been in existence in Paris for thirty-five years. The sewage of Berlin was also purified in sewage farms containing about 13,000 acres. The method was extravagant in this respect, that a very large amount of land was required, one acre sometimes being necessary to dispose of the sewage of about 350 people. In certain sections of this country, chiefly through the efforts and experiments of the Massachusetts State Board of Health, one of the most efficient methods of sewage purification had been introduced, namely, the intermittent filtration method. By this method the sewage flowed upon a specially constructed bed of sand which, in operation, was alternately saturated and drained, or rested. By this filtration process nearly all of the bacteria were removed from sewage. Unfortunately, this method required large beds of a suitable sand which was not always readily obtainable.

Recently much more rapid methods of sewage purification had been devised. Among the best of these was the method requiring the use of contact beds. The beds were especially constructed of gravel, ranging in size from particles about as large as a pea to others about the size of a small apple. The beds were often eight feet deep. Under favorable conditions they were capable of removing about 90 per cent. of the bacteria and 75 per cent. of the suspended organic matters in sewage. Contact beds were operated by allowing the sewage to flow into them from the bottom, whence it rose to the top, rested for some time, and was then drawn off, the whole process lasting about six hours. A preliminary treatment for the removal of the coarser particles in the sewage was necessary. The city of Manchester disposed of 150,000,000 gallons of sewage per day in this manner. One of the most promising methods of purifying sewage was by means of percolating or sprinkling filters. These were gravel beds composed of particles two to three times as large as those employed in contact beds. The sewage to be purified was sprinkled on the surface and allowed to percolate, or drip through to the bottom. Filters of this type were capable of removing 80 to 90 per cent. of the bacteria and a large proportion of the suspended solids. The effluent was non-putrescible. Sprinkling filters, when properly built and operated, were capable of purifying over 2,000,000 gallons of sewage per acre per day. They required some preliminary process to remove the coarser solids.

One of the simplest of the so-called preliminary processes was screening. Screens were built in many ways and of different sizes, according to the work which they were intended to perform. Many of them were extremely ingenious and efficient. Another preliminary process was sedimentation, in which the sewage was allowed to move slowly, or come to a complete rest, in tanks, during which many of the solid matters were deposited. The most promising and efficient preliminary method employed the so-salled septic action of bacteria to turn into liquids and gases many of the decomposable solids in sewage. Septic tanks were practically sedimentation basins in which the sewage was stored for eight hours or more. Under favorable conditions the total organic matter in sewage could be reduced about one-third and the bacteria about 60 per cent. by septic tanks. The sewage, thus partially purified, was

then suitable for final treatment upon sprinkling filters or contact beds.

It had often been supposed that the use of chemicals could be employed to advantage to purify sewage, but they were now most extensively employed to aid the precipitation of the solid matters to form sludge. The disposal of this sludge was a serious matter. The county of London treated about 230,000,000 gallons of sewage in this way and had several large steamers to carry the resulting sewage sludge out to sea where it was dumped. There were probably not far from 200 sewage disposal plants in Europe operated upon this principle. New York city had several in the suburbs. The method was not capable of removing a high percentage of the bacteria and suspended matter. Only about 80 to 90 per cent. of the bacteria disappeared and the effluent was usually putrescible.

The Commercial Value of Clean Water.—Mr. George C. Whipple, C.E., read this paper. He stated that there was one phase of the subject of water filtration that had not yet received the attention it deserved, namely, the commercial value of clean water. We might start with the general axiomatic propositions that unpolluted water was worth more than polluted water; that soft water was worth more than hard water, and that clear, colorless, good-tasting water was worth more than one that was high-colored, turbid, or ill-smelling. As a basis of arriving at the depreciation which it was fair to deduct from the value of a water supply to a community because of its contamination, we might use the value of human life as determined by court decisions, the death rates from typhoid fever, and other water-borne diseases, as far as we knew them, the morbidity of these diseases, their duration, the loss of wages, cost of medical attendance, etc. A critical study of these data for a number of American cities had shown that for every death from typhoid fever the vital assets of the community were reduced in value by at least $10,000; and that for every unit death rate per 100,000 chargeable to water-borne typhoid fever it was fair to deduct a depreciation of $2.75 per million gallons from the value of the public supply, assuming a water consumption of one hundred gallons per capita daily. This was equivalent to ten cents per capita per year for each unit death rate from typhoid fever per 100,000. Thus, in Albany, filtration reduced the annual typhoid death rate from 104 to 26 per 100,000, thereby rendering each person of the community potentially richer by an income of $7.80 a year. Mr. Whipple then discussed, from a commercial standpoint, the depreciation of value due to drinking water that had unpleasant esthetic characteristics, such as taste, turbidity, or color; also, from the same standpoint, the advantage of soft water over hard water, and of cool water over lukewarm water, such as was usually obtained from surface reservoirs in this climate in the summer. He showed that clean water had a distinct commercial value, and that filtration paid even when its object was simply to make a turbid water clean, or a colored water colorless. In Watertown, N. Y., the elimination of color from the Black River supply had increased the value of the water by $12.40 per million gallons; in Philadelphia, the removal of the mud in the Schuylkill river water had increased its value $20 per million gallons; if the odor of the Ludlow water in Springfield could be removed its value would be materially increased. In Oberlin, Ohio, the softening process had saved the people $12 for each million gallons delivered; in Winnipeg, Manitoba, $39 per million gallons. The speaker said he confidently believed that many would live to see the day when filtration would be not only demanded by the public, but when our health laws would require that every surface water used for domestic supply should be submitted to some form of artificial purification. To bring about this much-desired situation the medical profession could do much, and, in justice to the teachings of modern sanitary science, it should lend its powerful influence to this movement.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY.

Meeting of the Middle Section, Held in Chicago, February 24, 1906.

Dr. Wm. J. Ballenger in the Chair.

Bullet Wound of the Mastoid.—Dr. James E. Logan of Kansas City, Mo., reported the case of a man, forty-eight years of age, who was shot in the right ear on Christmas Day, 1896. The bullet, 38-caliber, first passed through the fleshy portion of the right shoulder and entered the external meatus, lodging in the middle floor of the ear. Facial paralysis on the right side immediately followed. An operation was performed at once for the removal of the bullet, but without success. The middle ear began to suppurate while the patient was still in the hospital. The discharge stopped after a month or six weeks had elapsed. These attacks of suppuration occurred at intervals, followed by periods of cessation, until 1902, after which time the suppurative process continued without interruption. Pain was very severe at times in the region of the ear and on the top of the head, but there were no other symptoms referable to the head except the constant facial paralysis. The man was operated upon by Dr. Bisby, July 6, 1905, who was unable to locate the bullet. The suppurative process continued with increasing activity, and patient was sent to the author December 11, 1905. Patient's condition now was that there was very little pain; temperature was 99.2°, pulse 80, tongue coated. The tissues covering the mastoid and extending over the occiput were highly inflamed, and a fistulous opening existed beneath the lobe of the ear, allowing some of the discharge to pass through this channel. Much necrosis was evident, which accounted for the terrible odor emitted from the wound. On September 18 an operation was performed, all necrosed bone which could be found being removed. The patient made a rapid and uneventful recovery.

Anesthesia in Tonsil and Adenoid Operations.—Dr. L. C. Cline of Indianapolis, Ind., suggested the following points for discussion: (1) Is it necessary to use a general anesthetic in all or in the majority of operations for the removal of adenoids and tonsils? (2) If so, what is to be the choice of an anesthetic? (3) Cannot these operations be done just as efficiently, with less shock and danger to life and postoperative complications, without a general anesthetic? The author believed that in the majority of cases it was possible to do as clean and as thorough an operation with a local as with a general anesthetic.

Dr. M. A. Goldstein of St. Louis advocated local anesthesia for removing ordinary adenoids and tonsils.

Dr. Joseph C. Beck of Chicago considered ether the safest general anesthetic for the removal of tonsils and adenoids, particularly in those cases where the operator had to dissect out tonsils in children. In adults cocaine and adrenalin could be used.

Dr. Edwin Pynchon of Chicago said the selection of the anesthetic depended entirely upon the age of the patient and the condition of the tonsils. In children, in whom the tonsils protruded, he thought it was the best way not to administer a general anesthetic. When the tonsil was buried and had to be carefully dissected out, a general anesthetic was necessary. He favored local anesthesia whenever possible.

Dr. Derrick C. Vail of Cincinnati believed in giving a general anesthetic for these operations.

Dr. H. W. Loeb of St. Louis endorsed the removal of ordinary adenoids and tonsils without general anesthesia.

Dr. John F. Barnhill of Indianapolis said that usually adenoids could be removed so simply and quickly, without pain, that one was not justified in giving a general anesthetic. However, general anesthesia was sometimes necessary.

Dr. George F. Keiper of Lafayette, Ind., had never found it necessary to induce complete general anesthesia for the removal of tonsils or adenoids, because when there was

complete general anesthesia the danger from the anesthetic itself was greatly increased.

Dr. Wilbur W. Bulette of Pueblo, Col., reported the death of a child, five years of age, from general anesthesia for the removal of adenoids and tonsils.

Dr. H. W. Loeb of St. Louis, Mo., presented a number of specimens and original drawings, showing the anatomy of the nose and accessory sinuses.

Submucous Resection of the Nasal Septum.—Dr. Robert Levy of Denver pointed out the indications for this operation. He said that the window resection presented the ideal method for the correction of certain deformities of the septum which no other operation had ever offered. A contraindication to all operations upon the nasal septum was the existence of syphilis, either hereditary or acquired. He did not wish to detract from the importance and immense value that the submucous resection of the nasal septum offered. It was the most ideal operation for deflected septum. It was, however, an operation requiring a decided perfection of manual dexterity and perfect technique. It was also an operation which required more endurance and consequently produced more shock on the part of the patient; therefore, before deciding upon its performance, the symptoms should be weighed carefully and judgment exercised.

Evils of Mouth-Breathing.—Dr. C. P. Linhart of Columbus, Ohio, said that many cases of chronic pharyngitis were due to mouth-breathing. Even later in life, when the bones of the mouth and nose were completely ossified, the openings of the nares could be enlarged by proper breathing exercises. The following axioms were recommended for keeping the nose in a normal condition: Cool living rooms; well-ventilated sleeping rooms; cold bath, especially for the neck and spine; dry clothing; simple foods; regular habits; moderate daily exercise, and breathing through the nose.

Treatment of Hypertrophic and Intumescent Rhinitis.—Drs. E. Fletcher Ingals and Stanton A. Friedberg of Chicago contributed a joint paper on this subject. The authors drew the following conclusions: "(1) The galvanocautery, when properly used, offers one of the best, if not the best methods for the treatment of the intumescent and hypertrophic forms of rhinitis. (2) The dangers of middle ear infection have been greatly exaggerated, not any case in the series, and only one among several thousand cauterizations, having come under their observation. (3) The liability to adhesion formation is not great, providing sufficient care is taken not to injure the opposite septal mucous membrane, and providing, also, in cases in which the subsequent swelling is marked, a probe is passed between the opposing surfaces in four or five days. (4) A 4 per cent. solution of cocaine is sufficient in the vast majority of cases to induce complete local anesthesia, three to six applications on a cotton-wound flat applicator being sufficient for this purpose. As a result of experience, especially in cases of marked intumescence, they believe that a spray of adrenalin materially assists in producing anesthesia. (5) The objection that the galvanocautery destroys too much of the mucous membrane does not obtain, if the cauterization is linear, and if it is done properly, whereby very little mucous membrane is destroyed. (6) Scab and crust formation does not occur any oftener following cauterization than after other nasal operations; in fact, it was noted in but very few instances, and in some of these a change in the spray solution caused a cessation of this trouble. (7) No packing was needed to prevent hemorrhage, and this factor makes the discomfort following the operation very much less than after some other methods. (8) There is very little pain after galvanocauterization of the turbinated bodies."

Dr. John J. Kyle of Indianapolis reported a case of abscess of the temperosphenoidal lobe, of otitic origin.

Dr. W. R. Dabney of Marietta, Ohio, discussed the subject of acute osteomyelitis of the temporal bone.

Dr. Max A. Goldstein of St. Louis, Mo., talked on the treatment of perforation of the nasal septum.

Medical Items.

Cancer as a Cause of Death in Assured Lives.—R. Hingston Fox, who is thoroughly conversant with life assurance statistics, states that the rise of the cancer death-rate has affected women less than men. This may be due to the fact that the disease in women is in a great majority of cases on the surface of the body or in the pelvic organs, where it is comparatively accessible. He believes that the family history of cancer in the patients who died of that complaint was far more frequent than in the case of applicants generally. He points out one important feature about a family history in malignant disease in a male applicant. It is of less importance in earlier life, and of increasing moment to those who apply later. This is contrary to the rule for the value of a morbid history, namely, that it diminishes as age advances, as is especially shown in the case of tuberculous disease.—*The Medical Examiner and Practitioner.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending March 17, 1906.

SMALLPOX—UNITED STATES.

		CASES	DEATHS.
California, Los Angeles	Feb. 24–Mar. 3	5	.
San Francisco	Feb. 24–Mar. 3	6	1
Delaware, Wilmington	Mar. 3–10	1	..
Florida, Jacksonville	Feb. 24–Mar. 10	17	
Georgia, Augusta	Mar. 5–12	1	.
Louisiana, New Orleans	Mar. 3–10	20	.
Maryland, Baltimore	Mar. 3–10	6	..
Massachusetts, Somerville	Mar. 3–10	1	
Michigan, Detroit	Mar. 3–10	3	.
Mississippi, Natchez	Feb. 24–Mar. 3	2	.
Missouri, St. Louis	Mar. 3–10	4	
North Dakota, Grand Forks County	Jan. 1–31	1	.
McHenry County	Jan. 1–31	29	. ..
Nelson County	Jan. 1–31	6	..
Ward County	Jan. 1–31	1	..
Ohio, Cincinnati	Mar. 2–9	8	..
Tennessee, Memphis	Feb. 24–Mar. 3	3	..
Nashville	Mar. 3–10	1	..
Utah, Salt Lake City	Feb. 24–Mar. 3	16	..

SMALLPOX—FOREIGN.

Brazil, Rio de Janeiro	Jan. 21–Feb. 11	13	3
China, Hongkong	Jan. 27–Feb. 3	2	2
Ecuador, Guayaquil	Feb. 4–18	..	10
France, Paris	Feb. 17–24	9	1
Great Britain, Bristol	Feb. 17–24	1	..
Leeds	Feb. 19–26	1	..
India, Bombay	Feb. 6–13	..	9
Calcutta	Jan. 27–Feb. 3	..	143
Karachi	Feb. 4–11	12	1
Madras	Feb. 3–9	..	22
Rangoon	Jan. 27–Feb. 3	..	40
Italy, General	Feb. 8–22	40	..
Netherlands, The, Rotterdam	Feb. 17–24	1	.
Russia, Moscow	Feb. 3–10	16	2
Odessa	Feb. 10–17	3	3
St. Petersburg	Mar. 3–17	15	2
Spain, Barcelona	Feb 10–20		8
Turkey, Alexandretta	Feb. 10–17	20	4

YELLOW FEVER.

Brazil, Rio de Janei'o	Jan. 21–Feb. 11	19	6
Ecuador, Guayaquil	Feb. 4–18	..	17
Honduras, Puerto Cortes	Mar. 13	1	..
Mexico, Merida	Feb. 18–24	1	..

CHOLERA—INSULAR.

Philippine Islands, Manila	Jan. 6–20	4	4
Provinces	Jan. 6–20	336	249

CHOLERA—FOREIGN.

India, Calcutta	Jan. 27–Feb. 3	..	57
Rangoon	Jan. 27–Feb. 3	..	2

PLAGUE—INSULAR.

Philippine Islands, Manila	Jan. 6–20	2	2

PLAGUE—FOREIGN.

Brazil, Rio de Janeiro	Jan. 21–Feb. 11	10	3
China, Hongkong	Jan. 27–Feb. 3	5	5
India, Bombay	Feb. 6–13	..	121
Calcutta	Jan. 27–Feb. 3	..	31
Karachi	Feb. 4–11	9	6
Madras	Feb. 3–9	..	13
Rangoon	Jan. 27–Feb. 3	..	25
Peru, Callao	Jan. 26–Feb. 12	1	..
Chicama Valley	Feb. 14–21	1	..
Chilcayo	Jan. 26–Feb. 12	5	1
Choisica	Jan. 26–Feb. 12	3	2
Mansefu	Feb. 14–21	..	Present.
Moche	Feb. 14–21	1	..
Mollendo	Jan 26–Feb. 12	4	3
Trujillo	Jan. 26–Feb. 12	16	1

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 13.
Whole No. 1847.

NEW YORK, MARCH 31, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

A NEW INSTRUMENT FOR MEASURING ALL THE DIAMETERS OF THE PELVIS IN THE LIVING WOMAN.

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NEW YORK.

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THE act of childbirth may, technically speaking, be divided into two factors: (1) The expulsive power of the uterus and its accessories in this act, namely the diaphragm and abdominal muscles; and (2) the resistance to this expulsion offered by the soft parts and (more particularly) the bony walls of the pelvis.

Of the first of these two factors very little is known. It has been estimated that the expulsive power of the normal uterus at term is equal to about 50 pounds. How much this is augmented by the abdominal muscles is problematical, and I have reasons for believing that the accessory muscles play a very unimportant part.

Of the second factor, that of resistance to the passage of the child, even less is known, except that in a general way this will depend mostly upon the relative size of the fetal head and the maternal bony parts.

If the bony ring through which the child must pass were in every case of the same size and shape, Obstetrics would be one of the simplest branches of medical practice. That this is not so is a notorious fact, and I believe that it would be difficult to find two pelves exactly alike in size and conformation. The practice of midwifery to-day is truly a groping in the dark, because of our ignorance of the most elementary knowledge concerning the mechanical act of childbirth. To speak plainly,

1. We cannot determine the power which the woman has at her command wherewith to propel the child.

2. We cannot measure the child.

3. We cannot measure the cavity through which the child must pass.

In working out this problem in dynamics the medical attendant has no accurate facts or figures to base his calculations on. The result is that midwifery is full of surprises to both the patient and the physician. If this is true in normal births, it is doubly true in abnormal ones, when a disproportion exists between the size of the maternal passage and that of the fetal head.

Before going into that subject more fully, and by way of leading up to it I may perhaps be pardoned far casting a short retrospective glance at the history of our art.

There cannot be any doubt that of all branches of medicine the very first to be practised was Obstetrics, because children have been born as long as the human race exists.

The savage in travail writhing on her bed of leaves in a cave of the primeval forest was attended by her fellows, who were attracted towards the scene by the cries incident to the pangs of labor. This assistance or help, crude as it must have been, was the beginning of one of the noblest of sciences —that of midwifery. The early Egyptians used to be delivered on the banks of a river, the umbilical cord was cut with a sharp stone and the newly-born child wrapped in the head-shawl worn by one of the bystanders. There exists a very old work written in India, called "Susruta Ajur Veda," which dates back into the gray dawn of civilization, the tenth or ninth century before Christ. It is an encyclopedic work and contains a mixture of quaint laws, doctrines, and mysterious beliefs. According to Müller[1] this work contains some allusion to Obstetrics and even an indication of knowledge of the existence of contraction of the pelvis.

Gradually the older and more experienced of her sex took up the aid of the parturient woman as a business or trade, and thus it came about that midwifery was established. There is evidence to show that the ancient Hebrews, Greeks, and Romans had midwives. In those days it was considered scandalous for a man to be present at the bedside of a woman in labor, therefore the medical profession was barred. The surgeons of that time must have had very fantastic and unreal ideas of the process and progress of labor, and their difficulties must have been enormous when called in consultation to cases of pathological childbirth, when they themselves were without experience in normal labor. This state of affairs prevailed until the time of King Louis the XIV, the lewdness of whose Court was proverbial. The courtesans frequenting the same had no scruples about employing male physicians, and thus man was finally permitted to study and treat normal as well as pathological labors. Up to that time it was believed and taught that the normal position of the child in utero was always head downwards and that it was born by its own unaided efforts; furthermore, that its delivery was effected by the child stretching out its legs, and that by bracing its feet against the fundus of the uterus the baby literally bored its way head foremost through the maternal passages into daylight. Labor was supposed to begin on the child becoming hungry (Bumm[2]). The history of Obstetrics in a most fascinating study, but space forbids my going further into the subject.

The Normal Pelvis.—For our purpose the normal adult female pelvis may be taken to measure as follows at the inlet:

Superior conjugate or antero-posterior diameter of the brim	11 cm., or 4¼ inches.
Transverse diameter	13 cm., or 5¼ inches.
Oblique diameter	12 cm., or 5 inches.
At the outlet:	
The inferior conjugate from symphysis to junction of sacrum and coccyx	11½ cm., or 4¾ inches.

*Read at a meeting of the Section on Obstetrics of the New York Academy of Medicine.

Transverse or intertuberal
diameter ..... 11 cm., or 4½ inches.

It would be obviously incorrect to measure the inferior conjugate from symphysis to tip of coccyx, as this bone can be moved backwards two or more centimeters by the advancing child's head.

These measurements are given as normal by most recent authorities, and my experience, which comprised the digital and instrumental measurement of about 1,000 pelves, on the cadaver as well as on the living woman, practically coincides with this. However, these figures do not hold good for pelves showing racial characteristics such as in the Negress or Mongolian woman. Though to me very interesting, I shall have to at present forego a discussion of this study, but hope to publish the results at a future time.

During labor these measurements may be increased in certain directions owing to the physiological softening and slight lengthening of the pelvic ligaments, and the conjugate diameter may be lengthened one-half centimeter by the patient assuming Walcher's position, namely, with her thighs hyperextended. I doubt whether any material increase is gained in this way.

If any pelvic diameter is shortened the pelvis is said to be contracted in that diameter. It may, however, be contracted in more than one, or in all its diameters, which will produce regular or irregular contraction, the pelvis changing its shape as well as size accordingly.

Contracted Pelvis.—Cohnstein's[3] definition of contracted pelvis is as follows: "A contracted pelvis is one which is an obstacle to the delivery of a normally sized fetal head at term." It is admitted on all hands that contraction of the female pelvis exists in many cases; some authors state in as many as 14 to 20 per cent. (Runge[4]). The latter author points out that contracted pelvis may be counted among the most important obstacles in the whole combined pathology of labor. He says that up to the present time we are not possessed of a method for the measuremnt of the diameters of the true pelvis, but are dependent upon certain easily made external measurements and one or more internal ones. From these we try to form a judgment of the general character of the pelvis.

In a slightly contracted pelvis the first labor may be happily terminated; whereas each succeeding labor becomes harder and harder. One cannot judge the size of the pelvis from the size and build of the woman. Even tall and well-built women may have irregular and contracted pelves.

A knowledge of the pelvic capacity of the parturient woman was always considered desirable but never obtainable in the living. Shroeder[5] says: "The decision as to how small or how large a given pelvis is, constitutes one of the most difficult tasks in midwifery." We are not able to differentiate between a flattened pelvis and one genrally contracted and asymmetry cannot be demonstrated on the living patient at all. Martin[6] finishes a chapter on the subject as follows: "The dangers which threaten the mother in case of contracted pelvis are not only those arising from a protracted labor, but more especially from injury of the maternal soft parts. In consequence of the passage of the child through the narrow space, tears, hemorrhage, inflammation, sloughing, and even death of the patient may occur. If the patient survives, communications between the bladder and vagina or rectum and vagina may be established and through these urine and feces be constantly and involuntarily dribbling. The child may suffer considerably from injury to its scalp or even indentation of its skull bones. It may die at once or some days later. In these cases rupture of the uterus may occur, and is usually fatal to the child and often causes death of the mother also."

According to Braun,[7] relative contraction, namely the acquired form, is of great clinical importance. Relative contraction may be due to carcinoma, enchondroma, sarcoma, echinococcus, formation of osteophytes or exostoses, anomalies of formation of the coccyx, and even the extraordinary development of normal bony projections, as for instance the spine of the ischium. About a year ago I saw a case of excessive callus formation at the site of fracture in a woman's pelvis which might easily have caused obstruction to labor. Even in the most deformed pelvis, however, an exception to the general rule may occur if halisteresis cerea, namely a waxy condition of the pelvic bones, exists. In such a case the bones are so pliable that delivery of the child will sometimes occur contrary to all expectations. We must agree with Braun that "The examination of the pelvis by measurement is of the utmost importance and is the most difficult task of the obstetrician."

Dührssen[8] says that for the diagnosis of contracted pelvis or of some special variety of such, pelvic measurement is essential. Furthermore, that kyphosis situated low down should arouse a suspicion of the presence of transverse contraction of the pelvis. That a funnel-shaped pelvis exists will be indicated only during the progress of labor by the head becoming jammed in the pelvic outlet.

According to Skutsch[9] it is about 350 years ago since the existence of contracted pelvis was recognized. Julius Cæsar Aurantius was the first to demonstrate that a narrow pelvis is the principal cause of difficult labor. There was no correct anatomical knowledge until the sixteenth century; neither was the mechanism of childbirth understood before that time, and it was taught that during labor the bones of the maternal pelvis separate. Even the correct anatomical description of the bony pelvis by Vesalius [10] was unable to cope with that ingrown belief. It was not until the eighteenth century that the works of Deventer[11] and De La Motte [12] were published and caused more advanced views to prevail. During the eighteenth century Smellie of England[13] and Baudelocque of France[14] threw much light upon the subject. Michaelis[15] and Litzman,[16] also the two Steins—Senior[17] and Junior[18] contributed to our knowledge of the subject, thus keeping up the reputation of Germany in this field of study. It is Smellie's undying merit that he was the first to teach palpation as a means of diagnosticating the diameters of the pelvis. His method is still in vogue, although from time to time instruments have been devised to displace it. The method, however, is quite inadequate for the demands of modern midwifery. It is carried out as follows: The index and middle fingers are passed into the vagina and pushed up towards the sacral promontory. Ordinarily this cannot be reached. In that case it is assumed that the pelvic conjugate diameter is not contracted. The hand in then withdrawn. If the tip of the middle finger managed to reach the promontory the distance from the point where the radial side of the index finger pressed up against the lower edge of the pubic symphysis to the tip of the outstretched middle finger is measured. This is the diagonal conjugate. To find the length of the true conjugate from one-half to one inch is subtracted. Authorities differ as to the amount which should be subtracted.

The most important elements of error which may

creep into the calculation are: (1) the unknown height and thickness of the pubic bone, and (2) the possible existence of a false promontory overhanging the real one, thus greatly shortening the conjugate diameter. No one even pretends to be able to determine the transverse or oblique diameter of the brim by the manual or digital measurement.

The second method of measuring the female pelvis is the instrumental, and its development is a most interesting chapter for study. It does not reach back much more than 100 years. A great variety of pelvimeters have been constructed from time to time, and some men have even invented several kinds. The records show quite an imposing array of names of physicians, the best known of whom are, Baudelocque, Matthieu, Breisky, Stein, Creve, Asdrubalin, Jumelin, Lazarevitz, Aitken, Contouly, Harris, Earle, Salomo, Desberger, Bowin, Kiwish, Beck, Kurz, Crouzet, Winckler, Howitz, Kabierski, Wellenbergh, Van Huevel, Szymanowski, German, Freund, Turner, Breit, Küstner, Mayer, Stark, Simeon, Beron, Wigand, and Aveling. It would be a time-consuming and thankless task to describe in detail all the pelvimeters constructed by these and other less famous authors.

Some of these instruments were for external measurement, others for internal, and the rest for externo-internal use. A number, like that of Stein, were merely graduated rods or catheters. Some were hollow finger tips which were slipped over the index finger like a thimble, and made long enough to reach the sacral promontory. Some were shaped and worked like scissors and had a gauge attached. Some were sliding rods to measure the thickness of the pubic bone and to deduct this from the true conjugate. Some were fanciful curvilinear compasses. Some were constructed on geometrical lines from which the angles could be counted and the diameters figured out. One was a leather gauntlet laced around the operator's wrist, on which a scale was marked and a sliding knob worked up and down the scale. To the knob a string was attached which was tied around the thumb and index finger by means of a loop. As the index finger stretched out to find the sacral promontory the knob would be pulled along the scale and would indicate how far the finger tip had traveled. Meyer pierced his thumb and index finger nails with a threaded needle so as to get the proper amount of friction for the thread. German lauded his instrument highly and pressed its claims to being not only a pelvimeter but also a funis repositor, sling carrier, uterine sound, irrigating tube, and catheter. It can be used indifferently well for many purposes but not especially well for pelvic measurement. Wellenbergh, Szymanowski, and Van Huevel first took external measurements of the pelvis, then measured the thickness of the bones and soft parts constituting the pelvic walls. They added the latter and subtracted from the former, and thus arrived at their conclusions of the diameters. They were the first to make an attempt at finding the transverse diameter of the brim.

Breit constructed an instrument for the internal measurement of the transverse diameter of the brim. The use of this instrument is so painful that it cannot be used in some cases at all. Freund and Skutsch invented instruments with leaden arms which can be bent by the operator at will. They are difficult to use. Van Heuvel, who has been prolific in the invention of devices for measuring the female pelvis, constructed one to be used on the patient while she is in the upright position. She stands with her legs spread apart, her body bent forward, and her hands grasping the back of a chair for support. The physician stands, or rather kneels, behind the woman and directs the instrument. To a woman of refinement there is something so indelicate, if not revolting, in this proceeding and it is so undignified a position for the doctor that it has not come into general use, at any rate in America or England. Kiwish introduced one blade of his instrument into the patient's urethra. I believe that this procedure may be considered unjustifiable. The pelvimeter of Baudelocque is used to this day. It is well-known so I will not take up time and space to describe it.

I agree with Busch[19] that we must not deceive ourselves, but admit that instrumental pelvimetry has advanced to such a slight degree that we cannot even distinguish positively between a flat pelvis and one which is generally contracted. We read in the writings of our best pelikologists that a positive differentiation between these two types of contracted pelvis can be made *only during the progress of labor.* Baudelocque thought that by use of his external pelvimeter he had made internal measurements superfluous. In this he was mistaken. The obstetricians of our day are just as badly mistaken if they think they can determine the transverse diameter by their external measurements.

Naegele[20] says that in measuring the external conjugate three inches must be deducted to allow for the thickness of the pelvic walls. In very fat women more will have to be deducted. Experience, however, has shown that in contracted rhachitic and osteomalacic pelves the thickness of the pelvic walls varies so much that external measurements give thoroughly unreliable results. Breisky[21] says that the most ingeniously constructed instrument has not been able to dislodge the method of digital measurement to find the diagonal conjugate, as taught by Michaelis.

Summary.—Without putting a forced construction upon any part of the foregoing evidence I believe the following conclusions are warranted:

1. Under ordinary circumstances the normally sized and shaped maternal pelvis is the great obstacle to the delivery of the normal fetal head at term.

2. The maternal pelvis is rather frequently contracted in one or more of its diameters.

3. If the pelvic contraction is slight spontaneous or instrumental delivery may take place without injury to mother or child.

4. If the contraction is greater in degree delivery of the child by instrumental aid will be necessary and in the highest grades of pelvic contraction delivery through the natural passage is impossible.

5. The size and build of the woman afford no criterion as to the size and shape of her pelvis.

6. On the exact degree of contraction will depend the choice of method of delivery of the patient, or the choice as to which of a number of different operations is to be performed in order to save the mother, or child, or both.

7. It is therefore essential to be able to measure correctly the obstetric pelvis, if modern midwifery is to be deserving of its name.

8. So far no one has been able to accurately measure the pelvis in the living woman, and the methods in vogue are but poor and inaccurate attempts at guessing.

The instrument which I desire to bring forward, and pictures of which accompany this article, will enable the physician to measure easily, rapidly, accurately, and painlessly, all the important diameters of the pelvis in the living woman. It will also enable him to determine the shape of the pelvis and in the presence of abnormalities, such as callus, tumor, or deformity, find exactly how much room is available

for the child to pass through. It is constructed of steel and consists of two branches, hinged together at the bottom end, in the form of calipers. It is composed of an outer semicircular branch and an internal irregularly S-shaped branch, each one being attached to a handle. It has a movable gauge which slides on a grooved track and which can be fixed in any part of this track by a set screw. The internal or movable branch is attached to its handle by a pin and socket and has a loop on each side into which a sliding catch can be made to slip which will securely hold the inner branch in either of its two positions, namely, when it points toward its fellow or when it points away from it. The upper ends of the branches are ball-pointed and these points or tips can be made to separate about twelve inches. The distance of their separation is indicated on the sliding gauge.

A leather belt about two inches wide, graduated in inches, halves, and quarters, beginning at the buckle and reading from right to left, accompanies the instrument. (See Fig. 1.)

The internal or movable branch is graduated in inches, halves, and quarters from the ball at its top end downwards.

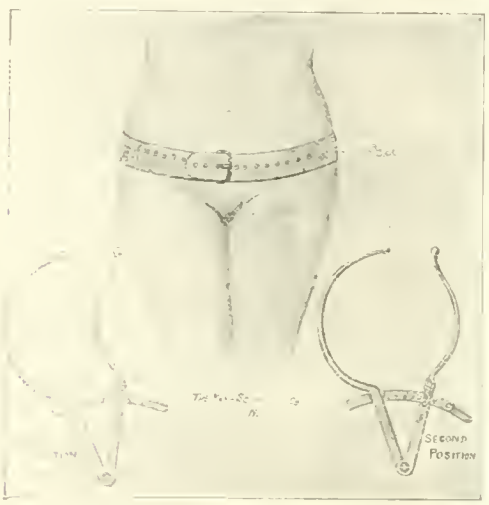

FIG. 1.

The modus operandi is as follows:

The bladder and rectum being empty, the patient is laid on her left side upon a table and her knees are drawn up and kept that way. The belt is put around her hips so that the extreme end of the buckle is just over the symphysis pubis and exactly in the median line of the body. The belt in passing around should be about in the center of the sacrum. The belt is buckled on so as to be fairly tight. Two fingers of the right hand are lubricated with soap and passed into the vagina. The pelvis is now thoroughly explored. The points to be particularly noted are the size of the introitus, the rigidity or relaxation of the perineum, the capacity of the vagina and its direction, the degree of abdominal tension as shown by low situation of the uterus and bulging downwards of the vaginal walls; the pelvic walls are explored for any abnormality and an attempt is made to reach the sacral promontory. In normal cases the fingers will not reach the promontory. It is presumed that the physician who uses this instrument is reasonably familiar with the anatomical landmarks of the pelvis which can in ordinary cases be palpatated through the vagina and rectum. For this reason some very elementary and self-evident instructions will be here omitted.

The fixed branch of the instrument always remains outside of the body, therefore will be named the outer or stationary branch; the other is used internally and will be called the internal or movable branch. The latter can be made to turn in its socket at the handle so that it may point away from its fellow. This is assuming the first position, or it may be turned around to point toward its fellow and thus assume the second position. The object in view is to make the ball-pointed end of the movable branch travel from one particular bony point on the internal surface of the pelvis across the pelvic cavity to a bony point exactly opposite, thus traversing the cavity in a certain diameter. As the distance traveled by the tip of this branch is faithfully recorded on the gauge it is obvious that the record on the gauge will show the length of the diameter traversed. The fixed or outer branch must be kept on one spot during this time, and it is of use only to give a fixed point of support for the instrument while in action.

Assuming that the patient is properly placed, the graduated belt in its proper location, and the instrument in position, the following maneuvers *will give the exact length of the true conjugate diameter of the brim.*

FIG. 2.

FIG. 3.

1. Place the tip of the fixed branch on the strap over the middle of the sacrum. (See Figs. 2 and 3.)

2. Place the tip of the movable branch in the middle of the posterior or vaginal surface of the symphysis pubis.

3. Move the sliding gauge firmly against the handle of the movable branch and fix it there with

the set screw. With the index and middle fingers of the right hand guiding the internal branch, depress the posterior vaginal wall and with its tip probe for the sacral promontory. (See Fig. 5.)

Fig. 4.

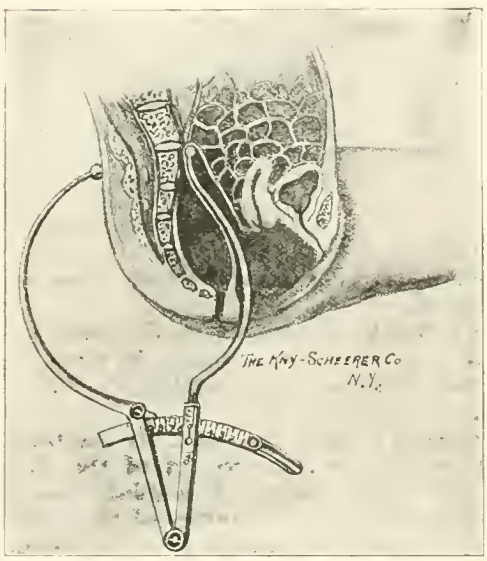

Fig. 5.

5. This will be distinctly felt as a hard bony ridge or prominence. While holding the instrument steadily, read off the number of inches recorded on the gauge.

Fig. 6.

To find the transverse diameter of the Brim:

1. Note the number on the graduated belt which is exactly in the median line of the sacrum.

2. Place the tip of the fixed branch on the strap at exactly half that number of inches. This will put it over the center of the pelvis.

3. With the movable branch *in the first position,*

Fig. 7.

go straight across the middle of the pelvis and up high enough to reach the bony ridge which is the ilio-pectineal line. (See Fig. 6.)

4. Move the sliding gauge up firmly and set it with the screw.

5. Withdraw the movable branch, make it assume the second position, and make its point reach up to the ilio-pectineal line or ridge toward you facing the tip of its fellow on the strap. (See Fig. 8.)

6. Read the number of inches recorded on the gauge.

Fig. 8.

Sometimes it is of interest *to measure the oblique diameter of the Brim.* In that case do as follows:

1. Read the number on the belt exactly in the median line over the sacrum.

2. Subtract one-fifth of that number and place the tip of the fixed branch on the strap at that spot; this will be just over the sacro-iliac joint.

3. With the movable branch in the first position

within the vagina find the left iliopectineal tubercle diagonally across the pelvis.

4. Move up the sliding gauge and set it with the screw.

Fig. 9

5. Withdraw the movable branch, make it assume the second position, and with its tip find the right sacroiliac joint so that as the tips of the two branches face each other they include the right posterior pelvic quadrant.

6. Read off the number of inches indicated on the gauge.

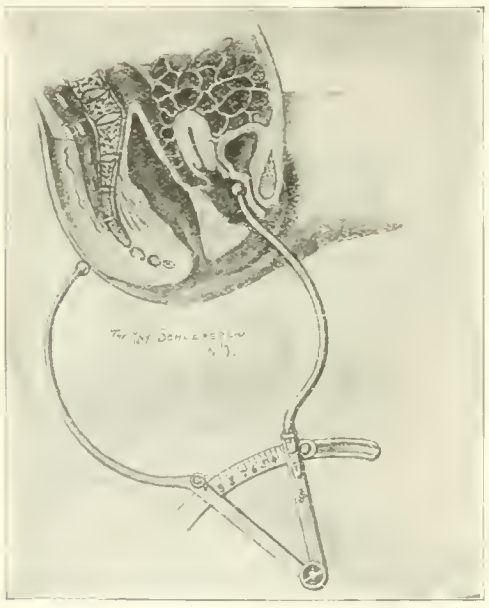

Fig. 10.

To find the inferior conjugate or conjugate of the Outlet:

1. Place the tip of the fixed branch on the strap as low down as possible in the median line of the sacrum. (See Fig. 10.)

2. The tip of the movable branch in the first position finds the lower edge of the symphysis pubis.

3. The movable branch is withdrawn and its tip in the second position made to touch the sacrococcygeal joint. (See Fig. 11.)

4. Read the number of inches recorded on the gauge.

To find the transverse diameter of the Outlet:

1. Place the woman on her back with her knees well drawn up.

2. Mark the skin with a pencil or dermatograph

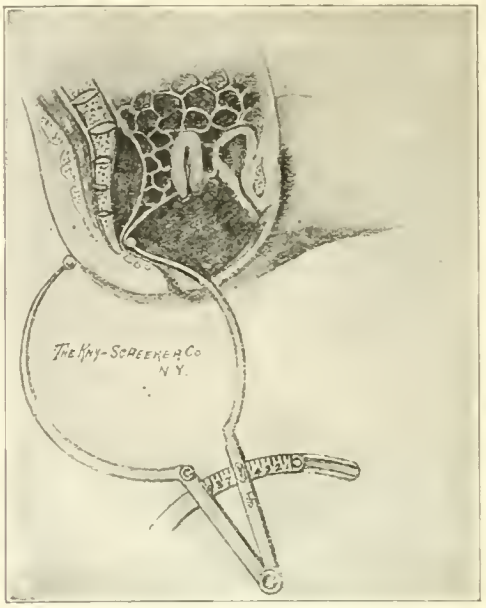

Fig. 11

over the inner edges of the tuberosities of the ischium.

3. Measure the distance between them with the instrument.

The ischial tuberosities are easily found when the woman is in the described position by pressing firmly with one or more fingers against the flesh at the buttock.

Personally I am in the habit, for the purpose of rough and ready measurement of the transverse diameter of the outlet, of pushing four fingers abreast between the tuberosities of the ischium the tips of the fingers pointing towards the patient's urethra. If four fingers abreast are admitted comfortably between the tuberosities it may be assumed that no contraction exists. (See Fig. 12.)

Fig. 12.

The above appear to be the most important diameters of the female pelvis for purposes of Obstetrics. However, under some circumstances, as in callus, tumor, or other kind of obstruction causing irregu-

lar contraction, measurement in other planes of the pelvis may be found necessary.

In making these, if the general rules laid down in the above are followed and the method of pelvimetry is adapted to the case in hand, no difficulty need be feared.

A few points might be well borne in mind, however; namely:

If the introitus is small (and this is not at all common in the last months of pregnancy) or if the perineum is rigid, an assistant may retract the latter with a Sims speculum to give room for manipulation.

In case of great contraction of the vagina from scarring due to a previous severe forceps labor or the ill-advised plastic operation of some surgeon desirous of making a particularly small introitus, the sacral promontory can be easily reached through the rectum inflated with air. The bony points stand out with startling distinctness on examination through the inflated rectum. If all efforts at examination fail, recourse can in exceptional cases be had to anesthesia. I have found it necessary only once to anesthetize a patient; this one was an hysterical onanist who closed her knees convulsively and screamed every time her vulva was touched. In case of very fat women with bulging vaginal walls and great abdominal tension, making it difficult to map out or recognize the bony landmarks, if we put the patient in the knee-chest position and retract the posterior vaginal wall with two fingers so as to allow the pelvic contents to gravitate toward the diaphragm, air entering suddenly will cause the vagina to balloon out. It is perfectly astonishing how easily the bony landmarks can be palpated then, and the pelvis measured.

The pelvic diameters can be measured ordinarily in about five minutes. The pain to the woman, unless violence is practised, is trifling. Some do not complain at all. Some of those who did complain of pain I found on examination to have a fissure of the anus. Swabbing this with a 5 per cent. solution of cocaine made the measurement painless. That the results are accurate I have demonstrated to my satisfaction on the cadaver repeatedly. It is almost superfluous for me to add that all gentleness should be used in the handling of this steel instrument so as not to cause unnecessary pain.

My acknowledgments are due to Mr. Richard Kny of the Kny-Scheerer Company for his uniform courtesy, and to Messrs. Wm. A. Winter and Charles Sorensen for valued assistance and suggestions in the preparation of the plates and construction of the apparatus.

The instrument described herein is presented to the profession with due modesty as becomes an ardent though humble student seeking the Light.

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694 Madison Avenue.

THE TREATMENT OF MENINGOCOCCUS MENINGITIS IN THE FIRST MEDICAL DIVISION OF BELLEVUE HOSPITAL DURING THE EARLY SUMMER OF 1905.*

By EDMUND L. DOW, M.D.,

NEW YORK.

ASSISTANT VISITING PHYSICIAN, BELLEVUE HOSPITAL.

Through the courtesy of Dr. George R. Lockwood, and through the assistance of an unusually efficient house staff, I was enabled in the early summer of 1905 to observe, and in large part to direct, the treatment of one hundred and sixteen cases of meningococcus meningitis at Bellevue Hospital. The conclusions reached I desire to place before you at this time, in order that they may, perhaps, be of service at the possible eve of another epidemic. Few statistics will be given. Statistics are of little value in so small a number of cases, limited to a single epidemic. Deep grounded opinions founded on careful, close, constant observations of individual cases are, however, of great value. The other large city hospitals admitted or retained very few cases of this disease during the latter part of the epidemic, so that the number of cases admitted to Bellevue during that time was relatively large. The meningitis ward was full of cases when I went on service on May first. Sixty-seven cases were admitted after that date, of whom forty-seven per cent. were discharged from the hospital practically cured.

To present the subject of the treatment of these cases properly before you, I shall first describe the character of the disease to be conquered, then, what measures could reasonably be expected to bring about this result, and then the means actually employed. Epidemic cerebrospinal meningitis is excited by the meningococcus. Many varieties of bacteria can excite a meningitis, but it is only the meningococcus that seems to cause the development of an epidemic. Now that the exciting organisms have been identified and studied, custom is beginning to change the former nomenclature of epidemic and non-epidemic meningitis to the more specific etiological terms, meningococcus meningitis, pneumococcus meningitis, streptococcus meningitis, tuberculous meningitis, and so on. When the meningococci gain entrance to the interior of the skull and spinal canal, and when the coverings and the lining of the brain and cord are susceptible to their presence, an intense overactivity of these tissues results. Meningitis is essentially overactivity within a closed cavity. In the meningococcus form, it is a self-limited group of processes. This overactivity is both structural and functional. Structurally the first change to be observed is an extreme dilatation of the blood vessels wherever the bacteria exist.

If we think of meningitis exhibiting during the life of the patient only the lesions revealed by the

*Read at a meeting of the Medical Society of the County of Kings, February 20, 1906.

autopsy table, we obtain a somewhat erroneous impression. One is not then apt to remember the intense congestion, the flowing blood, the absorbing lymph, and the living cells almost boiling with the activity of their protoplasm. The evidence of this intense hyperemia largely disappears at death. Its analogue is seen in the lung, during the first stage of lobar pneumonia. This congestion of the pia mater is excessive and continuous. This greater quantity of blood within the skull increases by its mere presence the amount of intracranial pressure. In a disease in which cerebral pressure is of so much importance, this fact should be emphasized.

The next important structural change is the increased active transudation of cerebrospinal fluid, somewhat modified by the intensified processes. The normal transudation of this fluid depends not only upon the physiological activity of the endothelial cells of the blood capillaries, and the mesothelium of the pia mater and ependyma, and upon the physical process of osmosis, but also upon the physical process of filtration. It is a well-known law of physics that the greater the pressure on one side of an animal membrane, in this case the blood-vessels, the greater tends to be the amount of fluid forced through to the other side, here, into the perivascular spaces. This fact is often illustrated by causing edema to appear or disappear by lowering or raising a leg in which there is a tendency to edema. Coincident wth the congeston of the blood-vessels and the increased exudation of cerebrospinal fluid the leucocytes leave the blood vessels in increased numbers and accumulate in the surrounding and lining cavities. In the meningococcus form of meningitis the leucocytes incorporate into their bodies large numbers of the bacteria. In no other form of meningitis do we find so many intracellular parasites. Because of this the meningococcus was at one time named the diplococcus intracellularis. From the cerebrospinal fluid, which is really a modified blood plasma, a certain amount of fibrin is precipitated, and then the fluid is reabsorbed by the lymphatics and the blood capillaries to circulate again throughout the body. When the cerebrospinal fluid is reabsorbed, it carries with it in solution any chemicals which were produced directly or indirectly by the growth or by the death of these bacteria. These poisons circulate everywhere throughout the body, affecting it more or less, as proved by the characteristic eruptions, and again reach the brain in a diluted form to penetrate to every brain cell in its structure where blood is supplied. In the meantime, the cells composing the susceptible brain covering and lining have been proliferating, and, to a certain extent, desquamating into the cerebrospinal cavity.

The entire picture is one of intense overactivity due to the energy bound up in the individual living body cells, and aided by the force of the increased blood pressure derived primarily from the work of the heart muscle, the *vis a tergo*.

When the fluid is secreted into the cerebrospinal spaces in increased amounts due to the greater pressure of blood and to the greater activity of the endothelial and mesothelial cells, it will accumulate in these spaces unless a commensurate absorption occurs. Inasmuch as lymphatic vessel absorption is due to the physical force of capillarity which is not affected by pressure, this cerebrospinal fluid, often, but not always, tends rapidly to increase in amount, and to attain a pressure which approximates that of the blood in the capillaries from which it was derived. This increased blood supply to the inside of the skull and the spinal canal plus the increased amount of transuded cerebrospinal fluid into the same practically closed cavity must necessarily compress all yielding structures, namely, the brain substance, the veins, and the lymphatic vessels. This pressure upon the orifices of the lymphatic ducts, when it occurs quickly, compresses them so that absorption is then greatly impeded. An analogy is found in the pleural cavity. When we relieve intrapleural pressure in pleurisy with effusion, absorption occurs. Blocking of lymphatics should occur more easily in the skull and spinal cavity than in the thorax, owing to the surrounding, non-yielding walls of bone.

However, the overactivity excited by the meningococci is not entirely structural in its nature. Functional overactivity without apparent change of structure also results in the early stages of the disease. The bacteria and the resultant poisons not only stimulate the various tissues and cells to excessive congestion, secretion, emigration, and proliferation, but also excite the neurons into excessive functional activity. This brain and nerve cell overactivity is most marked where the poisons are strongest. If they are produced adjacent to a cell or its fibers the concentration of the irritant calls for a greater release of energy. If the poisons are brought to other brain or nerve cells by the blood stream from a distance, or by the circulating cerebrospinal fluid, the dilution of the toxin by the blood or fluid permits in the more remote cells a less degree of overactivity.

Frequently the neurons that show excessive action later develop degenerations and entire loss of function either temporary or permanent. The functional overactivity and the underactivity of the various cells results in a large number of symptoms. Many of these symptoms have indirect serious consequences, such, for example, as cardiac exhaustion following intense restlessness. Moreover, in addition to the effect produced by the local or general, chemical or zymotic, action of the poisons, we have to consider the mechanical effect produced upon the neurons by the cerebrospinal fluid when this accumulates with sufficient force to compress the substance of the brain and cord. This increased pressure of cerebrospinal fluid does not always exist in a meningitis. An analogy is again found in pleurisy. The exuded fluid in a pleurisy may be reabsorbed as rapidly as it transudes, so that what is known as dry pleurisy results. If this reabsorption does not take place, we get pleurisy with effusion. In both forms of pleurisy, the membranes are intensely congested. Likewise in a meningitis, we may or we may not have an increased amount of cerebrospinal fluid remaining in the skull and spinal canal. It depends upon the various factors already mentioned. In either case, however, a certain amount of brain and cord compression occurs from the additional circumstance of intravascular blood pressure. The former is difficult to combat, the latter not so difficult. This intracerebral pressure, excessive from accumulated cerebrospinal fluid, or moderate from blood supply, produces a disturbance in the functions of the neurons, and various additional symptoms result from this alone.

After the process of overactivity has lasted about two weeks in a patient who does not die, the meningococci largely disappear from the coverings of the brain, and the structural and functional processes of the various cells approach the normal. Leucocytes no longer emigrate in such numbers from the blood vessels; congestion disappears; secreting activity of the endothelium and mesothelium lessens; and digestion of the dead leucocytes and fibrin would

again leave the subarachnoid and the ependymal spaces in the same condition as before were it not for the damage done by the previous cell proliferation. The new connective tissue and other cells have left a pia mater considerably thickened, and the orifices of the lymph vessels somewhat occluded. Absorption in many cases is thus rendered imperfect. The clear cerebrospinal fluid, now nearly normal in character, tends to accumulate within the ventricles of the brain, and within the spinal canal, and within the posterior fossa of the skull around the cerebellum and beneath the tentorium cerebelli. As a rule, the fluid continues to be absorbed from the spaces around the cerebrum above the tentorium so that the pia mater in this locality is often caused to be dryer than normal. The presence of this abnormal amount of cerebrospinal fluid occurring after the subsidence of meningitis, is known as hydrocephalus. Its accumulation is apparently due to purely mechanical reasons, although some claim that functional overactivity of the secreting ependymal cells continues to exist. Whatever may be the reasons for the development, its presence causes a functional derangement of various neurons by its mechanical pressure, with resulting symptoms usually terminating in death.

Much has been said about the closure of the foramen of Magendie being necessary to the production of a hydrocephalus. This foramen lies at the lower apex of the fourth ventricle and connects the large lymph sac covering the cord and cerebellum, with the various ventricles of the brain. I have never seen a case of hydrocephalus following meningitis in which the ventricles were distended with fluid, that did not during life give evidence by spinal puncture that the space surrounding the cord was also distended with fluid under pressure. If ventricular hydrocephalus is due only to a blocking of the foramen of Magendie, to what is the always associated distention of the subdural space over the cord and cerebellum due? We can come to but one conclusion. Fluid accumulates in the subdural space beneath the tentorium and in the ventricles, because absorption from the subdural space is imperfect. It does not accumulate in the subdural space over the cerebrum because absorption does occur there. Moreover, fluid accumulating in the lateral ventricles can expand the cerebrum so that it will be pressed tightly against the calvarium practically obliterating the subdural space over the cerebrum as shown by the flattening of the convolutions. The fourth ventricle is not large enough and is not situated so that fluid accumulating there can expand the cerebellum or the medulla or the cord. Consequently there is always a space of considerable depth surrounding the cerebellum and the spinal cord. Fluid accumulates within this space in hydrocephalus with a pressure equal to that within the ventricles.

To recapitulate briefly, the meningococcus excites for about two weeks an intense structural and functional overactivity with sometimes a resulting increased cerebrospinal pressure and with sometimes various degenerations. This is a self-limited disease. It may subside, and the patient recover. It may be followed by one or more relapses, or it may be succeeded immediately, or after an interval of several weeks, by a condition of hydrocephalus. Because the processes and conditions involve the central nervous system an unusual number of symptoms manifest themselves. Death may occur from either the meningitis or the subsequent hydrocephalus. Inasmuch as the meningitis is essentially an active process and the hydrocephalus is essentially a passive condition, the treatment of each is entirely different.

Let us consider what we may hope to do to help the patient who has meningitis. Can we destroy or nullify the poisons or the bacteria that excite the disease? Can we lessen the overactivity of those functional or structural processes which do damage? Can we support the resistance of the patient otherwise so that he may combat successfully the invading army of parasites? To the first question we must at present answer, No. The only way the poisons or the bodies of meningococci can be nullified with our present knowledge, is by assisting the patient to do it himself. Little is known as to the exact means the human body uses to make meningococcus meningitis a self-limited disease. It is known that it is difficult to cause a septicemia by the inoculation of the meningococcus into the blood of small animals, whereas a similar injection of its cousin, the pneumococcus, quickly results in septicemia and death. It is also known that leucocytes within the cerebrospinal fluid of a meningococcus meningitis contain within their protoplasm numbers of these organisms, so that it is reasonable to suppose the leucocytes are active in combating the invading parasites.

To diminish the intense cellular activity, and its untoward results, probably our best remedy lies in the use of some alkaloid of opium. A minute dose of morphine, administered hypodermatically to a patient in the early stages of a meningitis, lessens greatly the overactivity of all of the brain and cord centers. It promotes bodily rest and a saving of the necessary reserve strength. It relieves the intense pain, and the subsequent demoralization of the patient's mental condition. It permits relaxation, and establishes a harmonious equilibrium everywhere. An accessory measure which helps is to be found in the maintenance of a normal body surface temperature. This allows the blood to remain at the surface of the body, and relieves the congestion of the brain. To accomplish this, the temperature of the room or surrounding atmosphere must be that of summer heat. The skin must not become chilled. Correspondingly the body should be sufficiently clothed and the hands and feet kept warm, by stockings and hot water bottles, if necessary. The bedclothes must help to maintain the normal warmth. If they are oppressive to a hyperesthetic skin, they must be elevated. The weather and the temperature of the ward seemed to have much to do with the progress of the cases. The results were uniformly bad at the beginning of the epidemic during the cold months of February and March, and were uniformly good during the warm months of June and July. How much the temperature of the weather had to do with these results is not certain because the treatment of the cases was at those times materially different. It might be argued that the bacteria were less virulent when the epidemic was drawing to a close. Possibly this is true, because the patients developing the disease gradually became relatively fewer; but, on the other hand, the patients observed late in the epidemic entered the hospital with symptoms that were fully as severe as those seen earlier in the season. Of the forty-two patients admitted in May, twenty-one were cured. Of the four admitted in August, only one was cured. When the weather was mild, these late cases did well. If a cold night supervened, all of these late cases became worse. Outside of the question of the virulence of the microorganism it did seem to be proved that the temperature of the room had much to do with the course of the disease. Warm baths maintained for some time and repeated frequently accomplish a good result in like manner. They lessen the blood supply to the head and promote muscular relaxation.

They are not always practicable. Frequently they induce voluntary struggling on the part of a child. Often the shock to the sympathetic nervous system is, in the case of meningitis, injurious. Warm baths for a number of patients require the services of many nurses in a hospital ward, and this is a serious objection to their use. When it is practicable to have extra nursing for a patient, and when the nurses thoroughly dry the skin after a bath, without subjecting the patient to injurious draughts of air, and when the patient does not object to the bath, much benefit is sometimes obtained from its use.

Another method of lessening intravascular pressure was tried in Bellevue Hospital last year with much success. It was noticed that when a patient was deemed well enough to be allowed an extra pillow under the head, he improved much more rapidly than was expected. This led to the trial of the effect of posture upon these cases at an earlier stage. It was observed that when the bodies of patients with severe tubercular meningitis with extreme motor restlessness were supported for a time into a half upright position, the active symptoms often disappeared rapidly, and the patient apparently slept quietly. Occasional observation was, however, necessary to ascertain the degree of elevation needed to obtain a favorable result. The effect of this brain anemia did not apparently lengthen the course of tuberculous meningitis, but merely ameliorated the distressing symptoms. In the case of meningococcus meningitis, the patients seemed to be uniformly helped by its use. The symptoms were less marked, the course of the disease somewhat shorter, and the convalescence more rapid. In the cases that died, it apparently was of benefit, and delayed the fatal termination. It was apparently of little value in the cases of hydrocephalus, in which, as I have stated, the trouble is not too much blood going to the brain, but rather too much fluid held in the brain. The posture treatment of meningitis has been claimed by some to work by favoring drainage of the cerebrospinal fluid. Inasmuch as the absorption of this fluid is chiefly performed by the lymphatics where capillarity is the entire physical force, gravity could not be expected to be of great assistance. In the employment of posture as an aid to lessen the amount of cerebral activity and cerebral intravascular pressure, care should be taken not to abuse the advantage by producing an injurious amount of cerebral anemia. A reasonable amount of blood is necessary for the physiological processes of the cardiac, respiratory, and other centers. If the posture becomes so elevated that the intravascular pressure diminishes until it equals in degree the already existing pressure of cerebrospinal fluid, the blood capillaries tend to become compressed, and blood is prevented from entering freely to the finer parts of the brain. A slight elevation of the head and shoulders usually suffices at first to produce beneficial results, and this is to be increased rapidly as convalescence proceeds.

Ice to the head may be of some value. If its pressure annoys the patient, its advantages are not so great. Lumbar puncture during the first few days of a meningitis, or of its relapse, is of real service. It apparently acts by relieving the pressure of the cerebrospinal fluid so that absorption becomes again possible. An analogy is seen in pleurisy with effusion. It is apparently of no permanent value in the subsequent hydrocephalus in which the pia mater is permanently damaged, although it may then produce a very temporary amelioration of the symptoms. It is possible that autodrainage may solve the problem in these difficult cases.

Before the subject of intracerebral pressure is dropped, it should be stated with much emphasis that the stimulants which are frequently given in this disease are positively harmful. Their use is irrational. The brain always has too much blood, and has been stimulated to the limit by the poisons of the bacteria. The administration of other stimulants aggravates this condition. This is an error frequently committed by uninstructed members of the house staff. They often administer stimulants to a patient suffering from another disease with benefit, and they jump to the conclusion that the condition of the pulse in meningitis requires a like stimulation. If we inspect the histories of many cases of meningitis reported by some observers, where conclusions are reached as regards treatment by anything on trial, such as antitoxin, horse serum, lysol injections, lumbar puncture, baths, and other various remedial measures, it will in a large proportion of cases be noted that the amount of stimulation administered has not been taken into account, although it is frequently unadvised and excessive. The experimental conclusions drawn in some of these cases are therefore inconclusive. Possibly there are two exceptions to these statements. Minute doses of alcohol in the form of whiskey or brandy often seem to do real good. It apparently acts by maintaining the peripheral cutaneous circulation, and by affording a certain amount of latent energy. When the first sound of the heart is absent, the second pulmonic sound accentuated, and the hands and feet cold and blue, occasionally minute doses of digitalis benefit, but strychnine, adrenalin chloride, nitroglycerin, atropine, and large and continued doses of digitalis, whiskey, or any alcoholic food do immense damage, and increase the liability to hydrocephalus, if the patient lives long enough.

Of much more importance to the patient in the treatment of this disease than any measure mentioned, with perhaps the possible exception of the use of morphine and the elevation of the head and shoulders, are the measures calculated to sustain and fortify the patient. These include forced feeding, by gavage, if necessary; plenty of fluid; the usual means to relieve constipation, a condition which frequently causes fever and an exacerbation of symptoms in a convalescence. They also include a plentiful supply of pure air to the lungs, and an abundance of sunshine to the body, remembering that when there is photophobia the eyes should be protected from too much light. Nothing seemed to help the meningitis patients at Bellevue Hospital so much as being kept in beds put out of doors when weather permitted, where the patients could secure an abundance of sunshine, and warm, fresh air. Probably the best treatment of meningitis in the winter, when this is not possible, would be a trip to a warm southern climate where these conditions prevail.

Now, let us consider the routine treatment as actually practised in the First Medical Division during the early part of last summer. When there was admitted to this division a patient suffering apparently from an active meningitis, he was at once put to bed in a warm, darkened, quiet room, with his head and shoulders slightly elevated. If the pains in the head were severe or the restlessness extreme, the patient was then given a minute dose of morphine solution hypodermatically. This was repeated until comfort or quiet was obtained. If it did not control these symptoms, a warm tub bath was administered, in which the morphine seemed to become effective, so that subsequent baths were not often necessary. As before mentioned, the ordinary hos-

pital ward of meningitis patients does not contain nurses enough to give systematically many tub baths. In the meantime a history of the duration of the patient's illness, enabling us to give further treatment, was obtained, when possible, from the friends or relatives. This information is frequently sufficient to allow us to determine whether the symptoms are those of a beginning meningococcus meningitis, a relapse of a meningococcus meningitis, a beginning tuberculous meningitis, or a hydrocephalus—a diagnosis not always easy to make from external symptoms alone.

After these primary measures the patient's lumbar canal was punctured and a reasonable amount of fluid was allowed to flow into sterile test tubes. This withdrawal of fluid is not always possible, unless careful technique is employed. It may often be easily obtained when otherwise difficult, by flexing forcibly the entire trunk and head. Lumbar puncture serves two purposes. It is a means of accurate diagnosis, and it often relieves urgent symptoms and ameliorates the course of the disease. Inasmuch as the primary diagnosis is of so much importance in the treatment, a word is necessary as regards the conclusions to be drawn from the appearance of the fluid. Fluid obtained from puncture of the spinal canal, when turbid, usually denotes an acute meningitis of a nontuberculous nature. It may be from a primary attack, or it may be from a relapse. This turbidity is due chiefly to polynuclear leucocytes. The turbidity may vary from a slight milkiness of the fluid to a creamy pus. In meningococcus meningitis, large numbers of the leucocytes contain the organism, which, because of this feature, was formerly called the *Diplococcus intracellularis*.

When the fluid obtained is clear, it signifies either the fluid from a tuberculous meningitis, or the fluid from a hydrocephalus. The hydrocephalus may have followed an acute meningococcus meningitis. When normal cerebrospinal fluid is centrifuged, and the resulting precipitate is smeared upon a glass slide and examined by a one-twelfth inch oil immersion lens, it shows about nine to twelve leucocytes to a hundred fields. The fluid from a hydrocephalus does not contain a greater number. The fluid from a tuberculous meningitis shows many more leucocytes than this, but they are chiefly of the mononuclear variety, in contrast to the meningococcus meningitis, and, moreover, they do not contain the meningococci. After a provisional diagnosis had been made from the gross appearance, and possibly from the microscopic findings, this fluid was sent to the pathological laboratory for a final bacteriological diagnosis. Sterile fluid usually signifies tuberculous meningitis or hydrocephalus. In some of the cases smears from the nose, mouth, ears, and vagina were also cultured. Frequently a smear roughly obtained from the nasopharynx led to a slight bloody, nasal discharge, which should not be incorrectly interpreted.

The next therapeutic measure was to give the patient a series of doses of calomel, and this was followed throughout the course of the disease by the necessary amount of mild laxatives and enemata. Frequently in the course of a convalescence an exacerbation of temperature denoted a constipated bowel. Its relief would be followed by a normal temperature. Two days later another rise would occur, only to be relieved in the same way. These intermittent rises of temperature might lead one at first to think that the intermittent type of meningitis was present. The hypogastrium was examined to see if the bladder was overdistended. The patient was given milk, or peptonized milk, in sufficient quantities every two or three hours. If necessary, it was administered by gavage. Vomiting was but rarely seen after the first day or two, except when alcohol had been administered. As the disease advanced, a greater variety and quantity of food was given. A proper amount of water was also given at regular intervals. This was especially necessary to replace the large amount lost by the heavy perspiration. If desirable, the nurse was obliged to measure or to estimate, and then record the amount of food retained, the amount of water taken, and the amount of urine voided. I have always believed that the time spent by the nurse in recording on charts and in books the temperature, pulse, and respiration, could be spent to much greater advantage to the patient by charting the measured or estimated amount of food and fluid actually retained.

Having looked after the comfort and nutrition of the patient, the next effort was to supply an abundance of sunshine and warm, fresh air. This was done in the cold months by providing sufficient cubic air space in the ward to each patient, by having numerous steam radiators installed, by having free outside ventilation, aided by electric fans, and by having large window space. In the warmer months the beds were put out of doors under an awning where they remained all day and night, unless the weather became chilly, when they were housed in an adjoining pavilion. All other methods of treatment of the principal disease were discarded after disastrous results.

Complications received appropriate treatment. Conjunctivitis from open eyelids was helped by bichloride of mercury ointment; otitis, by paracentesis and irrigation; bed sores, by relief of pressure and by mercury plaster strapping; vaginitis, by isolation and irrigation; herpes, by the application of styptics; arthritis, by local applications; and bronchitis, by mild and stimulating expectorants. When the patients began to improve, more pillows were allowed and the amount of food was increased. If cod-liver oil was tolerated, this was also added to the diet. Inunctions of the body with cocoa butter or cocoanut oil kept the skin in good condition. Plenty of nonirritating dusting powder, and the free use of bed rings and the frequent change of position, were also essential. When involuntary passages of feces and urine rendered extra protection to the body and bed imperative, it was thought that diapers and obstetric pads were fully as efficacious, and much less harmful to the patient, than the use of rubber sheets covered only by a thin cotton sheet.

A sudden exacerbation of the symptoms during convalescence with the appearance of a turbid spinal fluid denoted a relapse, which was usually much benefited by lumbar puncture and the measures already outlined. If convalescence became prolonged, or if an exacerbation of symptoms occurred, with the spinal fluid clear and profuse, the hydrocephalus that this signified was much more difficult to relieve. Lumbar puncture in hydrocephalus gave occasional temporary help, but frequent tappings did not appear to be of much benefit. Massage and position of the body prevented to some extent the obstinate contractures. Food, air, and sunshine, coupled with time, semed to be the only remedial measures of value in hydrocephalus. Autodrainage by operation was not tried in any of these cases. Many of these cases of hydrocephalus left this hospital apparently cured, and others were sent out to Sea Breeze for future improvement.

Considering the poor results obtained thus far by the more radical measures in the treatment of meningitis, the results obtained in the last two epidemics

at Bellevue Hospital by these simpler rational methods warrants their continued employment until some other treatment shall have been definitely proved elsewhere to be more efficacious.

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TWO UNUSUAL EPILEPTIC HISTORIES.

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Two interesting and even graphic instances of epilepsy have come under my observation within the past year or so. Finding little in literature to correspond to these histories, I have been tempted to give them publicity. I am indebted to Dr. Depeyster Howland, of this city, for the notes of Case I, and to Dr. D. T. Marshall, also of New York, for the history of the second patient. I have presented the bare outline of the history, reserving until a future time the discussion of the etiological and other factors concerning them.

Case I. *Otitis Media, with Hemiplegia; Partial Recovery; Development of Epilepsy; Status Epilepticus; Recovery.*—H. B. O., a girl, aged ten years, gives the following history, which has several points of unusual interest. Her paternal aunt had attacks of epilepsy of the petit mal type for fifteen years. Eventually she recovered and died at the age of sixty-nine. The rest of the family history is negative in every particular.

The patient was perfectly well and in good state of development, walked and talked as well as other children of her age, until November 23, 1895, when she was eighteen months old. She was then taken ill, and complained of pain in her right ear. There was a moderate purulent discharge from the second day; this lasted for several days. Treatment was given by the family physician, who laid the trouble to teething. The pain and local symptoms subsided, and on November 27, she was taken out of bed. It was then seen that she was paralyzed on the left side.

The left side of her face drooped, her left arm was paralyzed, and her left leg was also entirely useless. She was unable to walk, dress herself, or use the left side of her body at all. She had no loss of sensation.

She received daily massage of the leg for six months, with the result that she regained use of the limb, with the exception of flexion of the toes and outward rotation of the leg.

The arm and the left side of her face remained paralyzed; and in her subsequent growth her left arm remained somewhat small, and her left nostril was not so well developed as her right. The facial paralysis gradually improved, so that it was scarcely noticeable.

Her mental development was normal; she talked plainly at two years and read at seven. In arithmetic she was a trifle dull. In her home life she was extremely orderly and neat, everything being put in its proper place and kept there. Her disposition was good; she was not cross and never complained of anything. Of the diseases of childhood she had measles and whooping-cough, both before she was six years old.

She went on normally until about eight years old. Then, in February, 1903, she had a slight convulsion one night and cried out in her sleep. Nothing else abnormal was noticed until March, 1903, when she began to have momentary lapses. She would stand still for a moment, stop her work, play, or speech, and then go on again unconcernedly. After these attacks she often asked what time it was, or where her bed was. It made no difference where she was: at home, visiting, or in school, she asked the same questions. This went on for about one year, during which she had but one chill or convulsion. In the following summer, however, she began to have slight convulsions, at intervals of several weeks, increasing in frequency until she had two or three in a week.

In July, 1903, Dr. E. D. Fisher, of New York, saw her, and made the diagnosis of epilepsy. Her convulsions increased both in number and in severity. There was no aura, no especial order of involvement, nor any particular position of the limbs. The head would droop a bit, the eyes become fixed and staring, the mouth open, and then she would fall or collapse. The arms and legs would develop tonic spasms, even the paralyzed arm being strongly contracted and the fist firmly clenched. She also had slight clonic contractions of the jaw. She had absolutely no cry, and her loss of consciousness was not absolute. Her eyes rolled upward, with pupils sometimes dilated, sometimes normal, but always reacting to light. The duration of the attack was slight, sometimes only a few seconds. At first she was a bit drowsy and tired after the attacks, but would go on with her work. Later she was very much confused and suffered from loss of memory.

In May, 1904, Dr. Berens removed adenoid growths from her pharynx. Immediately following the operation she had four convulsions, but thereafter for two months had none. During the third month they recurred with increased severity. Urine examined on July 22, 1904, showed slight albuminuria and a few granular casts. No sugar, no indican; specific gravity 1.035.

I saw her on July 28, 1904, and confirmed previous diagnosis.

From this time on the attacks became more and more frequent, being as numerous as ten a day. The mental state became much clouded. She called the writer (D. H.) by her sister's name. She was irritable, despondent, said she wanted to die. When asked to get a pair of scissors she would bring a glass of water, and make other similar errors. She forgot her songs, and in her reading she had to go back to her alphabet books. Still she retained her orderly habits and her taste for painting, in which she employed herself by the hour, carefully doing each detail.

On several occasions, when her pulse was taken, during and after the attacks, it first rose to 100 and then fell slowly to 60. The normal is 78. She had no loss of sphincteric control. Still there was no aura nor order of involvement.

On September 9, 1904, she was taken with vomiting, severe and constant, for three days; all food and water was ejected as soon as swallowed. The tongue and teeth were thickly coated. She complained bitterly of pain in the right occipital and parietal region, extending sometimes to the right side of the face.

The writer saw her on September 13. She was in bed, having almost constant tonic convulsions in her legs, and was very dull, but not at all comatose. Pressure on the right side of her head was painful. She had herpes on her lips, and her face was somewhat flushed. The pupils

were moderately dilated and reacted to light. Temperature 99.6,°F. pulse 80–90, full, strong, compressible. One week later she recovered, became brighter, and played about the house. For a few days she had occasional convulsions, and then they ceased and have not returned, nor has she had any psychic attacks. On November 19 the writer examined the patient's ears, and found a small old cicatrix on the right drum membrane. On November 28 she moved her left thumb voluntarily for the first time since infancy, and did so whether her eyes were open or shut, and said she knew it moved.

The general condition has greatly improved, including a gain in weight of twenty pounds. The left arm above the elbow has grown considerably in size, and the tone of the muscles has improved. The facial expression is good, the paralysis having disappeared. Mentally she is a changed child, being as bright as the average child of her age. She is cheerful and takes an active interest in all that she does. Of the period during which she had her convulsions her memory is somewhat poor. Of her attacks she has no knowledge.

Up to the present time, January 31, 1906, she has not had a return of her attacks.

Case II. *Santonin Poisoning; Retinitis; Nephritis; Meningoencephalitis; Permanent Epileptic condition.*—The patient is a girl, the only child of healthy parents. She had always had fair general health, though somewhat nervous, and had always been much constipated.

In the evening of November 5, 1902, after passing a lumbricoid worm, the girl was given one santonin troche, U. S. P. (These troches are supposed to contain about one-half grain santonin.) On the morning of November 6 she was given another troche of santonin and a tablespoonful of castor oil. The castor oil failed to act, and the girl had no movement on November 6.

At seven o'clock on the morning of the next day, November 7, the mother noticed that the girl was unconscious and was in convulsions. How long the little girl had been so the mother did not know, as the patient made no outcry. She was then given a hot mustard bath and the family physician sent for. When he arrived, at 7:30 A.M., November 7, the child was unconscious, and was having a spasm every fifteen minutes. She was given an enema, a short rectal tube two inches long being used. At 11 A.M. a high enema was given, a rectal tube twelve inches long being inserted well up. From 7 A.M., November 7, until 7 A.M., November 8, convulsions occurred at intervals of from fifteen minutes to half an hour.

Beginning at 11:30 A.M. on November 7, chloroform inhalations were resorted to, to abort or relieve the spasms. These inhalations were kept up for twenty-four hours, or until the cessation of respiration during the spasms was so prolonged that it seemed inadvisable to employ it further. After the first twenty-four hours, it was necessary to resort to artificial respiration by the Sylvester method, during the spasms.

The girl recovered consciousness and spoke for the first time about 7 A.M., November 9—forty-eight hours after the onset of the attack.

The treatment of the patient during the stage of unconsciousness was as follows: November 7, 7:30 A.M., enema; 11:30, high enema; beginning at 11:30, chloroform for spasms and ice bag to head; 12 M., eight grains sodium bromide by mouth; 2 P.M., pulse 130, respiration 36, temperature 102° F.; 5 P.M., enema, magnesium sulphate, one ounce in a pint of water; 6 P.M., grs. 1-30 pilocarpine hydrochlorate, hypodermically; 6:30, above dose repeated. This brought on profuse perspiration; 7 P.M., enema, one pint cool water; 9 P.M., pilocarpine, grs. 1-40; 9:30 P.M., codeine, grs. $\frac{1}{8}$ by hypodermic injection; 10:30, 20 grs. sodium bromide, by rectum. November 8, 12:30 A.M., a spinal ice bag was applied, an ice cap having been worn continuously, from the beginning.

From this time on restlessness and irritability were less and the interval between attacks was lengthened. The patient soon began to show signs of exhaustion. When attacks came on the spasm of the respiratory muscles was so long that the patient became very much cyanosed, and artificial respiration had to be resorted to. After the first day the patient could swallow nothing. An enema of one teaspoonful of panopeptone, well diluted, was given every two hours. At 7 A.M., November 9, consciousness returned.

At this time, and for three weeks afterward, the girl was blind, having scarcely any perception of light. No fundus changes could be detected. From November 9, the time of regaining consciousness, until November 25, when her temperature became normal, the girl was exceedingly restless, picking at the bedclothes and at her nose and ears, and keeping up a most exasperating cry most of the time.

Her temperature subsided gradually to normal on November 25, where it remained until December 10, when there began to be a rise of one or two degrees in the evening, possibly due to a nephritis, which had been developing for some time. December 12, temperature 101° F.; December 13, temperature 102°F.; December 14, temperature 103° F.; December 15, 104° F.; December 16, 105° F.

December 16 she passed but eight ounces of urine. She was totally blind, restless; the skin was dry; the urine was loaded with albumin, and the feet were slightly swollen, eyes puffy. Eight grains of theocin was given in four doses.

December 17 she passed thirty ounces of urine, and the temperature fell to 100° F. December 18, evening temperature, 104° F. December 19, began with a daily dose of bitartrate of potash in one pint of lemonade. December 19, temperature 103.5° F. December 20, 99.5° F., 16 ounces of urine. The temperature was 99° F. in the evening and normal in the morning, for one week after that, the amount of urine passed being about twelve to fifteen ounces daily.

Up to December 30, temperature had remained normal and albumen had disappeared entirely from the urine. The girl's sight improved with the fall in temperature, and returned to normal with the disappearance of the fever and the albumen. From this time on till January 20, 1903, there was a steady improvement in health and strength.

On or about the early part of February, the mother noticed that the child would suddenly fall down, or rather *sit* down, and as quickly get up and go on with her play as if nothing had happened. This "sitting down" was a sudden bending of the thighs on the trunk, the knees remaining unbent. There was no cry, no pain, simply a sudden drop and up again, as though the muscles were weak and gave way. These fallings were more frequent during or after ex-

citement. Usually they occurred about six to ten times a day.

In March the girl began falling forward instead of sitting down, so that she frequently fell against the furniture and cut her face. In the early part of April a tight and adherent prepuce was treated, relieving the clitoris. There were no retained secretions.

In the latter part of April, 1903, the attacks ceased, but recommenced late in May or early in June of the same year, when she had from two to ten daily. Sometimes they lasted from half a minute to two (?) minutes. July 8, the attacks ceased for three days. July 11, the attacks recommenced more severely than ever.

On August 12 the physician was holding the child on his lap when she had a severe tonic spasm, very closely resembling an epileptic seizure. This attack continued for one minute, by the clock. The girl was in a sitting posture. Suddenly her head bent forward, her muscles were in a state of strong contraction. She cried out "Mamma, Mamma!" in a weak voice, and seemed to be in great pain. There was no suffusion of the face, no frothing at the mouth, and seemingly no unconsciousness. In a similar attack in the morning, she passed water, and while doing so she cried, "Oh, Mamma, I am peing!" She yawned several times immediately after the attack, and was evidently weak, but she showed no inclination to sleep. Her appetite and general health at present seem good. She needs laxatives to move her bowels.

While in my office at the time of the first consultation, the patient had two of the attacks, which have been characterized as simple muscular weakness. They were typically of this character. The girl, simply and without any loss of consciousness, seemed to sit down, or in one instance seemed more to slip, the floor being a polished floor. In no particular respect could it at this time have been recognized as a *petit mal* attack, notwithstanding the extreme variability of this type of epileptic seizure.

As for the distinct epileptic seizures, which ultimately developed, I have seen but one, and this was a typical. But the family physician has seen a number, and he has had a large experience with epilepsy in children. Thus there is little doubt in my own mind, at least, as to the correct diagnosis.

The further history is of interest. In a letter sent to me by Dr. Marshall, the family physician, he reports improvement:

"August, 1903, had fits, one, two or three times daily. Severe fits two or three times a week. Gave cicutine hydrobromate in full doses. Fits not controlled. September 12, 1903, began giving bromipin ʒ ii, three or four times daily. No appreciable effect. Continued until November 11. November 1 the mother reported that the 'falling spells' had ceased for a week (the dropping on the floor and getting up immediately, as described above), but that the 'real hard spells' were as numerous as ever. November 9 she reported that the child had had no fits during the day, but had had them in bed just before rising in the morning. November 11, 1903, began giving a bromide preparation. November 17, the child's legs were so weak that she staggered and could scarcely walk alone. Stopped the medicine one day, and then began giving it again, and have continued it to date, December 16, 1903. The girl has had no fits of any kind since November 9. The only other treatment beside the sedatives mentioned, has been the continued use, three times daily, of an intestinal antiseptic tablet, containing calcium sulphocarbolate, sodium sulphocarbolate, and zinc sulphocarbolate, each 5 grains; and a laxative composed of aloin, gr. 1-25; strychnine sulphate, gr. 1-500; atropine sulphate, gr. 1-2500; oleoresin of capsicum, gr. 1-500; and emetine, gr. 1-500. Beginning with six of these daily, in a month, the dose was gotten down to one every day or two. Since September 1, 1903, the child has had three treatments a week, with the Marshall vibrator, the machine being applied to the roots of the spinal nerves along the whole length of the spinal column, the treatments lasting about five minutes."

On January 16, 1906, the family physician writes: "In reference to our patient, I would say that on looking over my book I find that the girl has had an attack which from the description, I presume to be epilepsy, about once in two months, since December, 1903. You have her history previous to that Most of these attacks are very mild, and of only momentary duration. She had quite a severe fit on January 1, 1905. I was sent for, and the next day she showed the typical rash of measles, from which she recovered in about a week. In the fall I advised her mother to send her to a kindergarten. I am sure that the diversion and the getting away from her nagging mother has done her good. I expect her to recover fully some day. She has had from five to ten grains of brometone daily for varying periods, whenever she seemed nervous, and along about the first of the month, when an attack might be expected."

As to the interpretations, I leave these to the reader. It is not improbable that in the first patient, the development of an abscess followed the otitis, and pressure or partial destruction caused the paralysis and the latter epileptic phenomena. The recovery, if such it proves to be, may be attributed to the rupture of a secondary cyst and the relief of pressure.

In the second patient, the well-known poisonous symptoms of santonin offer a plausible explanation of the convulsive seizures, the amblyopia and the nephritis. The relation of santonin to naphthalene suggests the type of pathological change that occurred in this child's nervous tissues. An explanation offered in part before a recent meeting of the Brooklyn Neurological Society, needs experimental observation before reaching a final stage as truly satisfactory. This I hope to be able to offer at a later period.

64 West Fifty-Sixth Street.

OPERATIVE TECHNIQUE AND AFTER-TREATMENT FOR MASTOIDITIS WITH EPIDURAL COMPLICATIONS.*

By W. SOHIER BRYANT, A.M., M.D.,

NEW YORK.

The following cases contrasted illustrate three interesting and important points:

First, the use of the front-bent gouge in preference to a mallet-driven instrument;

Second, the use of the modified blood clot in aural surgery;

Third, the question of packing the mastoid wound after exposure of the dura mater.

Case I.—This case was demonstrated at the an-

*Read at the meeting of the Southern Section of the American Laryngological, Rhinological, and Otological Society, at Norfolk, Va., on January 13, 1906.

nual meeting of the American Otological Society in 1904. Three months before the operation the patient suffered from grippe followed by earache. A month later headaches began. At this time there was a seropurulent non-fetid discharge from one ear and very little tenderness behind the ear.

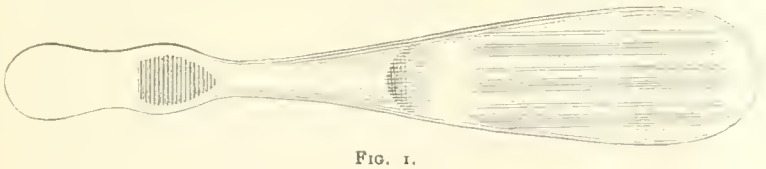

Fig. 1.

There was no edema. On the day previous to the operation the tympanum was filled with inflamed tissues which had been partially removed on several occasions. Pressure showed marked tenderness of the mastoid process, this tenderness being more intense posteriorly. The patient suffered from continuous severe headache. The temperature was 100° F. by mouth; pulse 88; respiration, 20.

Operation.—I commenced the usual mastoid operation under ether anesthesia. An incision convex backward about 2 cm. behind the posterior edge of the meatus was made down to the periosteum, extending from the tip of the mastoid process to the level of the upper attachment of the pinna. With a sharp Bacon's periosteum elevator (Fig. 1) the periosteum was divided in the line of the incision and pushed forward and backward, great care being taken not to lacerate it.

When the bone was well exposed I applied my front-bent gouge (Fig. 2) at the point of election, 2 mm. below and 6 mm. behind the spine of the meatus, and drilled a hole 3 mm. deep, in the bottom of which some cells were opened. (My gouge makes the blows of a mallet unnecessary and it uncovers the sinus without danger of injury.) I then used my gouge to make a trough 8 mm. long through the outer table of the bone, parallel to the anterior border of the mastoid process. Next, with a rongeur, I enlarged the opening in all directions until it was about 15 mm. long and 10 mm. broad. With a curette I then broke down the cells lying within the mastoid process, working chiefly in the direction of the antrum—that is, inward and slightly forward from the point of election and parallel to the posterior wall of the meatus. To make sure no foci of infection remained I removed all the cells. The antrum contained a few drops of pus and some granulations.

The cells about the antrum were filled with granulations which bled readily, particularly in the upper, inner, and back part of the bone cavity. Following this lead, I uncovered a large area of bare dura, the size of a silver dollar. Both the inner and outer tables had been completely eroded and were absent. This exposed dura was covered with granulation tissue. In order to get free access to this area, the

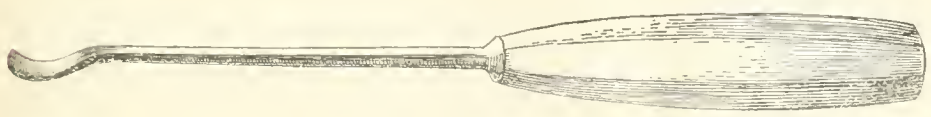

Fig. 2.—Front-bent gouge.

skin wound was enlarged backward by a horizontal incision extending for 2.5 cm. from the center of the first incision. I then removed the whole mastoid process with the rongeur and broke down all the remaining cells with the curette. To make sure that no infected bone could remain I removed, with the rongeur, all the bone surrounding the bare dura, until a border of normal white dura 4 mm. wide extended on all sides (Fig. 3).

The lateral sinus appeared traversing the denuded dura, and I removed, with the rongeur, the outer third of the posterior wall of the meatus to allow the pinna to sink inward to obviate any possible deformity or pitting behind the auricle. I washed the whole wound carefully with normal salt solution to refresh the injured tissue and to clean off the loose, infected material and dust which might be in the wound. I inserted a rolled-up strip of one-half inch gauze for a drain which extended from the bare dura to the center of the skin incision. To promote union, I then put the periosteal and skin flaps in apposition. No sutures appeared to be necessary to hold them there. I packed the meatus with plain gauze to promote drainage and to prevent the collapse of the canal. To encourage the flow of serum from the wound on account of its antiseptic value, I applied a gauze dressing moistened with normal salt solution.

Convalescence.—On the two days following the operation the patient was troubled with a stiff neck, but had no pain. The outside dressings were renewed twice because they were soaked. On the first

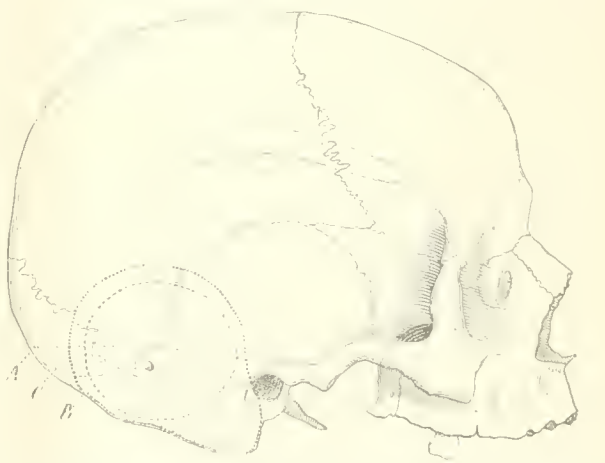

Fig. 3.—A diagram of the skull showing the course of the sinus in line *A*, and the outline of eroded bone in line *C*, and the edge of the bone excavation in line *B*.

day the temperature was 100°, the highest point reached during the convalescence. I removed the gauze strip from the wound, and the packing from the canal. The wound was dusted with boric acid and the packing replaced in the canal. On the eighth day the patient's temperature was 98°, pulse 84, and respiration 20. On the fifteenth day the external auditory canal was dry and in good condition and the drum membrane healed. The posterior external wound was completely healed except a very small sinus at the center of the incision which led into the antrum and discharged a little turbid, non-fetid fluid. On the nineteenth day the acumeter was heard sixteen inches. On the twenty-first day the postaural wound was dry, healed, and epidermatized. A small epidermatized pit was all that was left of the small sinus at the center of the incision. On the twenty-third day the hearing was good. The wound remained healed and solid, and the patient had gone back to laborious work. No pain, tinnitus,

nor vertigo occurred after the operation. The resulting scar was very small and the outer surface of the scalp showed a very slight unevenness (Chart 1).

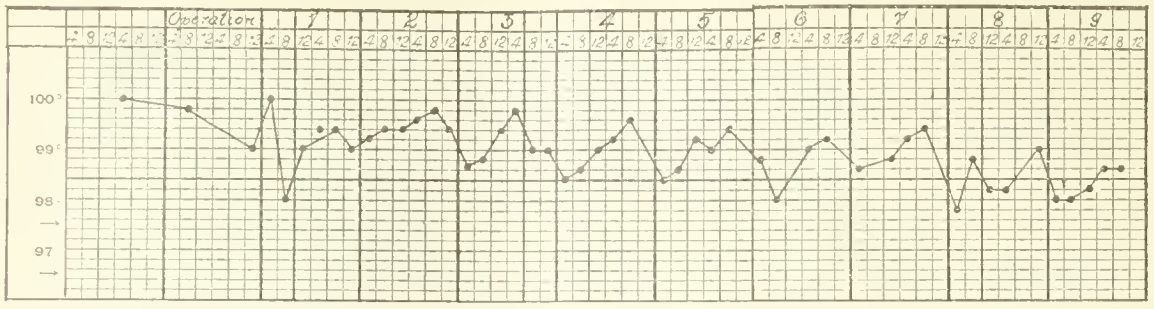

Chart 1.—Temperature curve in Case I.

Case II.—The second patient was a heavy man, 36 years of age. Four months previous to the operation he had had an attack of the grippe, followed in four days by great pain and swelling of the face and region of the ears, with discharge. When seen, two days before the operation, a pure culture of streptococci was made from the discharge. There was no external appearance of inflammation, and the tenderness over the mastoid was not marked. The headaches were severe.

Operation.—I commenced a mastoid operation on the right ear under chloroform anesthesia and made a skin and periosteal flap like the one in the previous case. The mastoid cortex appeared normal and was rather thin. I perforated it by the same method as in Case I. The process was large and cellular. The cells were small and filled with pus and granulations. The trabeculæ were friable and were easily removed with a curette. I uncovered a perforation opening into the digastric fossa, but little or no pus had escaped. The inner table of the bone covering the knee and the descending part of the sigmoid sinus was crumbling. I easily removed it with a curette. The area of osteomyelitis extended downward, backward, and inward along the occipital bone nearly to the foramen magnum and the bulb of the jugular. The surface of the dura beneath this softened area was covered with granulations. As in Case I, I enlarged the skin incision backward and removed the surrounding bone with a rongeur in order to expose a healthy border of dura mater (Fig. 4).

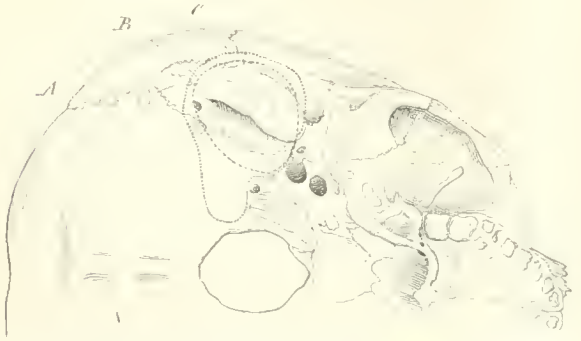

Fig. 4.—A diagram of the skull showing a three-quarter view of the base. The outline of the sinus is line *A*. The outline of the granulating dura is line *B*. The outline of the dura uncovered by the operation is line *C*.

When I accidentally detached the emissary vein from the sinus there was free bleeding. I readily stopped it with a wad of iodoform gauze. With the curette I removed the whole mastoid process, which was exceedingly soft, and extended the osseous cavity upward through harder bone which contained granulations in numerous small cells. I separated the periosteum from the upper wall of the canal and the outer half of the posterior wall with a special periosteal elevator devised for the purpose with a small, straight blade (Fig. 5). I used a narrow strip of flexible copper sheet to protect this periosteal epithelium from injury during the removal of these osseous walls and the cleaning of the tympanum, because of the value of this epithelium in the final process of epidermatization. I removed the hanging wall of the meatus, thus opening the attic by the removal of its external wall, and extended the cavity to include some zigomatic cells which were also filled with granulations. I did all this bone

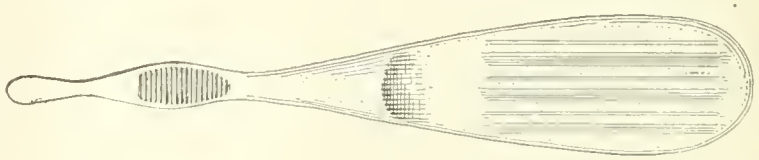

Fig. 5.

work with chisel and mallet. I removed the drum membrane, major ossicles, and as much mucous membrane as possible, without injuring the facial nerve or stapes, using for this purpose a small ring curette. I then washed thoroughly the whole wound and ear with salt solution, and slit the membranous meatus posteriorly along its inner third and packed it with iodoform gauze to separate its cut edges to assist in the epidermatization of the tympanic cavity. I packed the wound lightly with iodoform gauze because there was a question as to whether all the infected tissue had been sufficiently removed, and finally applied a wet dressing covered with rubber tissue.

Convalescence.—Three days after the operation when the dressing was changed it was very adherent in the wound and caused considerable oozing on its removal. There was no sign of infection. The gauze at the emissary vein was loosened and bleeding followed. On the fourth day the meatus was dry. All the dressing on the posterior wound was stained and the gauze in the wound was adherent. The plug in the emissary was removed with little bleeding. Gentle packing with iodoform gauze was applied in the wound, and plain gauze in the meatus. On the ninth day the gauze in the wound was moist and not adherent. There was no sign of infection. The wound was closing well from below and granulating evenly. Boric acid and a very little gauze were put in. On the tenth day the wound was moist and was filling up well. It was dressed with boric acid. No packing was used except in the meatus. On the nineteenth day the granulations were shrinking and

the wound filling up. Boric acid was used in the meatus and the posterior wound, and a strip of very narrow gauze placed in the post-aural opening. No gauze was put in the meatus. The bandage was adjusted to support the ear, which had a tendency to droop. On the twentieth day boric acid was applied. No packing was put in the wound. On the twenty-first day the wound was all cicatrized except an area the size of the end of a lead pencil. On the twenty-second day the middle ear was entirely epidermatized and dry. On the thirty-second day the meatus was opening well and the posterior wound wholly cicatrized. A slight deformity is noticeable, owing to the pit at the center of the incision (Chart 2). The patient complained of headache for the first three days after the operation, besides appearing a little dull.

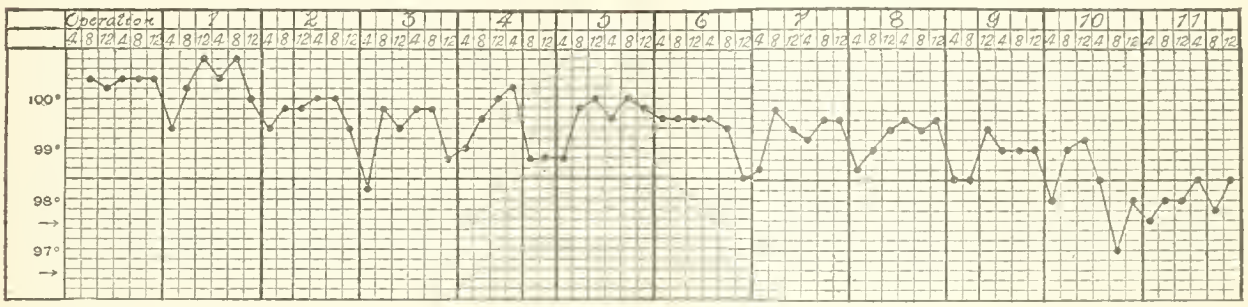

CHART 2.—Temperature curve in Case II.

Recapitulation.—My front-bent gouge was very useful in perforating the mastoid cortex, after which the rongeur and the curette did all the bone work, except in Case II, where the chisel and the mallet were used for the epitympanic work. The first steps of the operations were the same as in uncomplicated cases of mastoiditis. As the work proceeded, the wounds were enlarged sufficiently to uncover all the affected dura, and bone was removed until healthy dura surrounding the diseased area was exposed.

After all the inflamed dura mater had been uncovered and all the affected bone had been removed, the wound in Case I was closed without sutures, and the wound in Case II was packed and left open. The unpacked wound collapsed and partially filled with a blood clot, and thus reduced the size of the cavity which had to granulate up finally and cicatrize.

In neither case were there any complications in the convalescence due to the exposure of a large area of dura mater. In Case I the convalescence was very short and the deformity reduced to a nearly imperceptible scar and a scarcely perceptible pitting. In Case II, although the wound was not infected, the convalescence was much more prolonged, and the scar larger and the pitting deeper.

Conclusions.—1. The best results are obtained (*a*) By the use of the front-bent gouge instead of chisels or other gouges requiring the mallet, because it allows the convalescence to begin more quickly.

(*b*) By closing the mastoid wound and allowing it to collapse and partially fill with a blood clot to promote union by first intention, thus shortening the convalescence.

(*c*) By allowing the anterior flap of the wound holding the pinna to fall inward and backward and lie on the posterior and inner wall of the wound because this improves the post-aural cosmetic effect.

(*d*) By avoidance of packing which causes the formation of a large cavity requiring a long time to granulate up.

2. The exposure of the dura mater is a complication of no special importance.

ULCUS RODENS (MOOREN).*

By H. H. SEABROOK, M.D.,
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SURGEON TO THE NEW YORK EYE AND EAR INFIRMARY.

THIS brief report does not attempt to avoid certain characteristics made illustrious by Homer and Kipling. As much as was wanted was taken from the classical paper of E. Nettleship, published in the Transactions of the Ophthalmological Society of the United Kingdom for 1902, page 103. In addition to the seventy-four cases accepted by Nettleship there are ten considered herein; one each by Taylor and Fisher and two by Lawford in the same volume as Nettleship's paper, two reported by J. Asayama at the Japan Ophthalmological Congress of 1902, two by Wanner and one by Distler in the *Ophthalmologische Klinik* for 1905, and one shown here to-night.

Bowman published the history of a case of this disease in 1849, and Mackenzie was evidently acquainted with it in 1854, but the credit of describing it as a distinct species is due to Mooren, who published cases in 1867 and 1873. Steinheim published the eleventh case and first cure in 1877. This cure was obtained after two-thirds of the cornea had been lost, by cauterization with pure carbolic acid.

The first microscopical examination was made by Lawford from an eye excised at Moorefields by Tweedy in 1889. The case was supposed to be one of epithelioma at the time, and this diagnosis has been not infrequent in cases of the rodent ulcer of Mooren, although most of the six eyes (from Tweedy to Asayama) which were enucleated, were removed because of unfavorable conditions, in cases known to be rodent ulcer of the type under consideration.

According to Mooren this disease occurs about once in 40,000 eye diseases; Janny puts the proportion as 1 in 66,000, while Asayama claims in Japan 4 cases among 6,780 of eye diseases. It starts obscurely, and may consist at first of an apparent infiltration or abrasion near the margin of the cornea, from which spreading takes place marginally and centrally. Unless checked the process invades the whole corneal area, leaving the cornea thinned, scarred, and cloudy. Sometimes a second ulcer forms distinct from the first,

*Notes read upon the presentation of a case of Mooren's ulcer to the Lenox Medical and Surgical Society, December 23, 1905.

and the two eventually join. Iritis is common, but hypopyon and perforation are rare. The greatest advancement takes place at a depth of about one-third the thickness of the cornea, the anterior necrosed layers forming an overhanging edge which, with the cloudy epithelium, gives the characteristic gray line at the ulcerating border, where advancement takes place; the old portion of the ulcer remains more or less healed and partly filled with vascularized granulation tissue covered with epithelium. The disease may be stationary or apparently improving for days, weeks, or even occasionally for months, then, without apparent reason again advance. Pain, congestion, photophobia, and lacrymation vary, being very severe when the ulcer is extending, and usually ceasing when the whole cornea has been involved. The duration is from two months to over a year, from four to twelve months being the usual time. In thirty-six out of forty-six cases it began between November and May. It occurred in one child of less than three years of age; in all other cases in adults, about one-fourth under forty years, one-fourth over sixty, nearly one-half from forty to sixty. Both eyes are attacked in more than one-fourth of the cases, the interval between the first and second eye being variable, but the process in the two being remarkably similar in primary situation, virulence, and course.

The cause is unknown. Bacteriological examination has been practically negative, but one unconvincing attempt having been made to describe a specific bacillus (E. Andrade, "Ulcus Rodens della Cornea con rispetto di uno speciale bacillo," *Annali di Oftalmologia*, 1900). The results of examinations of excised eyes have been sufficiently indicated in the description of the ulcer previously given.

It is unnecessary to discuss many forms of treatment. Carbolic acid has not succeeded in checking the process in most cases in which it has been used. Chlorine water and subconjunctival injections of mercuric perchloride and silver nitrate have a similar record. In 1899 Koller mentioned that a case of double rodent ulcer had just cleared under treatment with tincture of iodine after the galvanocautery had failed to check the trouble; this was incidental in a paper concerning iodine treatment of corneal ulcers. In my case the ulcer cleared beautifully under tincture of iodine and seemed certain to heal, but relapsed later, when the iodine proved painful, irritating, and inefficient. In three other reported cases tincture of iodine was a failure. The most widespread treatment has been the galvanocautery, and upon reviewing reports of this, one does not wonder that Mr. Nettleship should refer to it in one place as a success and a little later as a failure, both opinions somewhat qualified. More cases are reported cured than not by this method in the sense of the process being stopped at least temporarily, but there would seem to have been decidedly more failures, which were of course certain, than properly substantiated permanent cures. Furthermore, protest has been made, in which I join, against a method being used in well advanced rodent ulcer which, because of the deep dense cicatrix, results in a worse eye, as regards both appearance and vision, than if the disease had been allowed to take its course. The same objections may be urged, as regards results, against the one apparently successful method of treatment. Two cases in which the conjunctiva became adherent to the floor of the ulcer underwent spontaneous cure. Two others were cured by transplantation of a conjunctival flap upon the ulcer. To these Distler's recent case (*loc. cit.*) may be added. Subsequent to an apparent cure, lasting two months after the use of the galvanocautery there was a relapse. Transplantation of the conjunctiva stopped the process of inflammation and degeneration for one year. Ulceration then began again with some virulence, when the old flap was removed and a new one applied, with the result that further ulceration was checked during the six months the case remained under observation.

We have here a perfectly healthy man, an actor, thirty-seven years old, with rodent ulcer of over eighteen months' standing, which has so far involved all of the cornea except a small patch outward. After treatment of various sorts, ending with tincture of iodine, had failed, the edge of the ulcer had reached the margin of the pupil. Pure carbolic acid seemed to check it at this point, except for occasional relapses at the upper portion for several months, when the anterior layers of the cornea began to break down along the whole edge of the ulcer except that directed toward the corneal limbus. Carbolic acid shortened the exacerbations and ameliorated the symptoms and was continued; gray lines extending from the point of application into the lymph channels of the cornea sometimes under the whole breadth of clear epithelium, hinted a reason why cauterization failed to stop the extension of the ulcer. Dionin in 10 per cent. solution has been used and vision already (20/c.c.) is equal to the best primary vision so far definitely recorded (Asayama, *loc. cit.*). The eye promises to have a fair appearance and useful vision in the course of time.

In the corneal rodent ulcer of Mooren we have a remarkable process. It attacks the parenchyma of the cornea with the utmost malignancy, but is easily resisted by the membrane of Descemet posteriorly; and although there is some swelling outside the limbus, the episcleral tissue at the margin of the cornea being infiltrated with small round cells, ulceration, which regularly occurs in this situation in epithelioma of the eyeball, has occurred here in only one case of rodent ulcer (Gifford's). In that case the galvanocautery cured the conjunctival ulceration with one application, and the corneal ulceration healed, although it had previously resisted cauterization.

The writer would suggest some form of protozoon as a probable cause of the rodent ulcer of Mooren. If this supposition were correct it would be difficult to prove, since it is unlikely that enough cases will arise in the future in which sufficient ocular tissue could be properly sacrificed for convincing investigation.

118 East Seventy-second Street.

Action of the X-Rays on the Virus of Rabies.—Alfonso Calabrese tells us that many bacteria in solutions are killed by the action of the Roentgen rays. He has instituted experiments to determine whether this action is effective against the cause of rabies as contained in the virus of rabies. The *x*-rays were made to act on bits of nerve tissue, emulsion of the same, and directly on the eyes of rabbits infected with rabies through the anterior chamber. In these cases the action of the rays, prolonged for from two hours to eight days, failed to save the rabbits from rabies. The author is convinced that there is no hope of being able to prevent or cure rabies by means of the *x*-rays, and that there is no apparent effect from them on the virus.—*La Riforma Medica.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, March 31, 1906.

RELAPSING FEVER.

ALTHOUGH relapsing fever was the first infectious disease in which the parasite was demonstrated in the blood, no very notable facts in regard to the etiology of the malady have been discovered since Obermeier in 1873 described the spirillum or spirochete which bears his name. In the course of several severe epidemics at about that time it was learned that uncleanliness and close personal contact apparently had something to do with the transmission of the disease, for it was most common in vagabonds and tramps, railway laborers who lived huddled together in barracks, and prisoners in large penal institutions. Several Russian observers, notably Metchnikoff, who inoculated himself, showed that the blood of a patient injected into a healthy person produced the disease, but the spirochetes rapidly died outside of the body; and even Tictin's observation that the stomach contents of bedbugs that had fed on relapsing fever patients contained spirochetes was not very remarkable, since it was only natural that this should be the case, and did not clear up the question of transmission. The infrequency of relapsing fever of late years has also rendered research unfruitful, so that the matter has been resting in a rather unsatisfactory state.

Strangely enough, it is out of Darkest Africa that light has been shed on this obscure subject. One of the latest publications relating to the matter is that of Robert Koch, who, starting with the comparatively recent observation that a type of fever occurring in German East Africa and previously regarded as malarial was really due to an organism nearly or quite identical with that of Obermeier, a year ago undertook the study of the local conditions. At that time practically every white man who traveled along the caravan route which runs from Daressalam into the interior, at Tabora branching so as to reach Victoria Nyanza and Lake Tanganyika, contracted the disease. Koch took the long journey in person, at times making side trips which led to regions which he says even the Arab traders had never visited, and now presents evidence that appears to confirm the suppositions of other observers regarding the intermediate host of the spirochete. In his description of the investigation (*Berliner klinische Wochenschrift*, February 12, 1906) he says that thanks, perhaps, to the experience in dissecting and preparing ticks gained in his previous work on the South African cattle fevers, he succeeded in assuring himself that a certain tick, *Ornithodorus monbata*, which he says is the only tick that feeds exclusively on human blood, frequently was infected with the typical spirochetes, and that these were most numerous on the ovaries. Further observations revealed the fact that a large proportion of the eggs laid by an infected female also contained spirochetes, and monkeys invariably developed relapsing fever if exposed to the bites of the newly-hatched insects. The ornithodorus is found in the soil of the dirt floor of practically every negro hut, and also in the shelter huts erected all along the caravan route. The insect is nocturnal in its habits and emerges to feed on sleeping travelers, reburying itself as soon as satisfied. Although it was not possible to obtain exact evidence on this point, the assumption is that the spirochetes of the young insects are present about the salivary glands or suctorial apparatus. Quinine and other drugs are powerless as curative agents or as prophylactics, but it is easy to avoid the disease by never sleeping in a native hut, and Koch's party escaped in this way. The natives appear to become immune through being infected in childhood, but coast natives show the same susceptibility as whites when they go into the interior. In order to explain the constant infection of mature ticks that appears to take place, Koch suggests two possibilities. One is that apparently healthy individuals, perhaps children, who have had the disease and recovered may still have spirochetes in their blood, and the other is that rats and mice may serve as a third host for the spirochete. In fact, it was found possible to infect both of these animals with the microorganisms. Still another possibility is that there may be cases of the disease so mild that they escape recognition, and these can keep up the supply of microparasites for infection of the ticks.

Koch's observations are of much interest and value, but he does not mention in his communication the fact that in July, 1905, Ronald Ross read a paper by Todd and Dutton—the latter of whom died in Africa of spirillum fever contracted in the course of his investigations—before the section on tropical disease of the British Medical Association, in which these observers stated that the organism causing the African tick fever was probably the spirillum of Obermeier and that the transmission was effected by the *Ornithodorus monbata*, some developmental process probably being carried on in the tick. Norris recently discussed the subject before the New York Pathological Society, and in his paper, reproduced in the Proceedings of that society for January, 1906, suggests that some of the obscure febrile affections observed in this city in sailors coming from tropical ports may possibly be instances of spirillum infection.

While it is a matter of satisfaction to have our knowledge of the etiology of this disease placed on a firmer basis, it is irritating to feel that, given so clearly demonstrable a parasite as the spirochete, we are still unable to offer the patient a specific remedy. Possibly further development along the lines advocated by Ehrlich, who discovered a chemical substance—trypan red—which has a definite, although not altogether adequate specific effect on trypanosomes, may lead to the discovery of a specific for relapsing fever also. Perhaps when Koch returns from his next African expedition, which is to start on April 16 and last for a year and a half, he will have progress to announce in this direction also.

THE NAVAL MEDICAL SERVICE.

In about two months the medical schools will turn out several hundred new physicians who will have to decide upon their life work. A young man who has made up his mind to study medicine thinks at the outset that he has chosen his career, and that there is nothing more for him to do but to bend his energies to the securing of an education in the principles of medicine and then to apply these principles in practice. But as his time for graduation approaches he finds that the choice of a career still lies before him. Shall he become a general practitioner or family physician, the breed of which is not extinct and never will be; shall he take up surgery or gradually work into one of the specialities; shall he go into life insurance or take up literary or laboratory work, all of which, in the larger cities, have developed into specialities incompatible with actual practice; or shall he enter one of the public services—the Army or Navy or Marine Hospital Service? These are questions which must be decided and decided definitely before graduation, or certainly before the completion of the post-graduate hospital service, which every medical graduate should take if he would make himself an accomplished p[illegible].

With no desire to influence the recent graduate against his inclinations, but simply to point out an opening for an honorable career to the young man with ambition and with a bent toward the sea, the Medical Record would call attention to the opportunities now presented in the naval service. For many years the navy had few attractions to offer to the medical man. His rank in entering the service was low, and he was compelled to mess with the midshipmen just out of Annapolis and several years younger than himself. This and other humiliations under which the newly-appointed assistant surgeon in the navy had to labor were such that few men of spirit were willing to submit to them. But that condition no longer exists. Now an assistant surgeon's rank is that of a junior lieutenant, which is equivalent to first lieutenant, cavalry, in the army. He messes with the other officers and is far above the middy, who has to wait nine years to attain that rank. Moreover, he may become a passed assistant surgeon, with increased rank and pay, in less than a year after entering the service, if he passes the examinations, whereas formerly it was necessary to pass through a probation period of three full years before attaining that rank.

There are advantages and disadvantges in the service, and the young graduate should weigh them carefully before deciding to enter it. The advantages are that the naval surgeon has an assured income from the day he enters the service, and one which increases with each year of service; he has opportunities for seeing the world that few men dependent upon their practice for a living ever obtain; he has an honorable position and the companionship of gentlemen which he might or might not lack in civil practice; and he has the opportunity to study tropical and other diseases which the routine of family practice in an interior town would never bring to him; and, of course, one who loves the sea would get his fill. On the other hand the sea surgeon is seriously hampered in the enjoyment of family life; he may be married, but his duties will entail long and trying separation from wife and children. If he thinks that he is to be stationed for a long period in some foreign or domestic port, his family can follow him, and he can visit them occasionally when he gets leave; but they may be just settled in Yokohama, or Manila, or Nice when he is ordered back to New York, or San Francisco, or to the West Indies, and then comes a long separation and the expense of the voyage back of the family to the new station. That is the disadvantage of the naval service—and a serious one it is to many who would otherwise embrace the life with avidity.

The navy is no place for the lazy man, but for the one who has high ideals of work and is ambitious it offers temptations. Preferment comes only after examination, and, although the service is in dire need, there is no relaxation in the standard. The examinations are stiff, and they must be passed creditably by all who would advance to a higher rank in the service. But there is time enough for study, and opportunity is offered for original investigation, and no man who works need fear the examination. The examination for admission to the service is practically no more difficult than many of the State examinations for license to practice. The pay in the navy is not large, but it is sure, and any surgeon who is invalided in the service is assured of an income which will support him for the rest of his life.

THE POPULARITY OF CESAREAN SECTION.

The development of a more perfect operative technique and the observance of the most rigid asepsis have been the means of lowering the mortality for cesarean section from over fifty to less than ten per cent. The favorable aspect presented by these figures has naturally led to an increase in the number of cases in which the procedure has been employed, and the operation from having formerly been regarded as a most serious undertaking has now attained a vogue, which, unless checked, may ultimately defeat the ends for which the operation was originally proposed. A plea for greater care in choosing this procedure as a way out of many difficulties which might be better dealt with otherwise is contained in a recent article by C. B. Reed, published in *Surgery, Gynecology, and Obstetrics,* for January, 1906, in which he raises a warning voice against the too frequent performance of the operation. Much of this popular desire has undoubtedly been inspired by the favorable statistics which have emanated from the hospitals, where of course the outcome is governed by a series of advantageous factors and conditions which cannot very well be repeated in ordinary practice nor by the ordinary practitioner. Among these factors may be mentioned the practice of a rigid asepsis and antisepsis, not only in reference to operator and patient, but in the presence of his assistants and the environment. Care and skill on the part of the operator and the nurse who takes care of the patient, and a knowledge of, and the means for treating complications and emergencies can rarely be found outside of a properly equipped hospital in the larger cities. Where these essentials cannot be attained, it is incumbent upon the attending

physician in any given case, according to Reed, to choose an operation which is coupled with less danger to the mother and which can be carried out with greater chances of success as regards her life at least.

Dr. Reed suggests that a procedure which is eminently adapted to the conditions may be looked for in perforation. This has a much lower mortality in general practice than cesarean section: it is moreover a comparatively bloodless operation, and the mutilated child can usually be readilly enough extracted by the natural passages, while in cesarean section the large abdominal and uterine wounds offer an opportunity for a very small amount of septic material to become extremely dangerous. The preparation and the technique for perforation can be carried out even in the poorest surroundings, elements which do not apply to the performance of a cesarean section. The after-treatment does not differ materially from that of the ordinary parturient case, and no special nursing arrangements are necessary.

In this discussion the welfare of the mother has been made the principal, if not the sole aim of treatment, and in support of this claim may be quoted the famous maxim of Simpson, that the safety of the mother is the supreme law. Reed also argues that the mother is of great economic value to the State, while probably not more than two-thirds of babies born living survive their fourth year, therefore the latter, from the civil standpoint at least, has a much smaller claim to life than the mother, unless she is hoplessly diseased. These statements apply, of course, more particularly in country practice and in "relative indications" only, but where the facilities and the skill are at hand, the operation of casarean section may and should entirely supplant perforation as an obstetrical procedure.

The Fate of Paraffin in the Tissues.

Since its introduction by Gersuny, scarcely more than five years ago, the injection of melted paraffin into the tissues for various plastic purposes has been quite extensively employed. A great deal has been written regarding its manifold advantages, but as yet we know comparatively little of the behavior of this substance after its introduction into the tissues. A better knowledge of this process is of great importance for practical as well as for theoretical reasons. We know that its introduction is not always well borne, and sometimes the injected material, together with the surrounding tissues, may be entirely extruded. An interesting contribution to the question of what becomes of the paraffin which remains *in situ* is made by I. Kirschner (*Virchow's Archiv*, vol. 182), who was able to examine a number of specimens taken from patients in whom the injected areas had been removed by operation for various reasons. Kirschner found that a distinction had to be drawn between the soft and hard varieties of paraffin. When the former had been employed, histological examination of the excised tissues showed that the material was completely absorbed; and even if this was accompanied by a gradual substitution of connective tissue corresponding roughly to a reparative process, there was always a danger present that this newly organized tissue might undergo contraction later on. It was also found that the injections were not well tolerated in those localities where the skin was quite firmly united to the underlying bony structure by dense connective tissue, as on the face. Unfortunately, these are the situations where the procedure is most frequently employed.

The encapsulation or imbedding of the hard varieties of paraffin has rarely ever been doubted. Kirschner's observations show, however, that in these instances we are dealing with a foreign body, traversed by a network, whose individual strands are made up of connective tissue and giant cells, the latter surrounding directly the small remnants of paraffin. Although commonly designated as "hard," it was found that the irregular crystalline structure of the latter readily permitted the invasion of the cellular elements, until the entire mass was finely subdivided and absorbed by the action of both leucocytes and giant cells.

If we apply the information gained from these observations to therapeutics it is quite apparent that neither variety of paraffin can be included among that group of foreign substances which may remain permanently imbedded in the tissues or become encapsulated and separated from the surrounding parts. The procedure in question has been employed in the restoration of anatomical defects arising from various causes, and in other conditions, and it has been hailed as an ideal therapeutic resource. The results obtained from studies such as those here referred to will undoubtedly lead to further trials in the production of a medium of similar character, but without the disadvantages which have been shown to be connected with simple paraffin, which may be used to meet the same indications.

A Law Against Substitution.

A bill has been introduced by the Hon. Alfred R. Page into the New York Senate amending the Penal Code so as to protect the physician against the injury done him and his patients by the dishonest pharmacist. Most druggists who aspire to any higher calling than the sale of soda water, cigars, and patent medicines are, we believe, honest, and can be trusted to compound the physician's prescription exactly according to directions, but there are some black sheep, and it is to prevent such from tampering with prescriptions, substituting inert or injurious substances for the more costly drugs called for by the writer of the formula, that this excellent bill is framed. The act provides that anyone who, in filling a prescription, departs from the letter of the instructions in regard to the quantity or quality of the drugs, or who substitutes any drug or drugs for one or more called for by the writer of the prescription, shall be guilty of a misdemeanor and may be punished therefor. For a second offense this punishment shall be imprisonment for a term of from ten days to one year and a fine of from ten to five hundred dollars. A third conviction disqualifies the offender from practising pharmacy. The act applies only to the compounding of physicians' prescriptions, and expressly permits the druggist to recommend the purchase of some other article than the one ordered (not in a prescription) and to sell the same with the knowledge and consent of the purchaser. The provisions of the act are therefore not hard and are designed only to prevent fraudulent substitution. The bill is the same as one passed at a former session of the Legislature, but vetoed by Governor Odell. It should be passed again and it is believed that, if it is, it will receive Governor Higgin's sanction.

News of the Week.

"American Medicine" to be Issued Monthly.—In the current issue of *American Medicine* announcement is made that the journal will in future be published monthly instead of weekly. We are sorry to lose our contemporary from the ranks of the weekly journals, for it has ever stood for the best in professional literature. In the proposed change we are assured that there will be no lowering of scientific, professional, or literary standards. We cordially wish for our contemporary in its new form all the success which deserved professional sympathy and support will surely bring it.

Red Cross Society.—With the idea of rendering it possible to give prompt physical and financial aid in public disasters, the New York State Branch of the Red Cross Society has announced its intention of extending its organization to every county and large city in the State. It is planned to create a membership of persons who will contribute $1 a year or a life fee of $25, and of others who will volunteer their services in times of calamity.

American Urological Association.—A meeting will be held on Tuesday, April 3, 1906, at 7.30 P.M., at the New York Athletic Club. The paper of the evening will be "Surgery of the Ureter," by Dr. Eugene Fuller. The paper will be discussed by Drs. Douglas H. Stewart, Louis Heitzmann, W. E. Deeks, Wm. K. Otis, Howard A. Kelly, Winfield Ayres, and Carl Beck. The president is Dr. Ferd. C. Valentine of New York and the secretary, Dr. Hugh Cabot, 1 Marlborough Street, Boston.

The Osteopathic Bill.—The Medical Society of the County of New York has issued the following: "The attention of the members of the Medical Society is called to Senate Bill 293 and Assembly Bill 627, entitled: 'An act regulating the practice of Osteopathy in the State of New York.' This act provides for the licensing of all Osteopaths who are now in the State to practise medicine without any examination, and establishes for those who subsequently come into the State to practise Osteopathy, a lower standard of education than is now required of other practitioners of medicine. Will you kindly write to your representative in both Senate and Assembly expressing your opposition to this bill, and urging the necessity of compelling all who practise medicine in any form to comply with the present Medical Laws? Your active and immediate cooperation is urged to defeat this attempt to lower the standard of medical education, and to evade the requirements of the laws governing the practice of medicine in this State."

To Prevent Transfer of Patients.—A bill which has been introduced at Albany to prevent the transfer of patients from one hospital to another provides that the person ordering such a removal is punishable by a fine of $5,000, or five years' imprisonment. No exceptions are made in the case of infectious diseases or other cases of necessity.

Seaside Park Bill.—The bill providing for the establishment of a seaside colony for New York City's sick poor has been modified by the Assembly Cities Committee to such an extent that its usefulness has been greatly impaired. The appropriation for the purpose has been cut down from $2,500,000 to $1,500,000, an amount which it is stated will be insufficient to acquire even the site necessary for the project.

Charities Federation.—The committee appointed by Comptroller Metz to consider the federation of the private charities to whose support the city contributes, has approved the general plan proposed and has appointed a subcommittee to settle details. The idea is to form a federation with a central board of administration for the study of statistics and the exchange of ideas. Public conferences will also be held at stated intervals. It is expected that in this way the services rendered to the city will be made more efficient.

The Health of New York City's School Children.—According to a report made public by Health Commissioner Darlington, since the reorganization of the system of medical school inspection of the Board of Health on March 29, 1905, the inspectors have examined 55,332 children, and have reported 18,182 cases of defective teeth, 16,394 cases of defective vision, and 6,182 cases of defective nasal breathing. Treatment was necessary in 33,551 cases. The conditions most frequently encountered were enlarged anterior cervical glands, visual defects, and imperfect teeth, of each of which more than 14,000 cases were recorded. During the last year 88,964 visits were made to the schools by medical inspectors, and 18,844 children were excluded for contagious disease. Of this latter number, 8,833 were for eye diseases, 4,692 for pediculosis, 2,018 for skin diseases, 312 for measles, and 74 for diphtheria. During 1903, 65,294 children were excluded, and during 1904, 25,369. Much importance is attached to the work of the school nurses, through which many children that would formerly have been excluded are enabled to continue in attendance.

To Study Physically Deficient Children.—The president of the Board of Education has appointed a committee of three commissioners to study the present facilities for the education of the blind, crippled, and otherwise physically defective children in this city, with a view to having the educational authorities assume their care.

Literature of Quack Concerns Excluded from the Mails.—Postmaster-General Cortelyou, as the result of investigations carried out by inspectors of the Postoffice Department, has issued orders to the postmasters of the New York and Brooklyn offices to refuse admission to the mails to the advertisements of fifty-two bogus medical concerns in New York City and to refuse delivery of mail matter to any address where such business is conducted. Like action has already been taken against some thirty similar enterprises in Boston and thirteen in Philadelphia.

Magic Boots Maker Held.—The manufacturer and the vendor of the so-called "magic boots," which were sold to people of all sorts and conditions at exorbitant prices under the pretense that they contained curative principles of great value for almost all diseases, have been held in $1,000 and $500 bail respectively for the grand jury. The former is accused of grand larceny, and the latter of practising medicine without a license. Another unlicensed practitioner has also been arrested, whose method was to delude poor women on the East Side into the belief that he could relieve them of sterility, and who apparently succeeded in finding a very large number of victims.

The Centennial Celebration of the County Medical Society.—On Wednesday of the coming week the Medical Society of the County of New York will celebrate its one hundredth birthday by a dinner at the Hotel Astor. The price of the dinner ticket has been placed at six dollars. Members are privileged to invite guests. There will be some good speaking, though not too much, and it is hoped that the celebration will be a notable one and worthy of the important occasion.

Colony for Epileptics in Illinois.—Under the auspices of the Children's Hospital Society, an organized movement for the establishment of a State colony for epileptics was started at a public meeting at the Chicago Women's Club, Wednesday, March 14. The principal speaker was Dr. William P. Spratling, medical superintendent of Craig Colony, New York, who spoke of the good work that was being done at Sonyea, where the colony for epileptics is located. He was followed by Drs. V. H. Podstata, Daniel R. Brower, L. Harrison Mettler, and Sydney Kuh. Dr. Frank S. Churchill acted as chairman of the meeting in the absence of the president. The cooperation of the Federated Women's Clubs of the State, of medical societies, and of philanthropic and charitable societies is to be sought for an appeal to the legislature for financial support.

Eastern Illinois Ophthalmological and Otological Society.—A meeting of this society was held recently in Decatur to perfect organization, at which the following were elected as officers: *President*, Dr. James W. Sanders, Decatur; *Vice-President*, Dr. Benjamin Gleeson, Danville; *Secretary-Treasurer*, Dr. Charles P. Hoffman, Danville. In its membership the society embraces the cities of Danville, Mattoon, Decatur, Champaign, Bloomington, and Paxton. It has a membership at present of twenty-one.

Chicago Union Hospital.—This institution contemplates the erection of a four-story brick building to cost $35,000. A permit has already been issued for putting up such a building.

A Summer Course in Hygiene.—The University of California, Berkeley, announces a special course in public health and sanitary science at the next summer session of the university, June 25 to August 4, providing that enough applications for the course are made before April 1 to warrant the undertaking. Water supplies and the disposal of sewage will be discussed by Charles Gilman Hyde, C.E., assistant professor of sanitary engineering, and recently a member of the Massachusetts State Board of Health. The bacteriology of the infectious diseases will be taken up by Archibald R. Ward, assistant professor of bacteriology and director of the State Bacteriological Laboratory.

An Unsanitary Prison.—The recently appointed resident physician at San Quentin prison, California, is said to have found the conditions there extremely unfavorable for surgical work, owing to scarcity of modern instruments and appliances. In a formal report it is stated also that many of the prisoners have the appearance of advanced tuberculosis, but that no careful physical examinations have been made and that there is no attempt at segregation. It is expected that the new interne will effect the needed reforms.

Smallpox Near Merced, Cal.— Dr. N. K. Foster, secretary of the State Board of Health, has sent a warning to other cities against the danger of a spread of an epidemic of smallpox that has broken out among railroad employees of a new road being built from Merced.

A Good Fee Lost.—A physician of Redlands, Cal., sued the Sunset Telephone Company for $1,200 for services rendered to an injured lineman in his private hospital, but the case was nonsuited on the ground that authority had not been given by the company for charging the account to it.

Portland Hospital Destroyed.—The Multnomah county hospital was destroyed by fire on March 10. Four nurses, Mrs. M. C. Drain, Miss Joie Call, Miss Jennie Freeman, and Miss Marie J. Clark, have received especial mention for bravery in saving the lives of the inmates, more than forty in number.

Mosquitos in New Jersey.—The bill appropriating $350,000 for the purpose of mosquito extermination in New Jersey passed the Senate last week. The cost of draining with the processes devised by the Mosquito Department is about $1.40 an acre. Newark last year drained 3,500 acres at an expense of $5,000. The appropriation about to be made will dry up all the 200,000 acres of marsh land still remaining. The work, it is calculated, will take five years. As soon as the act is passed the department will begin work on the great meadows between Jersey City and Rahway and another 20,000-acre tract in the southern part of the State. Every Town Committee and improvement club has established its mosquito committee to join hands with the State department.

The "Colorado Medical Journal."—The formal retirement of Dr. William N. Beggs as editor of the *Colorado Medical Journal* is announced, and Dr. T. Mitchell Burns, who has for some time officiated as consulting editor, has been chosen as his successor. The position of consulting editor will be assumed by Dr. J. N. Hall.

Yellow Fever at Panama.—A case of yellow fever was reported from Panama on March 23, as having occurred at Bocas del Toro. It is probable that Panama will appoint as health officer at Bocas del Toro some member of the staff of Col. Gorgas, under whose supervision the town will be fumigated and the routine sanitary regulations will be enforced.

Quarantine Regulations Against Havana.—It has been decided at Washington that the crews of vessels plying between Southern ports of the United States and Havana need not be yellow fever immunes. This ruling will be a great advantage to the shipping companies in both countries.

Association of American Medical Colleges.—At the annual convention of this association, held in Pittsburg, the following were elected as officers: *President*, Dr. George M. Kober of Washington, D. C.; *Vice-Presidents*, Dr. C. F. Waite of Cleveland and Dr. H. W. Loeb of St. Louis. The next convention will be held at Richmond, Va.

American Gastroenterological Association.—The ninth annual meeting of this society will be held in Boston, Mass., on June 4 and 5, 1906.

The Antivaccination Movement is so strong in Toronto, Can., that the public school board, in spite of protests from the local medical societies, has decided to allow unvaccinated children to attend the institutions under its control.

Obituary Notes.—Dr. Charles Louis Fincke of Brooklyn died on March 19, at the age of thirty-three years, as the result of an infection received while operating. Dr. Fincke was graduated from Yale University in 1896 and from the Long Island College Hospital in 1900.

Dr. G. E. E. Sparhawk of Burlington, Vt., died on March 14, at the age of seventy-seven years, after a year's illness. He graduated from the Hahnemann Homeopathic College in Philadelphia in 1853. For years he was the only exponent of homeopathy in Vermont, and after having practised in several other places he removed to Burlington in 1878.

Dr. B. W. Carpenter of Burlington, Vt., died on March 20, at the age of sixty-nine years. He was graduated from the University of Vermont in the class of 1857, and served as surgeon through the Civil War. He retired from active work fifteen years ago.

Dr. William N. Riley of Malden, Mass., died on March 16, at the age of twenty-six years. His death was ascribed to heart failure brought on by

exhaustion following a walk of several miles to attend a patient in the height of a severe snowstorm. He was graduated from the Harvard Medical School in 1899 and began practice in Malden a year later.

Dr. Francis Brick of Worcester, Mass., died of apoplexy on March 14, at the age of sixty-seven years. He was graduated from the Homeopathic Hospital at Cleveland in 1861 and removed to Worcester in 1875.

Dr. Nicholas J. Dorsey of Galesburg, Ill,. died of heart disease on March 9, at the age of eighty-four years. He was graduated from Williams College in Baltimore and in the early fifties he went to Indianapolis, Ind., where he practised until the outbreak of the Civil War, throughout which he had charge of the Indiana hospital corps.

Dr. Francis J. Wennerberg of Boston died of pneumonia on March 17, at the age of thirty-seven years. He was graduated from the Harvard Medical School in 1893.

Dr. Alonzo H. Boyer died at Philadelphia on March 18, at the age of sixty years. He was graduated from the medical department of the University of Pennsylvania in the class of 1868. At the outbreak of the Civil War he enlisted as assistant surgeon in the 200th Regiment, Pennsylvania Volunteers, serving throughout the war.

Dr. William Kroh of Los Angeles, Cal., died on December 11, 1905, at the Good Samaritan Hospital in that city of nervous prostration. Dr. Kroh was a native of Baltimore and was graduated from the University of Maryland in the class of 1886.

Dr. H. Hoyle Butts of this city died suddenly on March 26, at the age of forty-three years. He was a graduate of the Medical Department of the University of New York in the class of 1885. He was a member of a number of local, State, and National medical societies, and was an attending surgeon to the Manhattan Eye and Ear and Throat Hospital.

Obituary.

ROBERT OGDEN DOREMUS, M.D., LL.D.,

NEW YORK.

Dr. Robert Ogden Doremus died on March 22, at the age of eighty-two years, after an illness of ten days. Dr. Doremus was a notable figure in the development of scientific work and instruction in this city, and did much to stimulate popular interest in physical and chemical lore. He was among the first to establish chemical laboratories for instruction, and was long a leading expert in chemistry and toxicology. His father was one of the founders of the New York University, and Dr. Doremus received the degree of A.B. from that institution in 1842, the degree of A.M. in 1845, and the degree of M.D. in 1850. He was one of the founders of the New York Medical College, the Long Island Hospital Medical College, and Bellevue Hospital Medical College, in each of which he established courses of laboratory instruction in chemistry. From 1853 to 1861 he was Professor of Natural History at the Free Academy, now the College of the City of New York, and he later served the same institution as Professor of Anatomy and Physiology and as Professor of Chemistry and Physics. From 1892 until 1902 he was vice-president of the college.

Dr. Doremus made many discoveries and inventions in his special subjects, among which were researches on light, on the daguerreotype, on disinfection, and on gunpowder. He was a constant contributor to the literature of his subjects, and was a member of the Medical Advisory Commission which established the present Board of Health. He was a graceful speaker, whose impressive personality greatly aided his work as a teacher. Dr. Doremus was an accomplished musician and served for a number of terms as president of the Philharmonic Society.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

KING'S AND SUNDAY FUNDS—OUT-PATIENT ABUSE—SCHOOLS AND HOSPITALS—MALIGNANT DISEASE OF APPENDIX—TREATMENT OF CHRONIC RENAL DISEASE—CANCER AND BOYEN'S METHOD—LIVERPOOL TROPICAL SCHOOL—INSTITUTE OF MEDICAL SCIENCES—OBITUARY.

London, March 9, 1906.

To meet the views of the King's Hospital fund as to the separation of the school funds, the meeting of the Westminster Hospital governors has decided to raise the students' fees about 10 per cent.—an amount which will not make it the most expensive—and to ask subscribers to contribute separately or to earmark the amount they are willing to devote to the school. Sir Douglas Powell, who is on the committee of the King's fund and was present, emphasized the great value of the medical school, and said that the plan adopted at his hospital (Middlesex) of asking subscribers to earmark the amount for the school, had so far worked satisfactorily.

Out-patient abuse was discussed at a meeting of the Sunday Fund presided over by the Lord Mayor, last week. The committee's report said there is not any serious abuse of the out-patient departments, and if any should exist it can be effectually met by a system of investigation by a competent staff, who should visit the homes of patients. The Rev. C. H. Grundy thought there was great abuse and advocated a small fee being charged. Dr. Glover asserted that there was a general admission of abuse of the out-patient departments at all the large hospitals; that it could be checked was proved by the fact that in one the numbers had fallen by half on an efficient system of inquiry. Mr. Sydney Holland, of course, protested that there was no abuse! He ought to know, but wilfully shuts his eyes to the effects of his own doings. It is intended to apply for a royal charter for the fund.

The first annual meeting of the Amalgamated National and Royal Orthopedic Hospitals was held on February 28. The amalgamation was reported to be now complete, the King and Queen had become patrons, and a royal charter issued. Many children admitted to the hospital know positively nothing. A school is carried on in the wards under the auspices of the County Council, and in addition to the usual instruction some amount of training for suitable employments is afforded. Plans for building a new, highly-equipped hospital have been prepared.

The Seamen's Hospital Society's annual meeting was held on February 28, when resolutions were passed commending the work of the committee in the establishment of the London School of Tropical Medicine and within the last year the London School of Clinical Medicine. Both these branches of the society's work elicited warm approval on the part of several speakers and funds were asked for to support the two valuable schools, as well as hospitals, in which 26,000 sick and injured seamen are treated annually.

Malignant disease of the appendix vermiformis formed the subject of a paper by Drs. Rolleston and Lawrence Jones at the Medico-Chirurgical's last meeting. They reviewed the recorded cases in chronological order. These numbered sixty-two, but only forty-two were considered undoubted. Of these forty-two, thirty-seven were carcinoma and seventeen spheroidal-celled, with an average age incidence of 24.2 years. Of five cases of columnar-celled, this age was 62, corresponding with age incidence in these parts of the intestine. Of the forty-two cases, thirty-four were reported since 1900. It seems the condition cannot be diagnosed before operation. The results of excision were good, only four deaths following within two weeks. The operation need rarely exceed simple excision of the appendix, but in three cases a portion of the cecum was removed in one some glands, in two the entire cecum. The growth was usually localized and rarely diffuse. In two cases a stercolith was found.

Mr. McAdam Eccles related a case of primary cancer of the appendix in a young man of eighteen, who had had some attacks of pain in the right iliac fossa, with tender-

ness and some rise of temperature, and in the last a distinct induration. A "split-made opening" was made over the mass, exposing the cecum fixed by adhesions in the fossa, and behind it a hard mass, evidently a diseased appendix. It was separated with difficulty, and was greatly thickened, with an external circumference of 2¼ inches. One or two glands removed were unfortunately not preserved. Uninterrupted recovery followed, and the patient was quite well on February 19, twenty-one months after the operation. Two whitish patches were found in the walls of the appendix, quite distinct from one another and supposed at first to be tuberculous, but on microscopic examination were found to be spheroidal-celled carcinoma.

Mr. Jefferson Faulder mentioned a case in which the appendix on removal was found to be infiltrated with columnar-celled carcinoma undergoing spheroidal-celled transformation. This form is usually thought very malignant, but seems not so in the appendix. The patient is now in good health, four years after the operation. He suggested the growth might be regarded as endothelioma.

Dr. Pitt thought lymphoidenomatous growth might start the disease, and Dr. French thought the inflamed lymphatic tissues might resemble the case.

Dr. Rolleston protested against any unusual form being called endothelioma, which was a growth derived from endothelial cells, but not necessarily malignant. The regular arrangement of the connective tissue or uniform size of the cells were against the possibility of the growth being of an inflammatory nature.

The treatment of chronic renal disease was brought before the Medical Society on February 26 by Dr. Samuel West, especially in regard to points on which opinions were unsettled. Chronic parenchymatous nephritis was first considered, and as it represents the results of an inflammatory process, the problem is to promote the growth of healthy renal cells by a high state of nutrition. Patients were often kept too long on an exclusively milk diet. At all times meat extracts and alcohol must be avoided, but Dr. West could not see why eggs in moderation should be excluded, nor did he see why white meat should be ordered and red meat forbidden. Confinement to bed or one room might also be too prolonged, as the health suffered. Fresh air was beneficial if chills were avoided. Treatment must not depend on albuminuria only, but other urinary symptoms must be considered. Drug treatment should be of a general kind, modified so far as the kidneys required.

In granular kidney, the problems were different, varying with the stage. Early, much might be done if the condition were recognized, to retard its progress. Life might be active with moderate, regular exercise, but overexertion and exposure must be shunned. In the middle stage, when the heart was hypertrophied and the arteries thickened, we must guard against cardiac failure, rupture of vessels, and intercurrent nephritis. The last was not generally recognized as a danger, but was important. In the third stage, symptoms were variable, might suggest mischief in any organ rather than kidneys. Arterial tension varied, and the pulse afforded the best indication for treatment. Low tension must be raised by diet, stimulants, digitalis, ergot, and adrenalin. High tension should be reduced by diet, purgatives, diaphoretics, and baths; also iodide of potassium and nitroglycerin. Pilocarpine was less risky than supposed and was useful for restlessness, insomnia, and threatening uremia. Cannabis was superior to opium as a hypnotic. Some symptoms suggest that the kidney has an internal secretion, and though there is no proof of this, the administration of renal extracts has seemed useful, but a stable preparation would be necessary.

Sir Lauder Brunton advocated in the middle stage strophanthus, as it did not constrict the vessels like digitalis. For high tension, 20 grains nitrate potassium with 1 gram sodium nitrite, in a tumbler of water, every morning. This could be continued for years. Extracts of different parts of the kidney differed—probably they should be made from the cortex.

Dr. De Haviland Hall advocated milk diet for at least three or four weeks, and had seen complete recovery from it, the patient passing as a first-class life for insurance. He did not support butcher's meat too soon, poultry and fish being safer. He agreed on the value of pilocarpine. Decapsulation for large white kidney had been done in America rather frequently. In granular kidney, which seldom began before the age of forty to fifty, he spoke of the significance of skin lesions. Strophanthus he combined with potassium iodide. Headache with high tension was relieved by very small doses of trinitrine, one-third of a minim, repeated often if needful.

Dr. C. W. Chapman referred to the mental effect on a patient who was told he had Bright's disease. For the asthmatic attacks colchicum, iodide potassium, and lobelia were useful.

Dr. West in reply repeated that although milk treatment was the very best in the early stage, he believed it was often continued too long. He was sceptical about decapsulation. The age of onset was nearly impossible to decide. Probably many cases of physiological albuminuria in early life eventuated twenty or more years afterward in granular kidney.

At the annual meeting of the Cancer Hospital last week, Mr. F. Bowreman Jessett warned the public against placing any reliance on reports of cures in the sensational section of the daily press, which were calculated to cause disappointment. Even though, under treatment, a case might receive some alleviation for a time, a couple of years must elapse before it could be seen whether any permanent benefit resulted. The surgical and pathological staff had visited Paris on the invitation of Dr. Doyen, in order to carefully study his method of treatment, but Mr. Jessett regretted to say that in not one single case had any appreciable good been done by injection of the serum, while in some instances positive harm had resulted. So far, therefore, as the Doyen treatment was concerned, nothing was likely to come of it.

The Liverpool Tropical School has just issued its annual report. A sympathetic allusion is made in it to the untimely death of Dr. J. E. Dutton while engaged on the Congo in investigating trypanosomiasis and tick fever. The main points of interest in the work of the school are also outlined, and it is said that the generous support of the public has not been relaxed. At the same time further support is desired, to enable the school to continue the investigations already in hand, as well as to open new fields of research.

The proposed Institute of Medical Sciences of the University promises to be a success. The Goldsmith's Company has promised a grant of £10,000 on the assumption that a site for the building is provided in South Kensington.

Surgeon-General Thos. E. Charles, M.D., LL.D., Ed., F.R.C.P., Lond., K.H.P., late of the Indian Medical Service, died on February 22, aged seventy-one. He went to India in 1856, was through the sieges of Delhi and Lucknow, and was awarded medals and clasps. Later he became professor in the Bengal Medical College. He founded and superintended the building of the Eden Hospital. In 1880 ill health rendered a return to Europe desirable, and he resigned. Afterward he practised at Cannes and later still at Rome. He was greatly admired by all who knew him.

Deputy Surgeon-General Henry C. Herbert, M.D., F.R.C.S., died on March 2, after a short illness.

Dr. Tuckwell, many years leading physician of Oxford, died on March 2, in his seventy-second year. He was a Fellow of the London College of Physicians from 1870.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

STATUS OF THE MEDICAL PROFESSION—NEISSER'S WORK IN JAVA—RADIOSCOPY OF THE STOMACH—AN INSTITUTION TO COMBAT INFANTILE MORTALITY—GASTRIC ULCER—VON BEHRING'S TUBERCULASE—KOCH'S RESEARCHES ON RELAPSING FEVER.

BERLIN, February 20, 1906.

At the end of 1905 the total number of Berlin physicians was 2,636; this means a proportion of one physician for 772 inhabitants, and is two less than in 1904. In greater Berlin—that is, Berlin with all its suburbs—the figure amounts to 3,789, which is 11 more than in 1904, and gives one physician to 788 inhabitants. According to this increase the total number of German physicians has increased 1.9 per cent. and amounts to 31,041, so that in Germany also the medical profession need not expect more hopeful conditions for the future. New dangers are constantly arising which aggravate the physician's position. There are hardly any greater enemies to be found than the representatives of the different Krankenkassen, or lodges for medical treatment, but even these are in accord against a new danger. In Germany, and especially in Berlin, the project has been started of founding a new lodge, the "Mittelstands Kasse," with the intention of cheapening medical service. The now existing lodges generally have members whose incomes do not surpass two thousand marks, but because the term "Mittelstand" does not draw exact limits the whole German population is eligible for membership in this new lodge excepting only the upper ten thousand. All medical societies are discussing the matter, and I hope soon to be able to report energetic measures against this extraordinary danger.

Two guests at our medical societies have excited great interest; the first was Neisser, the well-known dermatologist from Breslau, who spoke before the Dermatological Society on the experiences gained during an eight months' stay in Java devoted to studying the syphilis of apes. Even in this tropical region difficulties were experienced, for, though the lower monkeys are easily obtainable, the orang-

outangs and gibbons are expensive and delicate, so that three-quarters of them very promptly die. On the other hand it was also difficult to get hold of cases of recent syphilis, because the natives are accustomed to seek medical aid only in severe cases, and object to all surgical measures. Although Neisser detailed a great variety of experimental observations of much interest, the chief results of all the investigations were the following: (1) The fact that the poison could be modified by passage through a number of animals; (2) that we now have the means of producing syphilitic poison in every quantity. The second guest was Holzknecht of Vienna, who addressed the medical society on the use of the Roentgen rays in relation to gastric disorders, and especially in regard to cancer of the stomach. The examination is made possible by filling the stomach with food mixed with subnitrate of bismuth and, instead of resorting to radiography, as has formerly been advised, the speaker made direct observations by means of the fluoroscope. In the course of an extensive series of observations it was discovered that 80 per cent. of adult stomachs were not in the horizontal position as we are accustomed to see them in the cadaver and at laparotomies, but were stretched longitudinally, with a rising curvature at the pyloric end, the lowest part reaching below the navel. Although this condition was found in 80 per cent. of all cases, the speaker believed that it was an abnormal position, as children less than four years of age possess a horizontal stomach, and the other form is mechanically very unfavorable for the disposal of food. By the same method gastric tumors may be demonstrated, for if the bismuth meal does not fill the entire stomach, but on the screen shows notches along the border which cannot be obliterated by manipulating the stomach through the abdominal wall, the diagnosis of a tumor is very probable. Twelve cases which could not be recognized by palpation as having an abnormal stomach showed this sign, and in every case the operations confirmed the diagnosis of tumor.

Our emperor and empress have refused all gifts on the occasion of their silver wedding, and the money which was to be spent in that way is to be employed for various charities, such as homes for the blind and aged. At Berlin many prominent personages held a meeting on January 11, at the Reichstag, to found an institution for the purpose of combating infantile mortality, as a silver wedding gift to the emperor. Heubner has urged that the new institution be devoted to the purpose of determining the best means of securing artificial food for infants. Dietrich presented a plan for the proposed institution. During the last month of her pregnancy the prospective mother is to be admitted and prepared for nursing by good food and care of the breast. After birth the mother is to be transferred to a mothers' home, where observations can be made on the best methods of nursing; artificial feeding can be studied in another department devoted to children whose mothers have no milk. In still another department children with intestinal diseases will be cared for, and provision is also to be made for furnishing to the poor, free of charge, milk of a high quality, which is to be obtained from a special department intended for investigating the question of milk production. Charlottenburg has donated a site for the institution, and there is hope that the first buildings will soon be erected.

At the medical society Senator gave some therapeutic suggestions in regard to treating ulcer of the stomach. The diet he recommends is intended to avoid the starvation involved in the ordinary plan of treatment, while at the same time any tendency to fresh hemorrhages will be checked. The foods he employs are gelatin, fat, sugar, and albumen. The great advantage of the gelatin consists in its hemostatic properties; the sugar is given in the form of an eleosaccharate mixed with a solution of gelatin; the fat is given in frozen balls of whipped cream. On this diet the patient is well nourished, without encouraging the occurrence of fresh hemorrhages.

At the annual meeting of the German Agricultural Society much interest was aroused by von Behring's paper on the fight against bovine tuberculosis, and on the production of hygienic milk. Von Behring said that the investigations now under way in his institute were a continuation of the researches reported on last summer at Paris and were not concerned with the question of bovovaccination; the latter question he considered had been brought to a certain degree of perfection, and would have been placed in other hands were it not that he required extraordinary sums for the new researches, which were to be devoted to human tuberculosis. He repeated his warning uttered at Paris against attempts to employ bovovaccination in cases of human tuberculosis, and stated that he would never assume the responsibility of injecting living tubercle bacilli into infants for the purpose of preventing tuberculosis. Bovovaccination can be used only on young calves, and the injection of the material into older cows had not proved practical. The same amounts which did not affect the new-born calf produced disease and death from edema of the lungs in cows. If the vaccine were injected simply under the skin the intended effect was not produced, for a local tuberculous deposit was set up from which living bacilli might enter the blood-vessels and infect the milk. At Paris the speaker had mentioned a preparation which was free from bacilli, and therefore could not infect the milk, and yet gave to the cows a certain immunity. This preparation, called tuberculase, was a yellow fluid and looked like wax. Its injection was to be repeated at intervals of several weeks, but as it could be given subcutaneously by untrained persons and was not very expensive, there would be no difficulty in its general introduction. On treating with tuberculase cows that were secreting tubercle bacilli in their milk the organisms disappeared after several weeks, and this result gave him the idea of using tuberculase in the treatment of human tuberculosis. The conditions in the latter case were quite different, however, and even at Paris he had never spoken of a remedy for curing tuberculous tissues, but only of a means for immunizing young individuals against the disease. At the most this remedy enabled the human body already suffering from tuberculosis to become resistant against a new infection. In closing, von Behring said that he believed that he would soon be able to produce a milk from cows that would serve for the immunization of infants, and that even though years might be required to accomplish this end he felt sure of attaining it. In the discussion that followed Damman of Hanover argued against several points of von Behring's paper and asserted that it still was better to kill diseased cows and compensate their owners. Von Behring answered that most veterinary surgeons did not believe this, for the demand for bovovaccination was increasing every month. In speaking of the fear that the bovovaccine might infect the vaccinator von Behring said that none of his companions had become ill and that those who were tuberculous had improved after working with the remedy.

It was natural that all Berlin should be anxious to hear the report of Robert Koch's last visit to Africa, and the great hall of the Medical Society was completely filled when Koch read his paper on African relapsing fever. He followed the caravan route from Daresalam to Morogoro and from there still further into the interior. This journey was the means of clearing up what has long been a mystery, for, although the parasite of European relapsing fever has long been known, the method of its transmission from man to man has until now remained undiscovered. Koch was able to show, however, that the spirochete which causes the African relapsing fever was also contained in the bodies of certain ticks, which feed only on human blood. When full grown, the insect attains the size of a lentil, and it was found that the specific organisms of the disease could be found in the tissues of the tick, and particularly about the ovaries. Ticks of this species were found to be very common in the shelter huts along the caravan route, but Koch and his white companions escaped infection by sleeping in a tent pitched a short distance away from the road, while of the native attendants who slept in the huts several developed relapsing fever. The disease is very refractory to treatment, as even quinine is ineffectual, and at present the only remedy appears to be to warn travelers to avoid the shelter huts along the caravan route, the dirt floors of which seem to be full of the ticks.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

BERIBERI—CHOLERA—THIRD ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

MANILA, P. I., February 14, 1906.

THE regular monthly meeting of the Manila Medical Society was held in the library of the laboratory building of the Bureau of Science, on Calle Herran, at 8.30 P.M., Monday evening, February 5, 1906. Dr. Maximilian Herzog, the pathologist of the Bureau of Science, read a paper on beriberi, which he illustrated with special lantern slides. It will be remembered that Dr. Herzog has recently spent several months in Japan, in making a special study of the disease, particularly with regard to its etiology and pathology. He prefaced his remarks by stating that he was very sorry that he had nothing new to offer. In the main, his paper was very much in accord with the views expressed by Hamilton Wright in his recent article on beriberi. Dr. Herzog was of the opinion, however, that there were not yet sufficient data to support the view of Wright that the toxins of the disease entered the system through lesions of the stomach or duodenum, and stated that the most careful examination of the walls of the stomach or intestines in a

great number of autopsies which he had performed in Japan failed to show anything unusual or different from that found in subjects who had died of other diseases. With regard to the etiology, he stated that all the theories which had been advanced up to the present time were very unsatisfactory.

Referring to the Russo-Japanese war, he stated that over fifty thousand Japanese soldiers were afflicted with the disease during the war; that the sanitary and hygienic measures which were taken had no appreciable effect in preventing the outbreaks. The same prophylactic measures which were so successful in avoiding dysentery, typhoid fever, and other diseases incident to military campaigns, were entirely ineffectual when applied to beriberi. He stated that one of the principal Japanese surgeons attributed the outbreak of beriberi among the troops to the bad quality of food, particularly rice, which had been purchased in Hongkong. This experience accords with the results of Takaki's dietary reforms in the Japanese navy which led to a practical extinction of the disease in that service. The lantern slides which he exhibited showed the degeneration of the axis cylinder, and particularly the roundish deposits under the myelin sheaths.

At the present time the Bureau of Health is carrying on a vigorous campaign to eradicate cholera from the provinces of Pampanga, Bulacan, and Nueva Ecija. The infected territory has been divided into small districts, and a medical inspector of the Bureau of Health has been placed in charge of each one of them. The measures were made as simple as possible, and consist mainly of earth closets being installed in all the villages, the actual cases of cholera being isolated and the premises thoroughly disinfected, and the people induced to boil their drinking water. Apparently this campaign is meeting with considerable success. At any rate, the number of cases is being gradually reduced. At the beginning of the week there were about eighty cases per day, until now the number of cases has fallen to about twenty, and it is hoped that before many days, if this rate of improvement continues, the epidemic will be at an end.

The total number of cases of cholera in the city of Manila since the outbreak has been 272, and 241 deaths; the total number of cases in the provinces has been 3,083, with 2,281 deaths.

The third annual meeting of the Philippine Islands Medical Association will be held in the library of the Bureau of Science, commencing February 28, 1906, and extending for three successive days thereafter. An excellent program has been arranged. A paper on "Radium and Radioactivity" will be read by Prof. P. C. Freer, formerly of Ann Arbor. A paper entitled "Uber die Typen der Dysenteriebacillen und die Serum-Therapie der Dysenterie" will be read by Prof. K. Shiga of Japan, and another paper, entitled "Ueber die Bekämpfung der Pest in Japan," will be read by Prof. S. Kitasato. Another paper, entitled "Immunization Against Plague: Comparison of the Value of Protective Inoculation with 'Aggressin,' with that of Vaccination," will be read by Dr. Richard P. Strong. The above papers are all by men of international reputation, so that this meeting of the Philippine Islands Medical Association will be of particular interest not only to the Philippine Islands, but to the entire scientific world as well.

THE RELAXING WARM BATH IN GYNECOLOGICAL EXAMINATIONS.

To the Editor of the Medical Record:

Sir:—Referring to your article in the issue of March 17, 1906, giving credit to Profanter for a novel procedure consisting in placing the patient in a relaxing warm bath for gynecological examination, I beg to say that the general principle is by no means new. In *International Clinics* for April, 1899, I discussed the general subject of "Palpation in the Warm Bath." At this time I had practised the method for a considerable time and stated that I had gotten the hint from some German source which I could not definitely state. Since that time Sticker has written on the method and, I believe, has claimed originality for it. Whether the article from which I derived the idea and brought it to the attention of the American profession was his or not, I am unable to state. While I have frequently used the method in external palpation of the pelvic organs, I do not recollect ever having used it for the combined vaginal and abdominal palpation. But as the method was published in Germany at least as early as 1898, it seems incredible that it should not have been used in bimanual examinations in the ordinary sense long before the appearance of the article which you quote.

A. L. Benedict, M.D.

Buffalo, N. Y.

Progress of Medical Science.

Boston Medical and Surgical Journal, March 22, 1906.

Cerebral Seizures with Suboccipital Pain; Miliary Cerebral and Gross Vertebral Aneurysms.—An elaborate history is given by W. D. Ruston and E. E. Southard of a woman of sixty-nine years with moderate arteriosclerosis and an enlarged heart. She felt attacks of severe boring pain localized in an area the size of a half dollar in the suboccipital region, had occasional slight chills with an elevation of temperature, showing morning remissions. Leucocytes over 17,000. Death came in coma, two hours after a sudden cold feeling in the forehead on the nineteenth day. An anatomical summary of the autopsy findings so far as concerns the nervous and vascular systems is as follows: general arteriosclerosis (aortic, coronary, cerebral, splenic, renal). Fusiform aneurysms of both vertebral arteries. Miliary aneurysms of cortical and ganglionic arterial systems. Extensive multiple cerebral hemorrhages (of varying age) in substance of anterior poles of brain and elsewhere, with oozing into superficial pia mater. Summaries are given of the histories of various similar cases already on record, though none are exactly like that here described. Their own case the authors classify as of the "imitative" type. The patient's peculiar localized pain was probably caused through pressure of the vertebral aneurysms aided by heightened intracranial pressure attending the cerebral hemorrhages. They note also that the search for the particular cause of a given pain is not always as minute as it might be. Pains are, perhaps, too readily classed as functional. The orthopedists occasionally insist on the possible relation of neuralgia to the pressure of dilated or varicose veins upon the regionary nerves. The present case brings out the possibility that arterial disease may effect the same result in one of the favorite sites for functional pain.

New York Medical Journal, March 17, 1906.

Teaching the Deaf Child to Hear.—G. H. Makuen presents the following conclusions: First, the hearing of the deaf child may be greatly improved by the systematic use of oral gymnastics. Second, the speaking voice used in close approximation to the ear is the most effective form of oral gymnastics for children. Third, the training of speech should be carried on simultaneously with the hearing exercises. Fourth, The degree of success obtained will depend largely upon the patience and skill of the teacher.

Surgical Intervention in Benign Gastric Lesions.—A. J. McCosh considers that as a result of modern surgery of the stomach we are logically enabled to draw the following conclusions: (1) That many gastric symptoms formerly considered as purely functional are caused by distinct anatomical conditions or pathological lesions. (2) That for diagnostic purposes the stagnation test is of much greater value than is any chemical examination of stomach contents. (3) That spasmodic pyloric contraction frequently occurs as the result of derangement of gastric secretion or abrasions of the mucous membrane of the stomach or of the duodenum. (4) That gastric hemorrhage frequently occurs without the existence of the typical round ulcer, the bleeding emanating from minute abraded spots or cracks, which may be scattered about throughout a patch of intensely congested mucous membrane. (5) That not uncommonly, large inflammatory masses, constituting a palpable tumor, may exist, caused by and surrounding an ulcer. (6) That duodenal ulcers are of frequent occurrence. (7) That in the great majority of cases of contracted pylorus, whether it be due to pyloric spasm, inflammatory hyperplasia of the circular muscular fibers, or stricture with adhesions from an ulcer, a gastroenterostomy will effect a cure, or at least markedly relieve the symptoms. (8) That in a long series of cases, the mortality of this operation should not be over 5 per cent., provided that, through neglect, the patients have not been allowed by so-called conservative treatment to drift into a semimoribund condition. (9) That, in cases of simple dilatation with atrophy of the stomach without constriction of the pylorus, a gastroenterostomy will generally fail to cure the patient. (10) That, following gastric operations there must be, if we strive for perfect results, continuous dietetic and hygienic treatment, extending over months or even years.

Etiology of Acute Articular Rheumatism.—R. I. Cole declares that three possible theories of the etiology of rheumatism are worthy of careful consideration. First, that it is a definite, specific, infectious disease, the cause of which we do not know, and that the cocci which have been isolated are secondary invaders. Second, that there is no such specific disease as acute articular rheu-

matism, but that the cases grouped under this term are those mild and moderately severe cases of general streptococcus infection in which the joints and heart are generally involved. Third, that acute articular rheumatism is due to a special form of streptococcus, which at present we have no accurate method of distinguishing from *Streptococcus pyogenes*, but which, owing to the specific character of the lesions induced in man, must possess special characteristics. This author does not think we are justified in using the term "*Micrococcus rheumaticus*," any more than we are in saying *Micrococcus cyanogenus*, or of ordinary *Diplococcus pneumoniæ* differing from the *Micrococcus lanceolatus*, which causes a great variety of infections. Further study may show that the streptococci isolated in rheumatic fever have special features. This point is not yet proven, and this proof, when presented, must amount to more than a mere demonstration of differences in degree of experimental lesions produced in animals. At least, such differences must be shown to be constant.

Causes and Cure of Cancer, and Some of the Causes of Failure in Treating Malignant Growths by X-rays and Electric Currents.—According to R. Reyburn, the following facts express the history of the causation of cancer: 1. It is a disease of senility or decay of the tissues, or at least occurs at the time when the retrograde metamorphosis of the tissues is taking place. 2. It is comparatively rare in hot climates, and especially where the diet of the inhabitants is composed chiefly of rice, or other starchy foods. 3. It is very prevalent at the present time where animal food is largely consumed; the number of cases of cancer has been found to increase in proportion to the increase in the consumption of nitrogenous or animal foods. 4. The theory that cancer is caused by a protozoon or animal microorganism, seems to be disproved by later investigations, and the probability is that cancer is simply erring epithelium which has taken an abnormal growth and development. The most potent cause of failure in treatment is the neglect of the patient to apply to the physician until the case has become hopeless. One reason for failure with the *x*-ray and electric currents, is that the application of these agents is made over too small a bodily area. It must be remembered that the cancer cells are infiltrated into the tissues over a much larger area than the apparent surface of the tumor; a space three times the size of the tumor should always be treated by either the *x*-rays or the continued current. Curative effects of these agents are manifested in one of three ways: 1. In the very earliest periods of the morbid growth these agents cure by their stimulating and nutritive effect upon the vital processes. 2. In the second or more developed condition of the morbid growth, when we apply stronger currents of electricity or give more vigorous *x*-ray treatment, we inhibit the growth of the tumor. 3. When the growth of the tumor has more fully developed, we have to depend upon the necrotic or caustic effect upon the morbid growth of strong application of the *x*-rays or powerful galvanic currents. Finally, it is to be noted that the local inflammation induced by these agents causes a zone of lymph to surround the tumor, thus incasing it and preventing its spread.

American Medicine, March 24, 1906.

Malarial Fever.—Albert Woldert gives a detailed account of his personal observations made in Philadelphia and Texas regarding the Anopheles mosquito. He says that in Philadelphia he only once failed to find the malaria carrying mosquito (invariably the *Anopheles quadrimaculata*) in the houses in which autochthonous cases of malarial fever prevailed. In Texas he has never failed to find them. He also found that the male mosquitos became more numerous as frost came on, while the females gradually disappeared. He gives a thorough description of the development of the malarial parasite in the mosquito and a full discussion of the period of incubation in the different forms of malarial fever.

Etiology of the Hemorrhagic Diathesis.—Wm. W. Carter classifies the subject as follows: (1) Infectious diseases and toxic conditions as etiologic factors. (2) Cachetic conditions. (3) Purpura hemorrhagica. (4) Hemophilia. Malaria is one of the most important causes of the hemorrhagic diathesis. The hemorrhagic diathesis is also sometimes developed in such cachetic conditions as pernicious anemia, leukemia, scurvy, chronic nephritis, syphilis, and diseases of the liver attended by accumulation of bile in the blood. Mechanical defects in the circulation, as in valvular disease of the heart and senile purpura due to atheroma of the vessels and retarded circulation, produce a tendency to bleed. Among toxic agents causing this condition may be mentioned: Phosphorus, antipyrin, mercury, and chloroform. Purpura hemorrhagica forms the connecting link between the symptomatic hemorrhagic diathesis and the pure type of the hemorrhagic diathesis or hemophilia. It cannot be classed under the head of hemophilia, as it is transient and not hereditary. Its cause is unknown. The true etiology of the affection is still unknown.

Nose and Throat Diseases From a Constitutional Standpoint.—J. L. Harkness, in discussing nose and throat diseases from a constitutional standpoint points out the intimate relation which exists between these organs and other organs of the body, as for instance, laryngitis and pharyngitis of a rheumatic or lithemic origin. He also notes the relation between varicose veins of the leg and hypertrophied tonsils, and the effect of adenoids which cause gastric disturbances and vice versa, inanition in children, etc. He calls attention to the inflammatory conditions of the sinus (with consequent systemic effects) caused by a deflected septum, and shows the close relation existing between nasal conditions and the genitalia both in normal physiological conditions and in disease.

Journal of the American Medical Association, March 24, 1906.

The Formation of Uric Acid.—L. B. Mendel discusses the formation of uric acid in the body, reviewing the later physiological investigations on the subject. The probable endogenous and exogenous antecedents are considered and the probable chemical reactions involved in the formation of uric acid from other purin bodies are given. He calls attention to the peculiar rôle of enzymes in both the formation and destruction of uric acid. The organs and tissues concerned in these processes and the factors modifying these metabolic changes are all considered and treated of in detail with full references to the leading literature on the subject. There are many admittedly missing links, especially as regards the origin and significance of endogenous uric acid. The questions yet remain to be solved as to the cause of the modifications in physiologic conditions, the variations of the endogenous output, the tolerance of the organism, the chemical regulations of the balance between formation and destruction, the differences in different species as regards purin metabolism, and still many other unmentioned questions yet remain for investigation.

Eyestrain and Digestive Organs.—G. M. Gould comments on a statement made by Dr. J. H. Musser in *The Journal*, No. 4, 1905, that the cure of so-called bilious attacks, etc., by the correction of errors of refraction is a common and familiar occurrence. He points out that it is sixteen or seventeen years since he himself first began to affirm and to reaffirm this truth, and this is the second convert made among the diagnosticians, leading practitioners, or gastrologists. Notwithstanding the admission that the fact "is familiar to all," Gould reviews the text-books and literature and shows how little mention it has received and how generally it has been ignored by the authorities. He claims that he began and for ten or a dozen years was alone in advocating the ocular origin of these diseases, and objects that after being ignored so long it should now be accepted without due credit to its earliest advocate, as simply a truth "familiar to all." While the admission, he says, is a breach in what have seemed the impenetrable walls raised by the authorities and text-book making classes, he doubts its sincerity and calls for honest reports of cases from those who must observe them, and a general scientific utilization of the truth in practice.

Faciohypoglossal Anastomosis.—A. L. Taylor and L. P. Clark report six cases, three of which were previously published in the MEDICAL RECORD about two years ago, of the faciohypoglossal operation for Bell's palsy. One of these operations was a failure on account of the degeneration of the facial nerve, in the others varying degrees of success were obtained. There was no mortality, and in three of the cases voluntary motion has returned to a very satisfactory degree. The authors discuss the operation and favor the method of lateral rather than end-to-end anastomosis as causing less functional disturbance in the long run than would be the case were the hypoglossal nerve completely divided. The time which should elapse before operation is variously estimated by authorities, the only reason for conservatism being the great possibility of spontaneous recovery. For present purposes, the authors think that the interval of a year may be allowed, since in that time returning motion would be appreciable in cases in which spontaneous recovery would occur. Where the nerve is divided and perhaps a segment removed the anastomosis should be done at once. On the other hand, there is no limit of time when the operation is contraindicated. Attention to the condition of the paralyzed muscles is imperative.

Entamœba Coli.—E. B. Vedder has investigated the stools of a number of normal individuals with special reference to the presence of *Entamœba coli*. Many of these individuals were native Filipinos, members of the Philippine constabulary; the remainder were American soldiers. The organism was found in 50 per cent. of the Americans examined, the next most common parasite, the *Cercomonas intestinalis*, being present in 24 per cent. In the natives the *Entamœba coli* was found in 70 per cent. The next most common parasite, the *Ankylostomum duodenale*, was present in 64 per cent. These findings in healthy individuals support the stand already taken by Schaudinn, Craig, and others that the *Entamœba coli* does not produce dysentery. The pathological significance of the ankylostomum is lessened by the small numbers found. It is productive of disease only when present in large numbers, and Vedder protests against the practice of making a diagnosis of uncinariasis in every case in which the ova are found, and quotes Manson, who says that serious consequences are by no means invariable in the presence of this parasite. The presence of the entamœba was determined in several cases by repeated examinations during several months without any pathological findings. Intestinal parasites were generally more frequent in the natives than in the American soldiers, which is accounted for by their habits of drinking unboiled water, while the American soldiers in the Philippines, save under exceptional circumstances, drink only boiled water.

Endoaneurysmorrhaphy (Matas).—H. Lilienthal reports a case of right subclavian aneurysm in which he attempted to perform Matas's operation, but failed on account of the not cutting off of a sufficient number of tributary vessels. The older method of proximal ligation was then followed with the result of a complete cure. In spite of the failure in this case, he thinks the Matas operation has decided advantages and would have been successful had a slightly different technique been employed. In a future similar case of sacculated aneurysm of the right subclavian, the following technique is suggested: The incision should be along the anterior border of the sternocleidomastoid muscle from a point about at the level of the cricoid cartilage to the intraclavicular notch, thence along the clavicle to its outer fourth. The sternocleidomastoid may then be divided at its insertion and the common carotid artery exposed and followed to its origin in order to find the subclavian. One should remember that anomalies are sometimes found here. Temporary ligatures should now be placed on the carotid and subclavian and the aneurysm be carefully observed, both as to pulsation and the refilling of the sac after it has been emptied by manipulation. If pulsation persists, or if there is a rapid refilling, a temporary ligation of the axillary artery is necessary. There should be no free dissection of the sac and no exposure of the smaller subclavian branches, such as the vertebral, thyroid axis, internal mammary or superior intercostal. The aneurysm may now be opened by an incision small enough to be plugged by the exploring finger and the interior of the sac carefully examined to ascertain the number of large openings. The character of the hemorrhage must be noted. It will probably not be severe and may be found to proceed from a single orifice of moderate size. There will probably not be pulsation. Endoaneurysmorrhaphy may now be performed as described by Matas, and on its completion the ligatures may be removed, first that of the carotid, second the axillary, and third the subclavian. If everything is in order the wound may be closed without drainage. In dealing with the left subclavian the steps must be changed somewhat to suit the anatomy."

The Lancet, March 10, 1906.

Vaginal Cysts.—The case of a multipara of thirty-eight years is reported by W. P. Gowland. Bearing-down sensations led to examination, which revealed two vaginal cysts. One of them was as large as a hen's egg, and situated about half way up on the left posterolateral aspect of the vagina, while the second one was of about the size of a grape and situated opposite the first one on the right side. The patient stated that five years ago she had a very difficult labor, the child being large, and she assigned the commencement of her symptoms to this date. The cysts were dissected out with difficulty and incompletely. The contents were gelatinous. The report on them was as follows: Both cysts are of the same structure. On one surface—portion of stratified squamous epithelium of vagina. On other surface—single layer of columnar epithelium of varying height (probably due to pressure within cyst) and in places distinctly ciliated. Between the two fibromuscular tissue, which, in the case of the larger cyst, is considerable in amount. The cysts are probably of Gärtnerian origin.

Bilharziosis of the Vermiform Appendix.—G. L. Crimp discusses a previously reported case of this nature. He strongly criticises the theory of infection through drinking water, for he considers it proven that the mouth is not the channel of infection. He admits that infection may occur through skin, urethra, anus, vulva, etc., but denies that it is immediate. The only question is to locate the site of intermediate generation. Evidence goes to show that this site is the liver. From this point the young adults, male and female, pass into the portal veins, mature, copulate, and work their way into various regions (among which the rectum and urogenital organs predominate), there to lay their eggs, which are the cause of the local lesions of bilharziosis

The Animal Reactions of the Spirochete of the African Tick Fever.—A series of experiments is described by A. Breinl and A. Kinghorn. They have been able to infect with the spirochete of African tick fever in addition to monkeys, a horse, a dog, rabbits, guinea-pigs, rats, and mice. The rabbits, rats, mice, and some of the guinea-pigs have succumbed to the infection. Previous observers have not been able so far as is known, up to the present, to infect any animal other than monkeys with the *Spirochæta obermeieri*. These experiments lead to the conclusion that the spirochete of the African tick fever differs from the *Spirochæta obermeieri*. While the animal reactions are different from those of the *Spirochæta obermeieri*, the pathological anatomical lesions are the same as those described in human beings who have succumbed to infection by *Spirochæta obermeieri*.

British Medical Journal, March 10, 1906.

Catarrhal Deafness.—F. F. White reports two cases in which otectomy led to a considerable improvement of deafness from catarrhal changes. It is too soon after the operation to form an idea of the permanency of the results. The author has operated eight times in all for catarrhal deafness. All his patients were definitely benefited after failure to improve under other methods of treatment.

Chloroform in Consumption.—H. D. Woodcock generally prescribes the spirit of chloroform as an inhalant, the preparation being of 5 per cent. strength. He has tried it in over two hundred cases. It has never done any harm, and the inhalation has seemed to relieve the cough, but he cannot say that the general condition of his patients has been definitely and permanently benefited.

Ophthalmology, Past and Present.—S. Snell compares the ophthalmology of his student days with that of the present time. He considers the appreciation of astigmatism and its correction by cylindrical glasses as one of the most notable advances in this specialty. The matter of correcting low degrees of astigmatism has been taken up and its importance recognized. So there has been a very large increase of prescriptions for cylinders. As a result of these advances, much relief has been afforded to patients suffering from headache and other neuroses. Visual acuteness has been increased. The important relation errors of refraction bear to headache has become increasingly understood. Possibly the most frequent cause of headache is a faulty condition of refraction, and, in less numbers, of the muscle balance of the eye. It is not yet, however, as generally recognized as it should be that the most distressing forms of headache and other neuroses are not infrequently present where no defect of vision is complained of; but it is, nevertheless, true that a careful examination discloses a faulty state of refraction, the detection of which, and its proper correction by spectacles, is usually followed by relief to the distressing symptoms. The discovery of modern antiseptics has been of inestimable advantage to ophthalmic as to other special surgery. The immediate treatment of eye injuries and the use of antiseptics has lessened the frequency of sympathetic ophthalmitis and has led to a greater frequency in the restoration of sight than was formerly the case. As to the teaching of the present day, the author thinks that the average student needs a sufficient acquaintance with ophthalmic work to meet the requirements of general practice. A knowledge of the commoner diseases and their treatment, the employment of test types and trial glasses, and, of course, the use of the ophthalmoscope, are all necessary. He does not place much value on formal lectures delivered away from the clinic, and gives in outline the plan he is accustomed to follow in teaching at his own hospital in Sheffield.

Enucleation of Fibromyoma of the Uterus During Pregnancy.—J. Stewart gives the clinical history of a primipara of thirty-five years at about the end of the fifth month of pregnancy. She presented a movable lump in the side and had been attacked with severe pain, vomiting, and rise of temperature. At first it was con-

sidered that she was threatened with a miscarriage. Later it was thought that she had an ovarian cyst—probably a dermoid—which had undergone axial rotation. Operation was deemed advisable, and it revealed a sessile mass attached to the left of the fundus. There were no adhesions and no discoloration of the peritoneum covering the tumor, showing that there was no inflammatory condition present in it. On section of the tumor after hardening there was neither hemorrhage into its substance nor beneath its capsule. The pain was due, the author believes, to the malignant influence all fibroids have upon the pregnant state—a tendency to produce abortion or miscarriage. The uterus was gently rotated so that the tumor appeared in the abdominal incision. The growth was sessile, with a broad base, and although truly subperitoneal it was deeply imbedded in the wall of the uterus, more than one-third of the tumor lying in a saucer-shaped cavity. A circular incision was made through the peritoneal covering near the base of the tumor, which latter readily shelled out of its bed. The bleeding from the tissue in which it was embedded was profuse, as none of the bleeding points would hold a ligature, the uterine tissue being so soft and friable, and the blood vessels so fragile. Pressure was applied for a time, and then the sides of the cavity were drawn together with Pagenstecher's thread. It is interesting that this patient had no uterine contractions, nor pain of any moment, although there was a considerable injury to the wall of the uterus, neither were the fetal movements interfered with. No antiseptics were used. The patient was delivered of a boy at full term.

Berliner klinische Wochenschrift, February 26 and March 5, 1906.

The Destruction of Both Eyes by the Larvæ of Flies.—Schultz-Zehden describes this remarkable case. The patient was a female vagrant, forty-seven years old, who was picked up by the police while lying unconscious in the fields. The hospital physician under whose care she first came stated that he had removed from different parts of her body a liter measure full of larvæ of the blue bottle fly. These were present in the conjunctival sacs, the nose and the ear, and at the back of the neck there was a large ulcerated area extending almost down to the bone. When the author saw the patient, both eyes had been damaged to so great an extent that their removal was necessary. In the vitreous of the one eye a large parasite was discovered, and both corneæ had been almost completely destroyed. The author supposes that a catarrhal condition had existed in this patient's eyes, the secretion of which attracted the flies and led to the deposition of their eggs in this situation, as it is well known that bluebottle flies have a predilection for placing their ova in suppurating wounds. The alcoholic coma in which the patient probably remained for some time, afforded the necessary opportunity for the development of the larvæ. In the literature of the last one hundred years the author was able to discover only one similar case, which was recorded by Cloquet in 1823. His patient was a rag-picker, who also was found lying in the fields, with both eyes destroyed in this way.

Active Lymphocytosis.—Wolff-Eisner reviews at much length the evidence in favor of the opinion that the lymphocytes possess the power of ameboid motion and active migration when subjected to suitable chemotactic stimuli, such as those afforded by the toxins of tetanus or tuberculosis. He discusses the arguments of the opponents of this view, particularly those of Israel, who maintains that the presence of lymphocytes in pleural or peritoneal exudates is to be explained by assuming that they are washed out of the lymphatics and the tissues by the accumulating fluid. The author cites his own observations on artificially produced exudates in mice, and those of Schridde on specially prepared sections, as well as the conclusions of several other investigators in support of the view that Ehrlich's dictum that the power of active migration is not possessed by the lymphocytes is no longer tenable, and that the occurrence of active lymphocytosis must now be regarded as a recognized fact.

Rachitis as an Epidemic Disease.—Hansemann considers rachitis not as a bone disease, as it is usually classified, but as a disease of metabolism, as is gout, for example. Just as renal affections are associated with gout, pulmonary inflammations and intestinal catarrhs occur in connection with rachitis. He especially emphasizes the remarkable predisposition to the infectious diseases exhibited by rachitic children, and states that his records rarely show cases of death from diphtheria, scarlet fever, or measles, in which the patients were not rachitic. This tendency is especially marked in regard to whooping-cough. In attempting to discover the etiology of rachitis, Hansemann says it is necessary to study the conditions existing in animals kept in captivity. While rachitis is the greatest enemy with which those in charge of zoological gardens have to deal, efforts to identify the cause of rachitis with particular peculiarities of diet have been entirely unsuccessful. The disease does not occur in animals in the wild state, nor in savage races of man, yet practically all wild animals are very prone to it when born in captivity or when captured while still young. It is the author's view that rachitis is simply a disease of domestication and that man suffers from it because he has become domesticated, using this term in the sense of a condition different from the natural state. The chief factors involved are the absence of a sufficiency of fresh air and freedom of motion for the young, and the validity of this argument is attested by the fact that rachitis is practically unknown in Japan, where babies are exposed to the fresh air to a much greater degree than is the case in other countries, and where their clothing is such as to permit of the greatest possible freedom of movement. The effort to restrict the spread of the disease must be based on these lines and on a general improvement in the hygienic condition of civilized man as a whole.

Disease of the Aorta in Congenital Syphilis.—Bruhns made serial sections of the entire length of the aortas of nine congenitally syphilitic children. Eight of these were still-born or died shortly after birth, and one had lived to the age of three months. The vessels showed no gross lesions, but pronounced changes were discovered in the microscopical preparations in six of the cases. The author concludes that in congenital syphilis areas of inflammation occur, situated in the outer layers of the media and in the adventitia, especially in the neighborhood of the vasa vasorum. These inflammatory foci correspond closely to those described by Chiari in acquired syphilis as productive mesaortitis. The discovery of these changes in congenital syphilis, therefore, indicates that productive mesaortitis is to be regarded as a manifestation of syphilitic disease in the aorta.

Deutsche medizinische Wochenschrift, March 1 and 8, 1906.

Flagella on Spirochetes.—Zettnow gives the following method for demonstrating flagella on fowl spirochetes, and on the spirochetes of recurrent fever. The chief difficulty in staining the flagella, he says, lies in obtaining the organisms in preparations that are free from albuminous substances, and in which the spirochetes have not been damaged by manipulation. The blood is first to be defibrinated and then centrifuged, so that the serum is perfectly clear above the white layer of spirochetes. The serum is poured off and the organisms are washed three times with physiological salt solution, being centrifuged each time in order to free them from all traces of serum. A small loop of the bacterial sediment is mixed with two drops of water and is spread immediately on cover glasses that have been freed from all grease by heat; the films must be made very thin, so that they will dry rapidly, as otherwise the flagella are likely to be destroyed. The staining is then done with an antimony mordant and ethylamine silver.

Mercury Vapor Lamps for the Treatment of the Skin and Mucous Membranes.—Kromayer describes several different types of mercury vapor lamps which he has devised, the chief feature being the introduction of a water-cooling arrangement by means of which the heat produced is absorbed so that the appliance may be brought into direct contact with the affected areas. One form of the lamp is intended for introduction into the urethra. Clinical tests have shown that as a therapeutic agent the new lamp has the same qualities as the Finsen light or the iron light, but that the results are obtained at a much greater economy of time, current, and attendance on the part of nurses and physicians. The conditions for which it is recommended are lupus, superficial cancroid, nævus vasculosus, alopecia areata, acne rosacea, eczema, acute and chronic gonorrhea, and obstinate syphilitic ulcerations.

Observations on the Action of the Streptococcus Aggressin.—Weil obtained immunity in guinea-pigs by means of injections of aggressin obtained from the pleural cavity of rabbits that had been inoculated in this cavity with streptococci. Guinea-pigs that had received several subcutaneous injections of the pleural exudate of such rabbits proved to be highly refractory to subsequent inoculations with streptococci. The process of protection was apparently effected through an inhibition of the growth of the invading organisms, which then became the prey of the leucocytes. The author suggests that if the occurrence of an effective infection is to be ascribed to the bacteria themselves, which are enabled, through their attacking substances, to render ineffective the protecting powers of the organism—not its bactericidal properties—the body that has been immunized with aggressins will be able to neutralize the attacking substances of

bacteria, and in this way to restrict their multiplication This immunity is not directed against the bacterial body, and is not bacteriolytic. As regards the aggressin theory, it is a matter of indifference whether the aggressins are formed in the animal body or outside of it, whether they are secreted by the bacteria or are constituents of the bacterial body.

The Methods of Distribution of Pulmonary Tuberculosis from the Clinical Standpoint.—Fraenkel states that it has been recognized that the tubercle bacillus may infect the body and reach the lungs in three different ways. In the first place, by being carried into the deeper air passages with the breath; secondly, by traveling to the lung through the lymphatics; and, thirdly, by entering the circulating blood in some way. Each one of these possibilities has been established by numerous observations, though some investigators have fallen into the error of ascribing exclusive significance to one or the other of them. Primary hematogenous infection occurs only *in utero*, and is then caused by tuberculosis of the placenta. Its frequency has perhaps been underestimated, as Schmorl discovered tubercle bacilli in 45 per cent. of twenty placentas of tuberculous women examined. Recently numerous observers have emphasized the importance of the lymphatics as channels of infection; for example, Weleminsky's experiments on guinea pigs showed that the entire lymphatic system of the body is intimately associated with the bronchial glands, which represent a sort of collecting ground for the lymph flow of the upper as well as of the lower half of the body. The experiments showed that no matter whether the animals were infected in the upper portion of the body or the lower, the bacilli took the most direct route to the bronchial glands. The author believes that for a part of the cases of pulmonary tuberculosis in childhood the entrance of the tubercle bacilli into the lymphatic system forms the most probable mode of infection. In adults, however, inhalation is a more important consideration. The development of acute symptoms nearly always connotes the previous existence for a considerable length of time of a much older primary focus. By far the larger number of the cases of acute pulmonary tuberculosis, excepting cases of acute miliary tuberculosis, are due to aspiration. The lesions may occur as disseminated forms, as acute peribronchitic tuberculosis, or may be due to the rapid coalescence of areas scattered through both lungs. Diabetes, influenza, pregnancy, and chronic alcoholism predispose to the development of this type.

A Case of Malignant Mediastinal Tumor.—Voltolini describes this case, which illustrates the excessive malignancy of round-celled sarcomata. The patient was a man of forty-five years, whose illness began with griplike symptoms and who rapidly developed a mediastinal growth which caused his death within eight weeks. At the autopsy it was found that the entire aperture of the thorax was occupied by a hard, grayish-white mass the size of several fists which almost surrounded the pericardium on all sides and was closely adherent to it, to the lungs, and the anterior chest wall. The ascending aorta and the arch were completely imbedded in the mass, and the arch was so constricted that it would barely admit a finger. Only the apices of the lungs were aerated.

Münchener medizinische Wochenschrift, March 6, 1906.

Water as an Enemy to Radiography.—Lichtenstein calls attention to the well-known fact that so far but little progress has been made in the application of radiography to the diagnosis of obstetrical conditions. In spite of the improvements in technique satisfactory radiographs of the fetus *in utero* have not yet been obtained. Lichtenstein considers that the explanations usually offered for this difficulty in obtaining pictures under these conditions are not altogether adequate, and states that he believes that the true obstacle to perfect work in this direction lies in the presence of the liquor amnii. He describes experiments in which he made radiographs of iron rods through layers of water of different thicknesses, his results showing that the presence of layers of fluid of any considerable depth is sufficient to make it impossible to secure good radiographs. A layer of water fifteen cm. thick is, he says, entirely impermeable to the Roentgen rays. He suggests that the poor character of the radiographs usually obtained of vesical, renal, or biliary calculi depends on the same fact, namely that the presence of the fluid ordinarily surrounding these structures hinders the penetration of the rays. He therefore suggests the advisability of more extended study of the physical laws involved in order if possible to discover some remedy.

New Reactions for Diacetic Acid.—Riegler says that the following test which he devised in 1902 has been found very satisfactory: Three c.c. of a 10 per cent. solution of iodic acid and three c.c. of chloroform are shaken up with ten c.c. of the suspected urine. If diacetic acid is present the chloroform will remain colorless, but if there is no diacetic acid in the urine the chloroform will be colored red. Lindemann has suggested the following modification, which meets with Riegler's approval: Ten c.c. of urine are acidified with five drops of 30 per cent. acetic acid, five drops of Lugol's solution are added and the mixture is shaken up with two or three c.c. of chloroform. As in Riegler's test, the presence of diacetic acid is shown if the chloroform remains colorless. Riegler points out that some urines are so dilute that the reduction of iodic acid to free iodine cannot take place, and a source of error may thus be introduced into the test. This may be obviated by shaking up one or two c.c. of normal urine with two c.c. of 10 per cent. iodic acid and three c.c. of chloroform. The chloroform is thus colored violet, and then 10 c.c. of the suspected urine are well shaken with the mixture; if diacetic acid is present the chloroform will be decolorized. The author also describes a diazo reaction for the purpose of identifying diacetic acid with absolute certainty, but the procedure is rather complicated and cannot be described in a few words.

Test Breakfast or Test Dinner.—Dörner discusses the subject of whether it is better for routine use to employ the test breakfast or the test dinner, and states that in his experience the results obtained in examining patients by means of the test dinner were much at variance with those obtained by the physicians who sent them for diagnosis and who had based their own observations on determinations made by means of the test breakfast. The author made parallel observations on twelve patients whose stomach contents were analyzed on successive days after each type of test meal. The results showed considerable discrepancy, the amount of free HCl being in every case much less after the larger meal. Dörner therefore, concludes that in making determinations of gastric efficiency, it is better not to rely on the test breakfast alone. The test dinner should also be employed, as it alone furnishes an idea of whether the gastric secretion is sufficient in amount to fulfill the demands made by an ordinary meal. If it is found that the stomach can dispose of the test dinner, it may be assumed that it would be equally efficient in regard to the test breakfast, and the latter need not be resorted to, but if the examination after the test dinner shows a deficiency in free HCl the test breakfast must be employed in order to determine more nearly the degree of incapacity. If only the one test is to be used, it is preferable to give the test dinner. Only in achylia gastrica is more definite information afforded by the test breakfast.

French and Italian Journals.

Professional Dermatoses.—Lévi-Sirugue, after an interesting review of this subject, states that if it is impossible to suppress such dermatoses completely, it is at least possible to diminish the intensity and the repetition of the eruptions by wise prophylaxis. Extreme care will render less dangerous the contact with harmful substances which are met with in the industrial arts. Workmen should bathe frequently, and opportunities for such care should be afforded them free of charge in their places of work. In the summer, perspiration necessitates frequent ablutions. In the winter, cracks in the skin and excoriations which offer a portal of entry to infections should be combated by the application of neutral glycerin. Workkmen should be carefully selected, those showing any predisposition to dermatitis being rejected. Alcoholism predisposes to dermatitis or tends to exaggerate it. The urine of these men should be examined for both sugar and albumin. Rubber gloves offer a protection. Every professional dermatosis should be treated in the beginning, and may then be cured comparatively early. Oxide of zinc is excellent for simple erythema. For pruriginous and bloody lesions, wet anodyne dressings are indicated; boiled water may be employed for this purpose. If the lesion is intense, weak antiseptics may be used. If the epidermis is macerated, pomades are indicated, or if the lesion is very bloody, powder should be used.—*Gazette des Hôpitaux Civils et Militaires.* February 10, 1906.

Dislocation of the Elbow Outward and Backward; Reduction After Arthrotomy; Recovery.—Kirmisson has recently treated a case of this kind. The patient was a young boy and was not brought to the surgeon till twenty-five days after the accident, thus making recourse to arthrotomy necessary. This operation, which was done by the posterior route, easily allowed the reduction of the dislocation. In order to maintain the reduction, the arm was placed in complete extension for some days, and was not put into demiflexion until later. At this time, three months after the operation, the result is excellent. The articulation has recovered all of its movements, extension being the only one which is not yet quite perfect.—*La Presse Médicale* February 3, 1906.

Book Reviews.

The Signs of Internal Disease, with a Brief Consideration of the Principal Symptoms Thereof. By Pearce Kintzing, B.Sc., M.D., Professor of Physical Diagnosis and Diseases of the Heart, Maryland Medical College; Physician to the Franklin Square Hospital, Baltimore, Md., etc. Chicago: The Cleveland Press, 1906.

This is a book containing in a condensed form much information for the student, and a few suggestions which the practitioner will consider valuable. An outgrowth of lectures, as the author says in his preface, it is necessarily rather elementary, and many subjects receive but slight attention, yet it has a distinct value and fulfills the purpose for which it was written better than the majority of publications of the day. The general practitioner of experience will find little that is new, and a very evident lack of detail, but for the beginner it will prove a valuable guide. The chapter on medical anatomy, as far as it goes, is excellent, and the advice to cultivate methodical habits in all attempts at diagnosis will, if followed, be of inestimable value to the student. Some of the important, but rarer diseases, as, for instance, cancer of the stomach, are treated rather slightingly, but in the main the principal points in diagnosis are explained in a clear and concise manner which will make the study of the little book a pleasure. The illustrations are good and the schematic diagrams have the unusual merit of simplicity, which compels instant recognition of their meaning. It is very well edited and indexed.

A Handbook of Climatic Treatment, Including Balneology. By William R. Huggard, M.A., M.D., F.R.C.P., Lond.; H. B. M. Consul at Davos, Switzerland. London: Macmillan & Co., Ltd.; New York: The Macmillan Company, 1906.

This is a somewhat prolix addition to our bibliography on the subject, and like so many other works on climatology, it possesses some excellent features, though little that is really original, and in this respect is disappointing. The author has arranged his work in five parts. Part I. is taken up with a somewhat elementary discussion of meteorology and physics. It is not too technical and is very readable, and in this particular is adapted to the requirements of the medical practitioner. Part II. is devoted to the physiological action of the various meteorological factors. The text is wordy and tedious, and not infrequently the author wanders from the point. Part III. takes up more specifically the various types of climate, which the author has rather ingeniously classified on a new principle of division, namely, the demand made by climate for the production of heat in the organism. There are excellent chapters in this part on Egypt, South Africa, Algiers, Madeira, and the Canary Islands, the Mediterranean, and the British Isles. The chapter on the climatology of the United States is very disappointing. California is excellently handled, but many of the more generally recognized climatic stations in the United States and Canada are not even mentioned. Part IV. is devoted to the subject of balneology, including brief chapters on the "whey cure" and the "grape cure." The concluding Part V., on therapeutics of climate is of very practical interest and value to the physician, and comprises the most interesting chapters of the work.

The Pathology of the Eye. By J. Herbert Parsons, B.S., D.S., Lond., F.R.C.S., Eng.; Assistant Ophthalmic Surgeon, University College Hospital; Assistant Surgeon, Royal London (Moorfields) Ophthalmic Hospital; Ophthalmic Surgeon, Hospital for Sick Children, Great Ormond Street. Vol. II. Histology.—Part II. New York, G. P. Putnam's Sons; London: Hodder & Stoughton, 1905.

The second volume of Mr. Parson' work is one of 381 pages. It is well printed and is abundantly illustrated by 279 figures in the text. Many of the illustrations are from photographs. Almost all are excellent, and bear evidence of having been selected with proper discrimination. Chapter VII. (the first chapter in this volume) of the complete work treats of the histology of the crystalline lens in the normal and in pathological conditions. Chapters of a similar nature on the choroid, retina, optic nerve, orbit, and lacrymal apparatus follow in the order named. This volume, like the first, gives a most excellent presentation of the subject. A thorough knowledge by the author of the work of all investigators in this field is manifest, the evidence obtained is carefully weighed, and what appears to be a just interpretation of the conditions considered is given in language that is direct and can be easily understood. Theories are not discussed at length, but are mentioned either as agreeing with or opposed to the known facts. The impartial, judicial style of the presentation is commendable. The reader may be confident that the statements contained in the volume are based on facts that warrant the position taken. A bibliography of the important writings on each subject is given at the end of the text on that subject. The cytological changes that take place in pathological processes, the study of which is rendered more satisfactory and productive by modern technique, are given proper consideration. The promise of excellence which the first volume implied is fulfilled in the second volume, and will undoubtedly be realized in those to follow. The work cannot fail to be of great value to all who are engaged in the study and practice of ophthalmology. It should be in every medical library.

Skiascopy and Its Practical Application to the Study of Refraction. By Edward Jackson, A.M., M.D., Professor of Ophthalmology in the University of Colorado; Ophthalmologist to the Denver County Hospital; Consultant in Ophthalmology to St. Anthony's Hospital and the Mercy Hospital, Denver. Fourth Edition, Revised and Enlarged. With 28 Illustrations. Denver: The Herrick Book and Stationery Company, 1905.

Jackson's "Skiascopy," in its fourth edition, except in the addition of a chapter entitled "Exact Skiascopy," presents but little change over the volume that preceded it. The excellence of the work is conceded by all ophthalmologists. The subject is presented so simply that the ideas of the author can be grasped by the tyro in ophthalmology, and it is treated so thoroughly that the mastery of the contents of the volume cannot fail to give the student a perfect working knowledge of the art. This work deserves and cannot fail to be in great demand by those who take up the study of skiascopy for the correction of errors of refraction.

The Practice of Medicine, A Text-Book for Practitioners and Students. With Special Reference to Diagnosis and Treatment. By James Tyson, M.D., Professor of Medicine in the University of Pennsylvania, and Physician to the Hospital of the University, etc. Fourth Edition, Revised and Enlarged. With 240 Illustrations, Including Colored Plates. Philadelphia: P. Blakiston's Son & Co., 1906.

Dr. Tyson's admirable book well deserves the popularity that seems to have come to it, and we are pleased to note the appearance of this new edition. Its most conspicuous additions appear to be in the section on animal parasites, which now, by virtue of the new text and many fresh illustrations, is extremely full. The revision of the text as a whole has not in all cases been as thorough as might be desirable, however. For example, in a volume bearing the imprint of the year 1906 one does not expect to see such a statement as that occurring on page 202, to the effect that the latest putative syphilis organism "is that described by Lustgarten in 1884"; or that on page 396, enumerating five special treatises on appendicitis said to be of great value, the latest one of these being dated 1896. The attention of the proofreader is also urgently required in many places, such for example as in the legends on the plate purporting to depict the blood picture of leukemia, and on page 84, regarding the name of the yellow fever mosquito. These are only minor blemishes, however, and do not materially impair the value of what is a well-written and authoritative text-book.

Urinary Analysis and Diagnosis by Microscopical and Chemical Examination. By Louis Heitzmann, M.D., New York. With One Hundred and Thirty-One Illustrations, Mostly Original. New York: William Wood and Company, 1906.

The author of this work is of the opinion that the modern tendency is to lay undue stress on the chemical examination of the urine, at the expense, to some degree, of its microscopical study. In the present volume we accordingly find but sixty-odd pages devoted to the former means of investigation, while the remainder of the book is devoted to an extremely careful and painstaking description of the various structures encountered in urinary sediments. The illustrations are very numerous and show many objects not often depicted in works on the subject, so that the book will rarely be found wanting when it is consulted for the purpose of identifying some one of the unusual elements of the sediment that occasionally puzzle even an experienced microscopist. The volume is well adapted to stimulate thought, and its perusal is recommended to all advanced students. We fancy, however, that most of the modern clinical pathologists would feel inclined to break a lance with the author in regard to his chapter on the differentiation of the epithelial cells occurring in urine under various conditions and the identification of their source, concerning which he says that it "is not at all difficult." The entire subject is one too often neglected, and it is a pleasure to call the attention of the practitioner to a treatise that should prove of the greatest assistance to him in his everyday work.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held February 15, 1906.

DR. CHARLES L. DANA IN THE CHAIR.

A Statistical Study of Visceral Arteriosclerosis.—Dr. HARLOW BROOKS said that he had included in his study all such arterial changes as had, through disease of the arterial walls, caused a lack of orientation, that was a lack of proper functional relationship between the arteries and their dependent tissues. His series comprised 400 consecutive cases of arterial disease as they had appeared in his personal necroscopical service. He excluded from his analysis all those in which microscopical alterations alone were manifest. The inefficiency of present methods of diagnosis of arterial disease were especially manifested in cases where the lesions were largely or entirely limited to the internal viscera. Of the 400 cases only 154 were capable of diagnosis by present methods. Eight out of the 400 cases presented quite marked alterations in the peripheral vessels without disease of the aorta, or large trunks of the important internal viscera. Of the 400 cases, 368 showed serious disease of the visceral trunks and in 67 of these the visceral changes were associated with disease of the aorta. The occupation was determined in 311 cases. There were 118 laborers, including firemen and blacksmiths, 79 houseworkers, 45 tradesmen, including carpenters, jewelers, etc. Lead workers, painters, and tobacco workers appeared in a separate class. The commonly accepted ideas regarding arterial disease and occupation were substantiated by these figures. In regard to etiology: of the 368 cases of disease of the visceral arteries alcohol could be classed as a possible etiological factor in 149 instances. Nephritis appeared to be the chief cause in 51 cases, syphilis and old age in 38 cases each, and tuberculous disease in 31 cases. The relative involvement of the visceral trunks was about equal in both sexes. In all but 30 of the 368 cases more than a single visceral distribution was affected. Disease of the coronary arteries predominated in point of frequency, though it was often in relatively lesser degree than certain other distributions. Alcohol seemed to be the sole agent in the production of coronary disease in 107 cases. Syphilis was found connected in but 27 instances, and in 10 of these alcohol also appeared. Tuberculosis was found in 19 cases, senility in 15, and excessive use of tobacco in 9. In old age universal involvement of the visceral arteries was the rule. The arteries of the brain were affected in 132 cases and alcohol appeared as the most prominent agent. The renal vessels appeared third in rate of occurrence; they were found markedly involved in 81 cases. Fourth in number were the vessels of the pancreas, which were involved in 74 cases, alcohol still leading as the etiological factor. The hepatic vessels were found diseased in 43 cases, the splenic arteries in 35 cases, and lastly the vessels of the lungs in 20 cases. The celiac axis and its visceral branches were diseased to a greater degree than the other trunks of corresponding size in 19 cases. In regard to the cause of arterial sclerosis it seemed from his study that the changes were likely to appear first, and to be found in greatest degree, in those arterial distributions which were called upon to functionate most actively under the special stimulus at work. After describing the pathological anatomy of this condition, he said that the symptoms which resulted from these alterations were first depressed function, manifested, for instance in the heart, by deficient or irregular muscular contraction, in the pancreas by insufficient production of its digestive ferment, and in the brain by faulty action of the nerve cells or delayed transmission of nerve impulses. By no means all portions of an organ were equally affected. Pain was more or less a constant symptom of visceral arteriosclerosis, the darting or burning agony of angina pectoris being the most familiar example of the symptom. Pain of the same character but of little less severity appeared in other viscera similarly diseased. It had long been recognized that the arteriosclerotic kidney was responsible in a large percentage of cases for a considerable elevation of blood pressure. The rise in blood pressure was not constant but intermittent in the developing stages of the disease. He thought that he had been able to show a definite relationship between this sign and vascular disease of organs other than the kidney, but as yet sufficient post-mortem evidence had not been collected in conjunction with these clinical observations to render them of more than probable value. Most clinicians depended too much on the condition of the peripheral arteries, which he had shown to be diseased in only a relatively small number of cases in which visceral arterial disease, even of pronounced degree, existed. The presence of diminished visceral function with occasional and otherwise unaccountable elevations of blood pressure, should, particularly in connection with possible etiological factors, lead to a suspicion of some localized if not general area of arterial disease. He thought that careful observation of cases of obscure abdominal pain, paroxysmal in character and associated with rise in blood pressure, when sufficiently backed by united clinical and necroscopical evidence, would eventually make it possible to diagnose these generally unrecognizable types of arterial disease while yet in a stage when something could be done for their alleviation and the prevention of their extension.

Dr. EGBERT LE FEVRE said a very important factor brought out was the relation of peripheral arteriosclerosis to that of the viscera. He commended Dr. Brooks' classification of etiological factors, believing they were very important in determining the changes either in the large vessels themselves or in the small vessels subsequent to involvement of the larger ones.

Dr. WILLIAM H. THOMSON thought it was very important and desirable that they should recognize what was the particular factor that led to degeneration and atheroma, and he summed it up in the one word, *strain*. Atheromatous change in any blood-vessel was indicative of some local strain, and this was strikingly illustrated in cases of extreme atheroma not due to systemic causes at all, but only to local ones. He referred to such changes as occurred in varicose veins of the legs, due to some congenital defect of the valves of the veins, similar to the congenital deficiencies which led to inguinal hernia. It was entirely a local condition and not dependent upon blood infection. He said there was another way in which this strain of a column of blood in the vessels led directly to a thickening of its walls, then to marked atheromatous changes, and finally to calcification as well, and that was through the influence of an excess of adrenalin in the blood. Instead of atheromatous changes with thickening of the lumen of the vessel, etc., causing a high tension pulse, he said we should place the effect before the cause; in the majority of instances atheroma resulted from the high tension and not the high tension from the atheroma.

Dr. A. JACOBI said that he now thought it possible to make a positive diagnosis of atheromatous degeneration of the visceral arteries. When one found a heart in a doubtful case that was of fairly normal size, with a great deal of impulse in the small arteries, the probabilities were that there was so much resistance in the peripheral arteries that the heart had to undergo unusual labor; that was met with a strong systolic impulse. In chronic myocarditis the heart might be of normal size or undersized; myocardial changes, when present, were usually complicated with arteriosclerosis of the small arteries. A little exercise, like going upstairs, would cause the development of a murmur, sometimes a strong murmur. Then we were dealing with an incompetent heart muscle. Proper regard for the heart muscle would aid greatly in the proper diagnosis of the condition.

Dr. LEONARD WEBER said that many now recognized that arteriosclerosis was more often a local than a general dis-

ease, and this fact was very important, so far as the therapy was concerned.

The Diagnostic Significance of High Arterial Pressure.—Dr Theodore C. Janeway read this paper. He asked indulgence for a study wholly clinical and subject to the limitations which hedged about all observations upon the living patient. Patients exhibiting persistent high blood pressure as the salient feature of their disordered physiology seemed to be more common in private practice than in hospitals. With a twelve-cm. armlet he thought there could be little question that, under conditions of physical and mental rest, the upper limit of normal systolic pressure—the pressure necessary to obliterate the pulse wave in the brachial artery—might be taken as 145 mm., the lower limit 100 mm. It was wise, in dealing with new patients, to consider no pressure below 166 mm. pathological. This statement was made from recorded figures in over ninety persons who were normal or with indifferent complaints, besides a large number of unrecorded observations. With advancing years the blood pressure tended toward the higher normal figures. While it might be hard to draw the line between gradually developing pathological hypertension and the normal increase of age, one was inclined to consider 160 mm. definitely pathological, when excitement and other hypertensive influences were excluded. The diastolic pressure varied less than the systolic, being, as a rule, between 75 and 110 mm. Almost all physiological and pathological elevations of blood pressure affected the systolic more than the diastolic pressure. The difference between these two measures gave the pressure variation of the pulse which was named by Erlanger the "pulse wave." An apparent hypertension might be confused with a real elevation of mean blood pressure. By apparent hypertension he meant an abnormally high systolic with normal or subnormal diastolic pressure, and, therefore, an only slightly increased mean pressure. This occurred in all cases of marked aortic insufficiency. It afforded an excellent measure of the mechanical effect of the lesion. With an abnormally low pulse the same state of affairs existed. It should be emphasized that where aortic insufficiency or marked bradycardia existed no systolic pressure under 200 mm. should be considered evidence of real hypertension. Marked and lasting elevation of the general level of blood pressure in any individual was an important disturbance of his normal circulatory physiology. Its significance was twofold: first, as evidence of preexisting disease affecting the cardiovascular mechanism; second, as in itself introducing an abnormal factor which must produce secondary changes in the heart and blood-vessels. While real hypertension was more common in chronic nephritis than in any other condition, cardiac hypertrophy was occasionally seen at autopsy without either chronic nephritis or a valvular lesion to account for it clinically, it was difficult for him to admit a chronic nephritis as proved when repeated examinations showed urine quantitatively and qualitatively normal. In studying this question during the past two years the number of patients in whom pressures between 100 and 200 mm. were found was so large that time did not suffice for a careful scrutiny of all the histories, but it was evident that many persons showed these lesser degrees of hypertension in whom kidney disease could be fairly excluded; though many others were clearly cases of chronic nephritis. In 130 cases in which the systolic pressure reached 200 mm. he had tabulated the findings. He had given the diagnosis of nephritis the benefit of the doubt where there was any possible excuse for it. Of these 130 cases, 81 per cent. had chronic nephritis, 6 per cent. were doubtful, and there was no evidence of nephritis in 13 per cent. The figures obtained demonstrated conclusively the value of hypertension as evidence of chronic nephritis on the positive side, but they also showed that there was a group of patients, 10 to 15 per cent. of the whole number, in whom extremely high blood-pressure with cardiac hypertrophy, arterial changes, and quite the same clinical picture existed independently of Bright's disease. If the high blood-pressure was due to obliterating endarteritis of the small arteries, the splanchnics especially, then we must assume some individual immunity of the renal vessels in these cases, or a relative immunity. If our theory be that of vasoconstrictor spasm of toxic origin, then there must have been several poisons, differing in their effects upon the kidneys, or a greater individual resistance of the latter. What seemed to him important was to hold clearly in mind the physiological picture of chronic arterial hypertension as a type of cardiovascular disease, usually secondary to chronic Bright's but at times associated with it. From this hypertension might arise many dangers, as cerebral hemorrhage, or gradually developing ventricular asystole. His personal experience and that of most others who had compared their tactile impressions with routine blood pressure determinations was not complimentary to the *tactus eruditus*. Even pressures over 200 mm. might fail to be appreciated where the pulse was small or the artery deeply placed. Hypertrophy of the left ventricle and accentuation of the aortic second sound were also often difficult of detection. He had found in his series of 130 cases that 10 per cent. showed absolutely no evidence of cardiovascular disease except the blood-pressure, reading, in a number of cases because obesity made examination of the heart almost hopeless. In four cases there was no enlargement of the heart, but some lifting impulse or accentuation of the aortic second sound; and in 16 other cases there was evidence of very slight hypertrophy, which might have easily escaped any but an expert in physical diagnosis. In all, one-quarter of the cases would have been recognized with difficulty or not at all without the sphygmomanometer, except on critical examination by a skilled observer. To those who felt the poverty of our diagnostic resources the accurate measurement of blood-pressure must prove a valuable addition to our methods of physical examination, but to those who had not acquired the habit of painstaking observation and careful weighing of evidence the little knowledge which the instrument could yield might, like other bits of laboratory diagnosis, prove a dangerous thing.

Dr. Egbert Le Fevre said that high blood-pressure was recognized with instruments of precision and it had been shown that the *tactus eruditus* was not always correct. In the hospital they had for a long time tested themselves on this point, endeavoring to estimate the blood-pressure with the sense of touch and then determining the correctness of their diagnosis by the use of Janeway's instrument. Very seldom was the instrument confirmatory of what was determined by the touch. The relation of high arterial tension to chronic nephritis was interesting and one was not always correct in saying that in cases with high arterial tension, 200 or over, when the urine was of low specific gravity, with occasional casts and some albumin, the high tension was due to the kidney condition alone. Just what the conditions were which caused a persistent high tension was still a mystery without autopsy. The secretion of the suprarenal glands might cause it.

Medical Education in Japan.—Baron Kanehiro Takaki, M.D., F.R.C.S., F.R.C.P., of Tokio, Surgeon-General (Reserve) of the Japanese Navy, addressed the members of the Academy on medical education in Japan. He said he had been educating a number of medical students for more than twenty-five years, both in connection with the naval medical school and also in private medical schools. When he was a junior officer in the navy it was insisted upon that they should have a special school for the education of the naval medical officers. This was provided for. This school was started in 1872, and since then they had educated sixteen men. When those sixteen men were graduated he was away from the country. The officers of the medical bureau thought they would be able to go on without special education, and when he returned he found that those who had been educated outside the medical

school could not understand any foreign language; at the same time, their practical knowledge was quite insufficient. These medical officers must go on board ship, must visit the various ports of foreign countries, in order to determine the presence or absence of dangerous diseases. They were also called upon to go ashore to find out if epidemics were present. None of these things could they do, because they did not understand foreign languages. Therefore Baron Takaki urged the reestablishment of the medical school, and as a result they had to educate eighty medical officers, making ninety-six altogether, and these were the chief acting members of the medical department of the Japanese Navy. Among the first sixteen graduated was Surgeon-General S. Suzuki; also the president of the present medical bureau and the chief surgeon of the naval stations. It was in order to advance the sanitation of the navy that these ninety-six men had been educated. He regretted to state that since he had left the navy this medical school had been abolished again. He believed the army and navy should have a special medical school for the education of their medical officers. The officers of the army and navy received their education in certain schools from the beginning, *i.e.* the youth or boy underwent discipline that gave him an especial character, different from those who were brought up in the ordinary schools. These men were inclined to look down upon the medical officers. In the near future, he believed, they would have special schools for the education of the medical officers of both the army and navy. The medical officers must receive more recognition than they had before, and they deserved to have it. In the time of war between Japan and China the director of the medical bureau of both the army and navy had rank equal to the line officers or major-general. The Baron said he had been trying to educate the common medical men, and he started twenty-five years ago in this on a small scale. He had always felt that they should use the English language, and he intended keeping up his English, and, at the same time, educate his medical men to speak it. Up to three years ago any medical student could enter the school who had a certain knowledge of preliminary subjects; but since then there was a new regulation adopted, so that now no medical student could enter unless he first passed an examination in English. To-day there were 407 students, of whom 350 had studied English. The Baron here told what branches they studied at different periods of their college life. Every boy in Japan must go to school After ten years they entered the higher primary school; then they went to the middle school; after graduating from this they entered a higher school, which was said to have no equivalent in Europe or America. Here they received their higher education. At the end of three years they went to the university. They had in Japan three medical universities, having each a four-year course. When the student finished the middle school he could enter here and complete his course in four years' time. After completing their medical studies, many of the Japanese went to Germany; Japanese medical education resembled very closely that of Germany. The Baron's own son studied English, then French, and was at present traveling in Australia, getting along very well without a guide. He also studied German and intended to study two or three other languages in Vienna. As to the recognition of the medical service in his country, up to twenty-five years ago not much was given them, and they saw that, in order to gain recognition, something must be done; they then thought it would be best to educate the people, telling them how to take care of themselves. Therefore, in Tokio in 1883, there was started the Japan Hygienic Society, which met twice a month. This was the beginning. Then every district and province formed its own branch of the society, meeting once or twice a month. This had been undertaken entirely by the medical men. At last the public came to understand that the medical men must be respected Now they recognized how important the medical service was to the country. The art of physic and surgery had been raised in both the army and navy. If the public would recognize the importance of the medical science directed towards the preservation of life and not merely directed to the treatment of the sick and wounded, he thought much would be accomplished. In the future medical science should be used largely for the prevention of disease, not merely the treatment of existing disease.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held January 25, 1906.

DR. CHAS. F. ADAMS IN THE CHAIR.

Election of Officers.—*Chairman*, Dr. Arnold Sturmdorf; *Secretary*, Dr. Howard C. Taylor.

Specimen of Tubal Pregnancy.—Dr. LEONARD S. RAU presented this specimen which was removed from a woman, twenty-three years old, married four years and who had had, three years previous, a premature delivery. Since this time she had been regular in her menstruation. Four days before she was admitted to the hospital she was suddenly taken with severe pain in the left side, which lasted for hours before subsiding. The pain returned later and a slight bleeding appeared from the vagina. A diagnosis was made of ectopic gestation and she was sent to the hospital. When Dr. Rau first saw her he was able to feel a distinct mass on the left side. The uterus was moderately enlarged. The abdomen was opened and the specimen presented removed. The tube was filled with large organized blood clots and was not ruptured, but so nearly ruptured that in taking it out it was torn at one point. There was also a small parovarian cyst as well as cyst of the ovary itself. There was to be seen a well-formed corpus luteum. An uneventful recovery followed. The pathologist reported that the ovary showed typical luteal cells; diagnosis, corpus luteum (verum). The embryo showed embryonic cells disorganized and of the epithelial type. There were well-organized blood clots and placental cells. A diagnosis was made of embyro in the early stages, under two months.

Dr. EGBERT H. GRANDIN took exception to the title of the case as found upon the announcement card, "unruptured tubal abortion." He said there was a marked distinction between a ruptured tube which was a true ectopic gestation and a tubal abortion. He congratulated Dr. Rau upon making such a diagnosis and said that many years ago a number of men had questioned if such a diagnosis could be made. Four years ago he made a diagnosis of unruptured (not tubal) abortion in his office in a single woman, and he operated within twenty-four hours and confirmed his diagnosis. Last August the same woman came to him and he made the diagnosis of ectopic gestation unruptured (not a tubal abortion). He operated and established his diagnosis. There was a vast difference between tubal abortion, unruptured ectopic, and ruptured ectopic gestation. He further said that those men who were trained in the symptomatology of such cases should remember that the symptoms were not as a rule as laid down in the text-books, and also that women should not be considered to be, like Cæsar's wife, above suspicion, but always under suspicion.

Dr. S. MARX said that it was uniformly admitted that tubal abortion meant only one thing and one thing only, *i.e.* the extrusion of the fetus through the fimbriated extremity of the tube into the abdominal cavity. In tubal rupture there was a break in the continuity of the tube.

Dr. ARNOLD STURMDORF said that if the fetus was dead and surrounded by blood clots some authorities considered this to be a tubal abortion.

Dr. SIDNEY D. JACOBSON said that the nomenclature of this subject under discussion needed revising. As a matter of fact there was no such thing as a ruptured tubal preg-

nancy, because the tube did not rupture. A histological examination of the tube showed that the cells surrounding the ovum had eaten away the mucosa muscularis, eaten through the substance of the wall of the tube. He believed the term "ruptured tubal pregnancy" must sooner or later become obselete.

Dr. Philander A. Harris of Paterson said, regarding absorption of the walls of the tube, that specimens of such a tube widely broken open and the major part of the fetal products lying in the abdominal cavity had been presented. He asked Dr. Rau how much blood was found in the abdominal cavity.

Dr. Rau responded that none was found.

Dr. Harris said he had operated upon as many as eleven unruptured cases, eight of which had been presented to the New Jersey Medical Society last summer, but only one had been confirmed by microscopical examination. The diagnosis rested upon the amenorrhea, the slight pains and blood in the abdomen, it escaping from the *ostium abdominale*.. He believed these were the only cases that would be called tubal pregnancies. None had severe pains, or rapid pulse, but little pains and atypical menstruation.

Cystic Tumor of Kidney.—Dr. Louis J. Ladinski presented this specimen which he had removed from a woman, fifty years old, who had been married twenty-eight years and had had seven children. There were no miscarriages and menopause occurred two years ago. Her illness began some four months ago, when she began to have pain in the left hypochondriac region, and then a mass in that region was noticed which gradually increased in size, accompanied by frequent and severe attacks of pain. There were no vomiting, chills, or fever. On admission to Beth Israel Hospital on December 29, 1905, a large nodular tumor, of apparently semisolid consistency, about ten inches in diameter, could be felt, extending from the free borders of the ribs on the left side to a point several inches below the umbilicus, and from a line several inches to the right of the median line to the lumbar region. It was freely movable in all directions and was not adherent to the abdominal parieties. The diagnosis of cystic tumor of the kidney was made. Operation was performed on January 4, 1906. On exposing the tumor it was found to be a cystic mass of the left kidney. The opposite kidney was apparently normal. The peritoneal covering of the kidney was extremely vascular, as was the capsule. The left kidney was removed. The patient made an uninterrupted and uneventful recovery.

Right Ovarian Cyst, Pyosalpinx, Intestinal Obstruction.—Dr. Ladinski reported this case. The patient was a woman, thirty years old, who began to menstruate at the age of thirteen, her last period occurring two months ago. She had been married nine years, had had two children, the last seven years ago, and no abortions, had leucorrhea for the past year, but no painful micturition. Her present history dated back two weeks preceding admission to the hospital. In view of the conflicting symptoms and physical and clinical signs, a positive diagnosis was impossible. There was a history of amenorrhea for two months; sudden collapse, with vomiting and intestinal obstruction; and pain and tenderness distributed over the entire abdomen; there were signs and symptoms of acute and general peritonitis and intestinal obstruction, with rapid pulse but normal temperature. On the other hand there was found an ovarian cyst on the right side, and an enlarged and thickened tube with moderate tenderness over the appendix and gall-bladder. The possible diagnoses were, twisted pedicle of ovarian cyst, rupture of pus tubes, rupture of tubal pregnancy, of appendix, or of gall-bladder, and intestinal obstruction due to volvulus or intussusception. He was unable to make a differential diagnosis, as he had never met with a similar case before, and he decided that this was one of the cases when one must operate first and make a diagnosis afterward. Upon operation an injected peritoneum was found; the peritoneum was incised and a left ovarian cyst was found as well as a coil of small intestine prolapsed in the pelvis and attached by slight adhesions to the fimbriated extremity of the tube. This portion of the intestine was adherent to itself and twisted in several places, forming several loops and causing a complete obstruction of the bowel at this point. The intestines were very much distended above this point and absolutely collapsed below it. The adhesions were broken up and the loops freed. The pus tube, cyst, and appendix were removed and the abdomen closed without drainage. The patient made a good recovery.

Dr. Egbert H. Grandin said that he preferred the abdominal and transperitoneal route for the removal of large tumors of the kidney. The man who knew how to keep himself clean during operations could go deliberately from above and remove such large tumors more quickly than if he chose the lumbar route. To be sure, if one operated from behind, he might not open the peritoneal cavity; if from in front he must.

Dr. C. Clarence Sichel said that when the kidney had become converted into large abscess cavities in these advanced cases, and was bound down by adhesions, he believed it would be safer to go in from the back and not open the peritoneal cavity.

Dr. John O. Polak spoke of the ease of handling these pus tumors through König's incision, through which he had removed very large kidneys, and without entering the peritoneum.

Dr. A. E. Gallant said that it was wonderful what an amount of exudate followed the removal of kidneys. In attacking large kidneys one did not always know whether he was dealing with a pus kidney or not, and, therefore, greater care should be exercised not to open the peritoneum; for this reason the lumbar route was to be preferred in order not to invade the peritoneal cavity.

Dr. Ladinski closed the discussion.

A Comparative Study of the Various Methods of Terminating Pregnancy and Labor.—Dr. S. Marx read this paper. He said that a résumé of the work done in the domain of obstetrics showed conclusively that a finality had not been reached in regard to the many and varied operations which were devised for the selfsame conditions by equally good men. The tendency to radicalism grew in proportion to the lack of skill and experience; this was evident from the reports of major work when patience and conservatism would have saved such an operation. The gynecologist and the obstetrician should work hand in hand, as in this way dystocias due to improper technical operations which were presented by the gynecologist to the obstetrician at the bedside of the woman in labor could often be avoided. He doubted whether, if these specialties were combined, the gynecologist would insist on doing his many and varied vagino-abdominal fixations. We were forced to admit that the ideal operation which would stand the test of childbirth for the various malpositions of the uterus had not yet been devised. He thought it was more scientific to do a complete hysterectomy for a uterus studded with fibroids. During the first trimester the operation of emptying the uterus differed little from a simple curetting, except that we were to be careful to remove all products of conception. He recommended the use of the sharp curette, as the cervix usually had to be dilated instrumentally. During the second trimester the preliminary tamponade of the cervix and lower uterine segment with sterile gauze should always anticipate operative interference except in cases of great emergency. This was the method of choice, whether at a later period of pregnancy or at term, in cases that did not warrant more radical measures. If at the end of twenty-four hours there was no material dilatation and urgency be present to terminate the labor, his method of choice for many years had been

the manual dilatation of the os by the power of the conated hand alone. This had never failed in an experience of several hundred cases. No woman in labor should be subjected to any operative interference unless such measures were distinctly called for by indications which were vital. The Bossi dilator was to be condemned, as in his experience the human hand had been used with far better success. As to direct operative interference in the second stage we had forceps, version, craniotomy, and the major operations. Of the greatest importance and of the greatest assistance in furthering favorable results in operations of the minor type, we had the Walcher position, which he most heartily recommended as an adjuvant to other measures. Generally a head that was engaged or could be made to engage was one that stood for forceps delivery. A version in the presence of a tetanized uterus or in the presence of a contraction ring was an invitation to a grave lesion of the uterus; hence, under these latter conditions, the application of the true high forceps above the brim was the clear indication. Operations of the major type as strictly elective measures except in extreme pelvic contractions were impracticable and almost impossible. The great stumbling block was and always would be the adaptability and size of the fetal head and its relation to the pelvis through which it must pass. There never was and never would be a question of pelvimetry or of cephalometry alone, but a mathematical proposition as to the correlation of head and pelvis. The abdominal cesarean was steadily growing in its field of utility, while the operation of symphyseotomy had fallen by the wayside. Under a true conjugate of 6 cm. the abdominal cesarean operation became an operation of necessity. He thought it a safe teaching that when forceps failed and version could not be done or was contraindicated for one reason or another, cesarean section with its limitations would stand the test of time and experience. The most difficult problem presented to the accoucheur was when not to induce labor in cases of contracted pelvis. Obstruction from soft structures, when immovably fixed, or deformity of the absolute variety, called for the abdominal method. The safest time to interfere in the lesser contractions was when by suprapubic pressure it was found that the head was just capable of being made to engage. In his experience he thought that at this time labor was best induced by the preliminary tamponade of the cervix and lower uterine zone with gauze, plus the introduction of a large-sized bougie. We were never justified in doing a cesarean section for a placenta previa pure and simple. The operation might occasionally be warranted in eclampsia. In terminating pregnancy, where there was no time for preliminary work, we could only empty the uterus by the so-called bloody methods. With the cervix drawn into the lower uterine zone we had practically three methods at our disposal, the various bags, the Duehrrsen operation, and the human hand. He preferred the hand. In the presence of a complete cervix, hard and unyielding, in a woman whose life was threatened, the only thing was a quick and conservative operation. Here we had the Bossi dilator, which was to be condemned, and vaginal hysterectomy or vaginal cesarean section, which appealed to him as a method of considerable value. His objection to this operation was the possible weakening of the uterine wall and a possibility of rupture in the event of future pregnancy. This objection had to be waived in the presence of desperate conditions. The pericervical vaginal tissue was incised and the vagina split anteriorly toward the urethra. The bladder was pushed out of the way without opening the anterior peritoneal sac. The lower uterine zone was exposed in front and behind. An incision was made into the uterine body anteriorly up to the reflection of the bladder, the membranes ruptured and the fetus extracted. If more room was desired the posterior uterine wall might be incised without opening the peritoneum. The placenta was removed manually and the wound closed as after cesarean section. A small drain was placed in the vesical space and if there was a tendency to uterine relaxation the uterovaginal tract was tamponed with gauze.

Dr. Egbert H. Grandin said that it was nearly eighteen years ago that he began to talk in the Section on Obstetrics and before the New York Obstetrical Society, along these same lines, and now he wished again to speak absolutely from the same platform that he spoke from eighteen years ago. He had seen no reason for changing his opinions in his teachings and in his practice, and he referred to certain journals, particularly the *American Journal of Obstetrics,* wherein he voiced the sentiments that he now had. He agreed with the reader of the paper that there should be a close connection between obstetrics and gynecology, and that if there were better obstetrics there would be less gynecology. He differed from the reader of the paper, however, in underestimating the value of the pelvimeter, and he regretted that the average medical man did not really know what the pelvimeter was. The pelvimeter, however, solved but one factor in the problem; and it could never solve the other, *i.e.* the size of the passenger. Dr. Grandin considered the subject of methods of induction of labor under two heads, (1) the elective, and (2) the emergency. Under the elective head he said they were dealing with cases as they dealt with interval appendicitis operations; they had plenty of time. But under the emergency head the saving of life was often a matter of time. Therefore the methods of dealing with the cases must necessarily differ. In one instance surgical judgment could be used, whereas, in the other, one must fit the shoe to the foot. He always believed in leaving everything to nature when not called upon to interfere with nature. Therefore, under elective indications (as disproportion between the passages and the passenger) what he aimed at was to cause the cervix to merge into the lower uterine segment; that could be better accomplished by leaving the case to nature and letting the woman deliver herself. There was but one rational, but one surgical, but one aseptic manner of starting labor, and that was by the use of the gauze tampon under strict antisepsis, packing the cervix up to and above the internal os with gauze, packing the vagina as well, and then placing the patient in bed; if at the end of thirty-six hours the uterine contractions had not become established one had attained a softening of the lower uterine segment, and, if one had the courage of his convictions, the only instrument, and the best one to employ now, was the finger for complete dilatation of the cervix. Then the uterus should be emptied. In all his experience after using the gauze tampon, when gestation had advanced to the seventh month, he had never failed to empty the uterus within one hour, and in 80 per cent. of the cases, when the child was previously alive at the beginning of the operation, to save that child. In the second class of cases, the emergency ones, one must meet them as they arose, and it was only a matter of time; the uterus must be emptied in a very short time and without inflicting traumatism on the woman, and at the same time paying some regard to the lesser life, that of the fetus. In dealing, for instance, with a case of toxemia of pregnancy, speed was necessary; he had seen a patient die within half an hour after the first eclamptic attack. The indication here was to empty the uterus and let the woman bleed; bleeding from the uterus itself was here indicated. With regard to the Bossi instrument, he could not conceive of its doing anything but harm.

Dr. George H. Balleray believed the pelvimeter to be a useful instrument, and said that any preconceived notions regarding it might do harm. He had known cases in which a diagnosis of contracted pelvis was made by means of the pelvimeter and a cesarean section performed, when the same woman later had a natural delivery and the child was as large as the one delivered by cesarean section. The cases in which the more active measures were indicated

were acute cases of toxemia, or hemorrhage, etc., and here one must act promptly. He believed that there was a field here for the use of the tampon.

Dr. William S. Stone said that as the result of eleven years' observation at one clinic he was certain that the number of cases brought in as the result of injuries and infections from childbirth had notably diminished, and the number of post-operative cases, too, had considerably diminished. Dr. Stone said he had used bougies, had used the gauze, etc., but the rubber bags had given him more uniform results, and it appeared to him to be a more satisfactory method, not only in his hands, but in the hands of his colleagues in the hospital.

Dr. P. A. Harris referred to the paper that he read before the Pan-American Congress at Washington, wherein he described a method of dilating the cervix, not by driving the uterus upon the conated hand, but dilating it with the forearm in a condition of repose. He stood with the gentlemen who favored digital dilatation. He had had made an instrument which he was going to present at some future time before the Academy of Medicine, which registered the exact number of pounds pressure that was being applied. There were dangers encountered when the hand was used, because it could not make the continuous pressure that an instrument with a spring could.

Dr. C. Clarence Sichel said that three weeks ago in the hospital he had a case of placenta previa, the placenta being marginal, and a tampon was used for twelve hours. The house surgeon tried the stop the hemorrhage by tamponing. Dr. Sichel, when he arrived, rapidly dilated the cervix, did a podalic version, and extracted the child. The patient died, and he believed the patient's life was sacrificed by attempts directed to stop the hemorrhage by tampons.

Dr. John O. Polak said that, in the case reported by Dr. Sichel, the tamponing was not well done, and that in such cases tamponing was the only thing the general practitioner could do. Personally he advocated the use of the bag in placenta previa; it not only acted as a tampon, but was an excellent dilator and did not subject the cervix to the traumatism that the hand did. In emergencies, though, there was nothing like the hand.

Dr. A. E. Gallant said that if one wanted to stop hemorrhage from the cervix something was wanted which would fill it up; for this purpose he advocated taking gauze, wetting it, then wringing it as dry as possible, and inserting; this gauze would swell and stop the bleeding from the cervix, but not from an accidental hemorrhage from the uterine cavity.

Dr. S. Marx said that he had been disappointed with the pelvimeter as an instrument of precision. He did not believe it was a question of pelvimetry at all; it was only the question of the adaptability of the child's head to the uterus. The pelvimeter was only one for comparison.

The Pelvis in Obstetrics, and a New Instrument for Measuring Its Diameter in the Living Woman.—Dr. Sidney D. Jacobson read this paper (see page 489).

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Regular Meeting Held February 20, 1906.

Dr. William F. Campbell in the Chair.

The Treatment of Meningococcus Meningitis in the First Medical Division of Bellevue Hospital During the Early Summer of 1905.—Dr. Edward L. Dow read this paper. (See page 495.)

Dr. William Browning said that there was little to add to Dr. Dow's eminently sane paper. There were, however, two points which required further emphasis. In the first place it is now well recognized that the diplococcus meningitis is less dangerous than any of the other forms, as the tuberculous and pneumococcus varieties. In the second place Dr. Dow failed to call attention to the possibility of spreading the disorder. In spite of the differences of opinion as to the degree of communicability of meningitis, it is necessary to take measures for preventing contagion. Dr. Browning recited a recent case in which a nurse attending a case of meningitis contracted the disease. It has always been his practice to have the patient placed in the lightest room possible, with the eyes shaded. The mechanical conditions, congestion, and stasis of the choroidal fluid are much more grave than are commonly realized, and cause many of the symptoms. He recalled the case of a robust young man who, in 1900, was seized with a severe attack of meningitis and who recovered. During the succeeding five years he was actively engaged in the arduous duties of his occupation and enjoyed the best of health. In 1905 he had another attack. But this time there were no petechiæ, no rise of temperature, and no photophobia. There were, however, nausea, vomiting, a pulse of 60, incontinence of urine, and an inability to stand without assistance. There were a slight retraction of the head and a slight swelling of the optic disk on one side. It was clear that the symptoms were due to the congestion and the collection of cerebrospinal fluid and not to an immediate infection and toxemia. It seemed as if the inflammatory changes following the first attack were responsible for the mechanical conditions of the second.

Dr. J. M. Van Cott said that the author of the paper struck the keynote when he characterized meningitis as a reactionary disease. In the cases in which death occurs early, the conclusion is inevitable that the system is swamped by the toxins of the meningococcus. This is supported by the autopsy findings. The mucous membrane of the nose and its accessory sinuses reveal extraordinary changes. In many cases the mucous membrane is literally ripped from the bone by the collection of inflammatory fluid. In this connection the speaker alluded to the fact that the life of the meningococcus is short and its pathogenicity is slight. It seemed to him as if one of the chief factors in the etiology of meningitis is the lack of resistance in the patient. Meningitis is a contact disease. The Berlin commissioner reported that the principal portal of entry for the pathogenical organism is the cribriform plate of the sphenoid. The speaker agreed with Dr. Dow that keeping high the patient's head serves to drain the bony cells about the nose and prevent the infection from traveling upward. In view of the fifty-three per cent. of recoveries that occur, as indicated by the report of Councilman, one may place a great deal of reliance upon the *vis medicatrix naturæ* in combating this disease.

Infective Arthritis Complicating Otitis Media.—W. P. Eagleton contributes the histories of a series of cases of this nature, noting that we may have a joint inflammation caused by toxins of germs which do not actually enter the joint, or they may so enter, or the joint may become involved as the result of a neighboring osteomyelitis. He believes that the ear is the most frequent source of general pneumococci infection in children. In the two latter of the varieties enumerated above, the mortality is high, and the mobility of the joint is sure to be seriously impaired, if not wholly lost. The treatment depends altogether upon the class to which the arthritis belongs. An inflammation of a joint appearing during the course of an otitis media, or a sinus thrombosis, warrants aspiration at once. If examination of the fluid by cover-slips and cultures demonstrates it to be sterile, rest, and the placing of the joint in proper position, may be all that is necessary. If overdistention by fluid is threatened, repeated aspirations may be required. Placing the joint in proper position, in such cases, is highly important, as spontaneous dislocations, from distention, have been reported. When a joint contains pus, it should be promptly opened, although cases of recovery, following aspiration, rarely occur. Nevertheless, in every case in which the aspirated fluid contains pathogenic microorganisms, even if the synovial fluid is not purulent, the best results are obtained by opening the joint and inserting a guttapercha drain.—*Archives of Otology.*

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

How to Become a Trained Nurse. By Jane Hodson. Second Edition. 8vo, 265 pages, illustrated, muslin. William Abbatt, New York.

Indigestion, Its Causes and Treatment. By Fernandez Clarke, L.S.A., Lond., L.R.C.P., Lond., M.R.C.S., Eng. 12mo, 85 pages, muslin. William Wood & Company, New York. Price, $1.00 net.

Qualitative Chemical Analysis of Inorganic and Organic Substances. By Henry W. Schimpf, Ph.G., M.D. First Edition. 8vo, 156 pages, muslin. John Wiley & Sons, New York. $1.25 net.

The Companionship of Books and Other Papers. By Frederic Rowland Marvin. 12mo, 320 pages, muslin. G. P. Putnam's Sons, New York.

International Clinics. Edited by A. O. J. Kelly, A.M., M.D., Vol. IV Fifteenth series, 1906. 8vo, 312 pages, illustrated, muslin. J. B. Lippincott Company, Philadelphia.

The Diseases of Infancy and Childhood. By L. Emmett Holt, M.D., Sc.D., LL.D. Third Edition. 8vo, 1174 pages, illustrated, muslin. D. Appleton & Company, New York. Price, $6.00 net.

Maladies de la Bouche, du Pharynx, et de l'Oesophage. By Drs. G. Roque and L. Galliard. 8vo, 276 pages, illustrated, paper. Librairie J. B. Bailliere et Fils, Paris. Price, 5 francs.

Oliver Wendell Holmes and the Contagiousness of Puerperal Fever. By Charles J. Cullingworth, M.D., F.R.C.P. 8vo, 41 pages, with portrait, muslin. Henry J. Glaisher, London, Eng.

A Manual of Pharmacy for Medical Students. By M. F. DeLorme, M.D., Ph.G. 16mo, 260 pages, muslin. John C. Lindsay Co., New York.

An Atlas of Human Anatomy for Students and Physicians. By Carl Toldt, M.D. Translated by Dr. M. Eden Paul, M.R.C.S., L.R.C.P. Sixth Section, 4to, 985 pages, illustrated, muslin. The Rebman Co., New York.

The Influence of the Menstrual Function on Certain Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D. 8vo, 108 pages, muslin. The Rebman Co., New York. Price $1.00.

The Relation of Diseases of the Skin to Internal Disorders. By L. Duncan Bulkley, A.M., M.D. 8vo, 175 pages, muslin. The Rebman Co., New York. Price, $1.50.

The Practice of Medicine. By James Tyson, M.D. Fourth Edition. 8vo, 1,305 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia.

Christianity and Sex Problems. By Hugh Northcote, M.A. 8vo, 257 pages, muslin. F. A. Davis Co., Philadelphia. Price, $2.00 net.

A Laboratory Manual of Physiological Chemistry. By Elbert W. Rockwood, M.D., Ph.D. Second Edition. 12mo, 229 pages, illustrated, muslin. F. A. Davis Co., Philadelphia. Price, $1.00 net.

The Physical Examination of Infants and Young Children. By Theron Wendell Kilmer, M.D. 12mo, 86 pages, illustrated, muslin. F. A. Davis Co., Philadelphia. Price, 75 cents, net.

Nasal Sinus Surgery. By Dr. Beaman Douglass. 8vo, 264 pages, illustrated, muslin. F. A. Davis Co., Philadelphia. Price, $2.50, net.

Transactions of the Lackawanna County (Pa.) Medical Society (1905). Vol. I. 8vo, 171 pages, illustrated, muslin. J. M. Wainwright, Editor, Scranton, Pa.

My System: 15 Minutes' Work a Day for Health's Sake. By J. P. Müller. Authorized Translation by G. M. Fox-Davis. Published by Tillge's Boghandel, Copenhagen. Agents for America, G. F. Stechert & Co., New York: Paper covers; price, 75 cents net.

A Text-Book of Human Physiology. By Albert P. Brubaker, A.M., M.D. Second Edition. 8vo, 715 pages illustrated, muslin. P. Blakiston's Son & Co., Philadelphia.

The Ophthalmoscope and How to Use It. By James Thorington. 8vo, 298 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia.

Unconscious Therapeutics; or, the Personality of the Physician. By Alfred T. Schofield, M.D., M.R.C.S., etc. Second Edition. 8vo, 317 pages, muslin. P. Blakiston's Son & Co., Philadelphia.

Sul Trattamento Chirurgico delle Nefriti Mediche. Dott. Giuseppe Quatro-ciocchi. 8vo, 265 pages, paper. Societa Editrice Dante Alighieri di Albrighi, Segati & C., Milano-Roma.

Therapeutic Hints.

Itching of the Skin.—For this condition Biddle recommends lukewarm and moderately hot baths, very hot applications, and alternate applications of heat and cold, each fifteen seconds, repeated a number of times. Acid baths sometimes are of advantage, and in other cases alkaline baths are more effective. For an acid bath use the following:

℞ Ac. nitric. fort. ..... ʒ ss.
Ac. hydrochlor. fort. ..... ʒ i.
Aquæ ..... C xxx.

The following is a formula for an alkaline bath:

℞ Potassii carbonatis .....
Sodii carbonatis ..... ʒ iii.
Sodii biboratis ..... ʒ ii
Amyli ..... ʒ viii.
Aquæ ..... C xxx.

The most frequently used, and the most successful of the antipruritics, owing to their stimulating effect and to their specific benumbing of the nerves, are phenol, camphor, and menthol, but much discrepancy exists as to the strength of the ingredients, especially as regards phenol. Biddle never uses it in greater proportions than five to ten minims to the ounce, but others advocate its use as high as 20 to 30 per cent., sufficiently strong to benumb the parts. It may be incorporated in a lotion with water in the proportion of three drams to the pint with an ounce of glycerin. Camphor is usually combined with phenol in the proportion of three to one by weight, or with chloral in equal proportions. Menthol is usually used in an ointment base, or in olive oil, ten to fifty grains to the ounce. In the astringent class may be found a weak solution of alum, of citric acid, and a solution of lead, especially the subacetate, two to three drams to the pint; of dilute hydrocyanic acid, half to one dram to the pint, or pyroligneous acid, one to thirty. In the disinfectant class the best preparation is tar, as found in the liquor carbonis detergens, or liquor picis alkalinus, or naphtol. For its purely anesthetic effect cocaine is used, especially in pruritus vulvæ, but care should govern its use, for fear of establishing a deleterious habit after repeated applications. For its analgesic effect resorcin is often used in solution, as are ichthyol and nitrate of silver, the latter applied with a brush, as in pruritus ani. —*Journal of the Michigan State Medical Society.*

Frostbite.—

℞ Ichthyol.
Resorcin.
Acid. tannic. ..... aa. 10
Aq. dest. 50

Sig. Apply twice daily.

℞ Icthyol.
Ol. Camphorat. ..... aa. 5
Lanolin. 20

M. Ft. ungt. Sig. Apply night and morning.
—*Pharmazeutische Post.*

Cooling Ointment.—

℞ Acid. salicyl.
Acid. carbol.
Naphtol ..... aa. 5
Lanolin.
Petrolati ..... aa. 30
Aq. dest.
Acid. acet. dil. ..... aa. 15

M. et ft. ungt.
Correspondenzblatt für Schweizer Aertze.

Irritable Bladder.—The following has been recommended for irritable bladder:

℞ Tr. hyoscyami. ..... ʒ i.
Potass. citratis ..... ʒ ss.
Ext. buchu fl. ..... ʒ ss.
Ext. tritici fl. ..... ʒ i.
Aquæ dest. ..... q.s. ad ʒ iv.

M. S. Teaspoonful in a wineglass of water three times a day.—*Clinical Review.*

Palpitation.—For the mildly neurotic heart Satterthwaite prefers to use camphor monobromate, especially in the fluttering heart of emotional women. It is also useful in nocturnal palpitation, such as is so frequently seen in diabetes and in aortic disease.—*Denver Medical Times.*

Facial Eczema in Children.—The following treatment is advised by Lassar for crusted eczema of the face in children: Clean carefully, oil the parts, wash without enough friction to cause bleeding, and apply the following salve:

℞ Olei. rusci
Sulphuris sublim. ..... aa ʒ ss.
Vaselini
Saponis domestici. ..... aa. ʒ i.
Cretæ albæ. ..... ʒ iiss.

M. S. Apply, cover with powder and bandage.—*Clinical Review.*

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery.	Montgomery	April	2
Arizona*	Ancil Martin, Phoenix	Phoenix	April	2
Arkansas*	J. P. Runyan, Little Rock	Little Rock	April	10.
California*	Chas L. Tisdale, 530 California Street, San Francisco	San Francisco	April	17.
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	3.
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July	10
Delaware	P. W. Tomlinson, Wilmington.	Dover	June	19.
Dis. of Col'bia	W. C. Woodward, Washington.	Washington	April	12.
Florida*	D. Fernandez, Jacksonville	Gainesville	April	16.
Georgia	E. R. Anthony, Griffin	Augusta / Atlanta	April / April	3. / 5.
Idaho	J. L. Conant, Jr., Genesee	Pocatello	April	3.
Illinois	J. A. Egan, Springfield.	Chicago	April	18.
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	22.
Iowa	J. F. Kennedy, Des Moines.	Des Moines.	June	—
Kansas	T. E. Raines, Concordia.	Topeka	May	1
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	24.
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	May	3.
Maine	Wm. J. Maybury, Saco	Augusta	July	10.
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	20.
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May	8.
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	12.
Minnesota	O. E. Linier, 24 South Fourth Street Minneapolis	St. Paul	April	3.
Mississippi	J. F. Hunter, Jackson	Jackson.	May	8.
Missouri	J. A. B. Adcock, Warrensburg	St. Louis / Kansas City	April / April	10. / 16.
Montana*	Wm. C. Riddell, Helena	Helena	April	5
Nebraska	Geo. H. Brash, Beatrice	Lincoln.	May	29
Nevada	S. L. Lee, Carson City	Carson City	May	7.
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July	6
New Jersey	E. L. B. Godfrey, Camden	Trenton	June	19
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	4
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo,	May	22.
N. Carolina*	Geo. W. Pressly, Charlotte	Charlotte	May	23
N Dakota	H. M. Wheeler, Grand Forks.	Grand Forks	April	3.
Ohio	D. N. Kinsman, Columbus	Cincinnati, Cleveland, Columbus,	June	12.
Oklahoma	J. W. Baker, Enid.	Guthrie	March	28
Oregon*	B. E. Miller, Portland.	Portland	May	10.
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburg,	June	19.
Rhode Island	G. T. Swarts, Providence.	Providence	April	5.
S. Carolina	W. M. Lester, Columbia	Columbia	June	12.
S. Dakota	H. E. McNutt, Aberdeen.	Watertown.	July	11
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	2.
Texas	T. T. Jackson, San Antonia.	Dallas.	June	12.
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	April	2.
Vermont	W. Scott Nay, Underhill.	Burlington.	July	10.
Virginia	R. S. Martin, Stuart.	Richmond	June	10.
Washington*	C. W. Sharples, Seattle	Tacoma.	July	3
W Virginia*	H. A. Barbee, Point Pleasant	Parkersburg	April	20.
Wisconsin	J V. Stevens, Jefferson	Madison	July	10
Wyoming	S. B. Miller, Laramie.	Cheyenne	June	6.

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Minnesota.—Reciprocity has been established between Minnesota and the following States: Illinois, Iowa, Kansas, Maine, Maryland, Michigan, Missouri, Nebraska, Nevada, New Jersey, Ohio, South Carolina, South Dakota, Wisconsin, and Wyoming. The fee is fifty dollars.

Nebraska.—On and after July 1 next, all applicants for a license to practise medicine in Nebraska must present evidence of having either (1) a college or university degree, or (2) a high school diploma of standard of college entrance. Failing either of these, the applicant must pass a satisfactory examination before the State Superintendent of Public Instruction.

Iowa has established reciprocal relations with the following states: On examination only with South Dakota, Colorado, Illinois, Missouri, Wyoming, Minnesota, Nevada, and New Jersey. Upon examination, or upon a diploma from a reputable medical college without examination, if the certificate was issued prior to January 1, 1899, with Nebraska, Kansas, Texas, Wisconsin, Michigan Indiana, Kentucky, Maryland, Georgia, and South Carolina.

Indiana.—The Indiana State Board of Medical Registration and Examination receives severe criticism at the hands of the *Fort Wayne Medical Journal-Magazine*. Among other charges, the board is accused of allowing the questions for a coming examination to be circulated. It is also charged that a certain medical man had been informed that for one hundred dollars he could be furnished with all the questions of the coming examination of the board.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 24, 1906.

	Cases	Deaths
Typhoid Fever	15	5
Malarial Fever		
Smallpox	1	
Varicella	159	
Measles	1052	47
Scarlet Fever	209	8
Whooping Cough	25	2
Diphtheria	370	50
Tuberculosis Pulmonalis	453	200
Cerebrospinal Meningitis	36	23
Totals	3,220	335

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending March 24, 1906.

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
California, San Francisco	Mar.	3–10	7	..
Delaware, Wilmington	Mar.	10–17	3	..
Florida, Jacksonville	Mar.	10–17	7	..
Georgia, Augusta	Mar.	12–19	2	..
Indiana, Indianapolis	Mar.	11–18	1	..
Louisiana, New Orleans	Mar.	10–17	12	..
Shreveport	Mar.	10–17	1	
Maine, Biddeford	Mar.	10–17	6	
Maryland, Baltimore	Mar.	10–17	5	..
Missouri, St Louis	Mar.	10–17	3	1
Montana, Broadwater County	Feb.	1–28	2	..
Lewis and Clark County	Feb.	1–28	1	..
Missoula County	Feb.	1–28	2	..
Silver Bow County	Feb.	1–28	1	..
New York, Buffalo			1	..
North Carolina, 19 Counties	Dec	1–31	374	.
23 Counties	Jan.	1–31	438	.
Ohio, Cincinnati	Mar.	9–16	3	
Hamilton	Feb.	10–17	1	.
Tennessee, Knoxville	Mar.	10–17	1	..
Memphis	Mar.	3–17	5	..
West Virginia, Wheeling	Mar.	10–17	6	..
Wisconsin, Appleton	Mar.	10–17	2	..
Beloit	Mar.	3–10	1	..
Milwaukee	Mar.	3–17	3	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Jan	27–Feb. 10	7	..
Brazil, Rio de Janeiro	Feb.	11–18	3	..
Canada, Grand Falls, N. B	Mar.	15	18	..
Winnipeg	Mar.	3–10	1	..
Germany, Bremen	Feb.	24–Mar. 3	1	..
Gibraltar	Feb.	25–Mar. 4	9	1
Great Britain, Leeds	Mar.	3–10	1	..
London	Feb.	17–Mar. 3	4	..
Greece, Athens	Feb.	6–20	..	5
India, Calcutta	Feb.	3–10	..	141
Karachi	Feb.	11–18	33	8
Madras	Feb.	10–16	..	36
Rangoon	Feb.	3–10	..	56
Malta	Feb.	18–24	1	..
Mexico, Tuxpam	Feb.	27–Mar. 6	..	5
Netherlands, The, Rotterdam	Feb.	25–Mar. 3	1	1
Russia, Moscow	Feb.	10–24	22	5
Odessa	Feb.	17–Mar. 3	25	3
St. Petersburg	Feb	17–24	4	3
Spain, Barcelona	Feb.	19–Mar. 1	..	6
Tarragona	Feb.	25–Mar. 3	..	1
Turkey, Alexandretta	Feb.	17–24	15	..
Constantinople	Feb.	18–25	..	2
Uruguay, Montevideo	Dec.	1–31	..	1

YELLOW FEVER

Brazil, Rio le Janeiro	Feb.	11–18	9	3
Mexico, Merida	Feb.	24–Mar. 3	2	.

CHOLERA—INSULAR.

Philippine Islands, Manila	Jan.	20–27	3	2
Provinces	Jan.	20–27	348	247

CHOLERA—FOREIGN

India, Calcutta	Feb.	3–10	..	83
Rangoon	Feb.	3–10	..	3

PLAGUE

Brazil, Rio de Janeiro	Feb.	11–18	5	1
India, General	Jan.	27–Feb. 10	13 232	10,932
Calcutta	Feb.	3–10	..	30
Karachi	Feb.	11–18	6	8
Madras	Feb.	10–16	..	9
Rangoon	Feb.	3–10	..	20

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 14.
Whole No. 1848.

New York, April 7, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

SOME POINTS FOR DISCUSSION RELATING TO THE PREVENTION AND TREATMENT OF PNEUMONIA.*

By BEVERLEY ROBINSON, M.D.,

NEW YORK.

My purpose this evening is to offer a few important topics for discussion, relating to pneumonia. In doing so I will open it briefly with some facts based on personal observation and experience,† together with the added experience and observation of others—to whom I owe my cordial thanks for courtesy and help.

First, then, I would speak of leucocytosis, or its absence in pneumonia. What value or assistance is it as regards prognosis or treatment in a given case?

In December, 1904, I wrote as follows:[1] "There is a point to which I would refer in connection with treatment, because from its appreciation may proceed, I trust, something of real value in prevention of imminent danger. Absence of leucocytosis in acute lobar pneumonia presages death, as hitherto observed. It behooves us, therefore, to have a careful differential blood count made as soon as the disease is at all clearly defined; and no matter how limited locally the disease may be for a while, or how little threatening at first the symptoms, we cannot be too solicitous or too watchful in such cases in our care and treatment. Several times death has followed rapidly, in my experience, and except for the known result of the blood count I should have been lulled into a false security. Later, also, we may obtain facts of great value from the differential count of the leucocytes, as we now do in appendicitis. If in the beginning, for example, we discover the polynuclear neutrophiles in relative excess and the eosinophiles notably decreased or absent, may we conclude that these are, in reality, the very serious cases, 'whether associated with increase of the total number of the leucocytes beyond the normal or not?' I must leave a positive answer for the while with my laboratory friends."

One of the best of them, in my judgment, Dr. F. E. Sondern, answers it briefly as follows, so late as November 13, 1905:[2] "The increase in the relative number of polynuclear cells is a direct indication of the severity of the toxic infection and," he adds, "the degree of leucocytosis an absolute indication of the body resistance toward infection."

The following is a report kindly sent me by Dr. G. B. Capito, late house physician of St. Luke's Hospital, on January 1, 1906. He writes: "The statements seem to be warranted. (1) Patients with low leucocyte counts, as a rule, appear to be more prostrated than those with a distinct or marked leucocytosis. (2) However, some of the cases with low leucocyte counts did not appear markedly prostrated; and cases with a distinct leucocytosis fared badly; *e.g.* one case died, another case with about the same physical signs in lungs, leucocytes 6,400-14,000, lived. (3) In one case with low leucocytes there seemed to be an improvement in the general condition of the patient when the number of leucocytes increased."

On January 18, 1906, Dr. I. Adler wrote me "that we have found in all cases of pneumonia (records of German Hospital, N. Y.), especially lobar pneumonia, provided there are no complications which might influence the leucocytosis, the leucocyte count of the greatest prognostic value. A good leucocytosis of 18,000 to 20,000 or more signifies to us a probably favorable course of the disease, while a low leucocyte count, no matter how favorable the other symptoms, means danger ahead."

Dr. Harlow Brooks "considers absence of leucocytosis in pneumonia in frank cases, as a bad prognostic sign." (From a letter to me January 26, 1906.) The results of recent studies of leucocytosis as a prognostic sign of pneumonia, according to a personal letter, dated February 11, 1906, from Dr. Augustus Wadsworth, a former member of my house staff at St. Luke's Hospital and a scientific observer of very great promise, is as follows: "A constantly high leucocytosis is a favorable sign and a low count unfavorable, but in individual cases a low leucocytosis may be due to a mild infection and the high count to a virulent infection. It is then a sign of the virulence of the infection and of the recuperative resources of the patient; extremely valuable when rightly interpreted with the other determinations of individual cases."

In order to be valuable and reliable, as regards prognosis and treatment, frequent counts should be made during the acute stage of pneumonia. Isolated counts have little real value and are frequently misleading. Counts, especially differential ones, are thoroughly satisfactory only when made by men who have extensive experience, are skilled and trustworthy, and have all desirable laboratory facilities. I consider it useless, except in extremely rare instances, for the medical practitioner, either of high or low degree, to devote the time essential to acquire the technical knowledge and facility properly to make these counts and then to make them continuously, even in relatively few instances. Therefore, it is merely conscientious in a last analysis, to our patients and to ourselves to hand over this work to those best fitted to do it, and not to trammel or attempt to control it by our own minor knowledge or power to do the practical part of the work. I, for one, claim also that we who do not perform the actual laboratory work are far better able to estimate its clinical importance than anyone, no matter how versed in constant laboratory work, even of the best sort, can be who is not brought into frequent daily contact with patients. And to unite the two

* Read at a meeting of the Practitioners' Society of New York, March 2, 1906.

† I wish to say that a portion of my paper is only what I have written and insisted upon, more than once, previously. However, as I consider the subjects dwelt upon of great importance practically, I do not hesitate, as opportunity offers, to bring them again to your attention.

things to-day is widely recognized—and among our best men—as practically well-nigh impossible. The blood counts in any given case should be made by the same observer; otherwise they do not tally oftentimes. This may arise, unfortunately, from two causes, assuming two observers are equally competent. First, and most frequent, reason is, their apparatus and technique are not often absolutely similar; they can't be identical. Again, men's eyes are not invariably normal; at all events, they don't see straight. As an example of the former in another line of research, I would instance *differences* in *urea estimates* made by two observers who make urinary analyses. These differences I have noted more than once. As an evidence of the second, I would remark that individually I have ceased to try to make my ocular estimate of hemoglobin coincide with that of more than one hospital interne. If I, or he, make reports continuously, it makes really little difference, because comparison is relative between observations made by the same person, same method or technique, same eyes. But with two persons there can be no comparison, and one observer is right and the other is wrong, in reality; but which one is right and which wrong—there is the rub, and who will, who can decide in these moot cases? And surely we are not going to call in a third person to decide ordinary differential blood counts, or urea estimates, or percentage of hemoglobin.

Moreover, unless differential count is made by this third person at the same time as others, it is unsatisfactory because condition of blood may have changed very much during interval between counts. I have had lately just such an experience in a doubtful case of another kind.

In Dr. Smith's valuable paper on the "Essential Nature of Croupous Pneumonia," read at a stated meeting of the New York Academy of Medicine, December 17, 1896, he writes that, if his theory be sustained, "it would follow that the most natural direction for therapeutic effort would be that of attempting to render the exudate inimical to the development of the micrococci. This might be effected," Dr. Smith also writes, "by acting through the blood, but better and more directly by inhalations." The value and proper use of inhalations in the treatment of pneumonia has been insisted upon by more than one prominent practitioner. "Dr. Andrew H. Smith, a few years ago, reported the successful employment of chloroform inhalations in the treatment of pneumonia, and commenting upon this article and a letter on the same subject by E. J. Whitehead, Dr. E. F. Wells of Chicago recalled a report by Baumgartner of 201 cases treated by himself and others with but seven deaths, a mortality of 3.5 per cent. Chloroform inhalations were also commenced by the late Dr. Roberts Bartholow, by Stiff, Theodore Clemens, and others."[3]

The value of creosote by inhalation in vapor has been asserted by myself, and doubtless by others—yet it is ignored by most of the text-books on medicine. To quote from a paper read before this society January 7, 1898: "Some disinfectant vaporized by boiling water may be advantageously generated in the room, both for the possible good to the patient and to prevent the spread of disease. The drug upon which I rely most for this purpose is beechwood creosote. I believe its judicious use is almost always satisfactory. Creosote is easily volatilized; it has undoubted antiseptic power; the odor of its vapors is unobjectionable, harmless, and they frequently arrest cough and bronchial irritation in a remarkable manner." "In case of pneumonia following grip, I can affirm their useful effects in promoting the rapid resolution of the disease. I have also had some reasons to believe that they prevented the transmission of the primary affection, and it might be of the complicating pneumonia. This view is plausible, since we know that thorough disinfection of hospital wards has arrested the spread of pneumonia, when previous to the use of disinfectants the disease showed no tendency to abatement."[4]

"During my service in St. Luke's Hospital during the winter of 1897, several cases of pneumonia were treated partly with creosote internally and partly by inhalation of creosote. These cases, in my judgment and in that of my house staff, were favorably affected by creosote treatment, although we could not carry it out altogether as we desired, from the fact that the patients were treated in the general ward of the hospital."

"I am of the opinion that creosote vaporized and inhaled frequently, almost constantly for several days, is far more beneficial and essential than the same drug when it is given by the mouth."

In a paper read before the American Climatological Association, June 4, 1904, and which was published in *American Journal of the Medical Sciences*, December, 1904, I wrote as follows: "With the first symptoms of chill, fever, pain in the side, cough and expectoration, I believe beechwood creosote should be vaporized more or less continually in the patient's room. I am confident there is no drug used in this way which has more preventive value in the treatment of pneumonia. Of course I cannot prove to others that several times already by this means I have prevented in private practice, as I believe, what otherwise would have become pneumonia. Whether it would have become croupous pneumonia or bronchopneumonia, I am not prepared to say except in a hesitating way, and with, it may be, a conviction tending toward the latter opinion. I wish it to be understood that I only give to creosote a very slight or moderate antiseptic power locally; but I know it is an anticatarrhal agent of great value directly and by elimination through the bronchial mucous membrane. Further, I am thoroughly convinced it is the best way to give creosote so as to obtain its constitutional effects without disturbance of the stomach and, as a rule, without injury to the kidneys. It is wise, of course, if creosote be used freely in inhalations, to examine the urine carefully and frequently for any appreciable amount of albumin. If this be present we should try to determine its cause—whether it be the result of pneumonia or of the action of the creosote, and act accordingly." Occasionally, creosote by inhalation used too freely gives headache to the patient or to the nurse. In this case it should be intermitted for a few hours, perhaps, and the room thoroughly ventilated. It is also my belief that creosote thus used prevents the taking of pneumonia by the nurses in attendance or by any near relative very constantly in the room. "In exceptional cases and in certain epidemics when the pneumococci are more abundant or more virulent, or both, than usual, the transport of the noxa of the disease through the air no doubt occurs, and may be best neutralized primarily by insisting upon having the vapors of creosote in the room." This view is supported by the Chicago Board of Health, and its yearly bulletin already in 1902 stated "that the inhalation of formaldehyde gas will prevent a very large proportion of cases of the diseases which now threaten the public health"—referring especially to pneumonia and influenza. Dr. Frank W. Reilly, Assistant Commissioner of Health, in a personal letter to me, dated February 27, 1905, confirms the

value of statement of Health Bulletin of 1902, and again in 1904. In the Bulletin of 1902, Dr. Reilly describes a formalin box which "should be carried on the person during the day and put under pillow at night." At the onset of symptoms of having "caught cold" begin inhalations, and frequently the cold will be abated. Personally, in view of my own experience, I should prefer using a perforated zinc inhaler with equal parts of beechwood creosote and spirit of chloroform. Some years ago I made frequent use, and in very many cases, of this inhaler and often, I am convinced, I have been very helpful to patients with initial symptoms of cold, *i.e.* sneezing, coughing, running of the nose, etc. If the pneumonia becomes developed, I believe antiseptic mouth washes and creosote inhalations should be continued throughout the acute stage of the disease, and, indeed, until the local consolidations have been resorbed."

The pathogenic organism of lobar pneumonia is admitted to be the pnuemococcus or micrococcus lanceolatus. It is omnipresent and is found, we might say almost constantly, in the secretions of the mouth and throat of seemingly healthy persons. What endows it with special virulence in certain cases we do not know. However tenacious of life this microbe may be under favorable conditions, we know that it is exceedingly vulnerable. In sputum, moist or dry, it preserves its vitality for a long time, but in culture it soon dies. F. C. Wood has shown that when the dried sputum is pulverized the contained pneumococci perish in from one to four hours, even when kept in the dark, and in about one hour when exposed to the sunlight. Given a microbe, which perishes so quickly under adverse conditions, growing in culture in the accessible alveoli of the lungs, it ought to be a comparatively easy matter to arrest its growth. And so it appears to me and to some others who have to deal with the disease in actual practice.[5] Is there not, also, in this important fact a very substantial reason why we should endeavor to employ creosote inhalations early in the treatment of pneumonia, before lung consolidation has taken place, and while we may yet legitimately hope that the antiseptic vapor may reach every portion of the affected pulmonary area? But in order that growth of microbe may be stopped and to place pneumonia in the category of curable diseases, sometimes easily, sometimes with difficulty, *"the time of the treatment* when begun is most important—essential and decisive at times in regard to the outcome of the disease."[1]

"There can be no question that influenza, or grip, is the most important factor of the increase of pneumonia. Influenza[6] is a germ disease and therefore contagious. Where strict isolation has been possible and effected, the disease has seldom appeared. By avoidance of grip many subsequent cases of pneumonia may be prevented. If grip be taken and creosote inhalations be employed properly and soon enough, other cases of pneumonia may, also, be prevented.

The influenza germ has been found by the laboratory experts in pneumonia, and a bacterial examination is therefore of the first importance.* Avoidance[7] of living in close quarters (as many city people do) and of frequent contact with infected persons should be insisted upon to limit the prevalence and fatality of pneumonia. The importance of attention to these rules is in accord with the result of Dr. J. F. Biehn's investigations, "who has demonstrated that, while the individual inoculation of the pneumococcus from a healthy person may be innocuous, the inoculation of the coccus from two or more healthy individuals is unfailingly virulent."[7] The Pneumonia Commission appointed by Dr. Darlington in August, 1904, says "that there is a possibility that pneumococci of greater virulence than those found in the mouth are inhaled with the air current, determining the onset of the disease. The practical point for prevention is the necessity of avoiding all unnecessary contact with a pneumonia patient, and the further necessity, on the part of other members of the family, nurses and attendants, for sterilizing their throats during the course of the disease."

As showing, however, the very notable and yet hitherto at times unexplained variations of mortality of pneumonia in successive years, witness the fact that in Chicago in 1905 "there were 3,586 deaths reported, or 552 fewer than in 1904—a decrease in the 10,000 rate of 4.2 per cent. from the average rate of the previous ten years and of 15.9 per cent. of the previaus year."[8]

"By doing the right thing at the right time, life may be saved; when there is delay in doing the right thing, life may be lost." Put your patient to bed immediately on the advent of serious symptoms of the disease, provide him with the best nurses, begin inhalations of creosote, and use other curative means judiciously, and I believe many even bad cases may be saved. But delay these primary and efficient, though simple, means too long, and the patient will often die. He will die because the poison of the disease has taken hold of him too strongly, in too large quantity, and before proper and suitable means have been employed to check or throttle it. Again, there are some cases of pneumonia, as there are some cases of diphtheria, enteric fever, scarlatina, smallpox, etc., which will almost inevitably die to-day, as always, up to the present time, no matter what treatment is employed. And the proof of it lies in the record of medicine for one hundred years or more. Indeed, the virulency of some of these cases is such as to render them well-nigh hopeless, and they will remain so unless medical science gives us curative sera superior to any we now possess."

"We know to-day that the pneumococcus is found in the secretions of the throat and mouth of many healthy people, and for long periods of time. One or more of the contributive causal conditions may render these microorganisms virulent or infective. Quinsy sore throat, diphtheria, influenza, pneumonia,[9] may proceed therefrom. In the tonsillar crypts may be found not infrequently various septic organisms, "among which staphylococci, streptococci, pneumococci, and leptothrix are abundant." "The mouth is the great highway for receiving germs into the air passages; it is, also, the convenient receptacle for the cultivation of the disease-producing germs. Food accumulated between the teeth and kept at body temperature is a rich soil for pneumonia germs. An unclean mouth will readily furnish material for the destruction of its owner."[7] It is essential, therefore, for every one, so as to aid in the prevention of pneumonia practically, to keep their mouths and throats in a sterile condition as far as possible.[7] "The secretions of the nose, mouth, and throat often teem with the influenza bacillus, and they should be immediately destroyed or thoroughly disinfected. We may not be able to avoid the access of germs which produce pneumonia, but we can in a large measure live and act, so as to rob them of the opportunity to become fatally active." Is it not specially indicated, therefore, to make use

* Bulletin of the Health Department, Chicago, February 10, 1906, states: "The pneumonia mortality is largely affected by the prevalence of influenza. Bacteriological examinations in the laboratory continue to show a marked preponderance of the influenza bacillus."

of antiseptic gargles and mouth-washes frequently when we have reason to fear the possible beginning of pneumonia? This antiseptic mouth-wash, at such times, should have a slight acid reaction, simply because we know that the pneumococcus does not thrive in an acid medium. Dr. S. Lejan,[10] who is very strict as regards the observance of using mouth-washes, "enjoins in every case strict buccal antisepsis, by rinsing the mouth frequently with solutions of boric acid (4: 1,000) or of thymol (1: 1,000). It is indicated, also, to continue the use of these antiseptic gargles and mouth-washes even after the pneumonia is recovered from, as pneumococci may still remain in the mouth and may possibly occasion a recurrence of the pneumonia in the individual."[11] It is claimed by Musser that a dose of calomel, if sufficiently large and employed properly, may act as a local disinfectant of mouth and throat, and later, in like manner, in stomach and bowels.

Incidentally, and finally, I would add that on account of the deleterious action upon the teeth, I do not approve of a mouth-wash of acid reaction to be used habitually in a condition of normal health.

"In more than one instance in the treatment of pneumonia, and where other heart stimulants had been of little or no avail, I am sure I have been of use and helped save life with the use of the best available preparation of coca. Given by the mouth or hypodermically, it has often been of service when I had almost given up hope. The reason, I believe, that this agent does not more frequently respond to our wishes is because the preparation employed is relatively inert. Many coca leaves, not to say the far greater majority, are dry and of poor quality when first gathered. Further, the wrong variety of leaf from which to obtain the tonic alkaloid of the plant is usually employed. Hence, much of the coca used, as wine or extract, contains a large percentage of cocaine, which I believe has little or no tonic properties, and does not contain the other derivatives most valuable in cardiac exhaustion of pneumonia."[1] "Further, the coca leaf does not bear transportation from its native soil after being gathered, and if this is done the tonic alkaloids which it contains become changed and worthless medicinally as a nerve tonic."[12]

"For these reasons, must unfortunately, if we wish to give our patients the benefit derived from coca, we are obliged to recur to the use of one or other of proprietary preparations. I should not advise, with my present acquired knowledge, the continued use of coca in the treatment of pneumonia. It is more particularly as a temporary help when, however, help is most needed and sought for, that it should be used. Under these circumstances neither alcohol, ammonia, strychnine, nitroglycerin, digitalis, nor any other drug will be so soon and so distinctly valuable as coca."

"In those instances where small, frequent, irregular and rapidly-failing pulse and very weak heart follow closely upon the acute general phenomena of pneumonia, the best preparations of coca are sometimes simply invaluable."

So far back as 1894, in a paper read before the Association of American Physicians,[13] on the treatment of croupous pneumonia, I wrote as follows: "On several occasions already, when a patient's condition has seemed desperate, and after strychnine to the highest possible limit compatible with safety had been vainly employed, I have had at least temporary results of considerable value from the use of hypodermic injections of extract of coca, made up aseptically. I am of the opinion, however, that we must rely also in these cases upon the use of nitroglycerin hypodermically in sufficient doses to restore the patient to a relatively good condition. These hypodermic injections, alternated with those of strychnine, will do what no other drugs in my experience will accomplish."

As an instance of the value of coca, even when given solely by the mouth, where there was extreme weakness following the acute symptoms of double pneumonia and where the best brandy was gradually failing to hold the patient's heart, I would offer the following case observed latterly in Dr. Geo. A. Spalding's service at St. Luke's Hospital. Incidently, I would add that the patient referred to was a former patient of Dr. W. M. Tompkins and of myself, and was sent to St. Luke's by us. I followed up the patient pretty closely after entrance in St. Luke's, and it was I who sent *old brandy* and *coca* (fluid extract) which helped very materially to save her life.

Case.—S. McL., widow, Irish, 57 years old, scrub woman, entered St. Luke's Hospital November 14, 1905. I take what follows from history of case kindly given me by Dr. G. B. Capito, house physician of Dr. Spalding.

"For last five weeks patient has been feeling out of sorts and has had slight cough. Yesterday, was taken with severe pain in right shoulder and down right side. Pain is severe, sharp, worse on breathing and moving body—was nauseated and vomited at first; had chilly sensations, but no fever. Pulse regular, full, bounding. Apex beat of heart not visible nor palpable—action regular—second sound accentuated.

Lungs: Right, dullness from spine to base; diminished breath sounds; a few crepitant râles, fremitus present.

Left: few crepitant râles at left base.

November 15. Right Lung: Dullness from fourth interspace to base, bronchial voice and breathing, numerous subcrepitant râles, fremitus increased.

November 20. Left Lung: Dullness, bronchial voice and breathing at angle of scapula, numerous crepitant râles.

November 25. Bronchial breathing less intense, numerous moist râles over both chests posteriorly. Leucocytosis varied from 10 to 25,000 during eight days.

Treatment: Mustard paste locally. Internally, strychnine, digitalis, old brandy (the very best), and finally, when these seemed to fail, *fluid extract of coca,* begun on November 26, fourteenth day of disease. At that date, temperature 98½°, respiration 30, pulse 100, but the patient appears *very weak.* Patient left hospital completely cured two or three weeks later.

"It is wisdom to give black coffee frequently in advanced cases of pneumonia with evidence of heart weakness or cardiac degeneration, whenever our coca is unreliable, either by mouth or rectum."[12]

In the treatment of pneumonia we should bear in mind constantly two facts most important. First, the outcome of the disease is a question of the vital resistance of the patient; whether or not he can stand the storm until the critical time when the morbific processes reach their maximum of development. This means the *crisis,* which, however, with old people frequently does *not* occur, at least in such clear-cut manner as often described. Still there is at a given period a waning of the poison of the disease (lysis) sometimes with young or middle-aged adults, more frequently with old people. It is during this period that the best old brandy and coca are especially required during many days.

Again, in the second place, we should remember

that in many cases the virulence of the disease is not due to the amount of lung tissue involved, but to the degree of the toxic influence of the pneumococcus on the general system. If the toxemia is profound and progressive, the culmination is death, and we have no means as yet to neutralize it. But if the toxemia be moderate and not progressive, may we not hope that in some of these cases if we make use of creosote inhalations from the beginning and throughout the pneumonia, and bring in use our old brandy and coca, in suitable doses and at the proper time, we shall save many patients who now die, as I believe, because of lack of proper judgment and absolute insistence upon doing certain primary things at the right time. Whether or not, coca could be given with advantage from the inception of the attack until its termination, I do not know. It may be that it could. And yet possibility of harm has prevented my using it continuously hitherto. I leave this with the society to decide.

In view of the remarkable success achieved latterly in the treatment of pneumonia by the tent treatment at Fordham Hospital by Dr. B. F. Dunn, and of roof treatment (out-door), at the Presbyterian by Dr. W. P. Northrup, permit me to speak for a moment of what is already known and has been often insisted upon. The importance of a large, thoroughly well ventilated room with open fireplace, as being essential in the treatment of pneumonia, has been urged more than once by myself and others. Indeed, the lack of these conditions is one of the strongest reasons for inveighing against the actual treatment of pneumonia cases in hospital wards, and explains in a measure how it is that our successful treatment in these institutions is not comparable with what we may and do obtain in private practice, so long as the old order of things continues wrongly to be perpetuated. When I make use of creosote inhalations, I also insist upon perfect ventilation, and frequently, and at more or less stated intervals, I stop inhalations altogether, and open the windows widely. Of course draughts must not be tolerated, and windows are opened more or less, according to temperature, moisture, and what I regard as being, and have for several years, considered to be, other essential requirements of the patient's judicious treatment. The patient affected with pneumonia needs, of course, plenty of fresh air continually, and this should always be amply renewed before becoming stale or injurious, by reason of "unnecessary breathing of the air from the patient's lungs" (Loc. cit.).

On the other hand, we should not be "unduly enthusiastic" as yet, about one agent and one alone. Outdoor treatment, tent treatment, may be proven later, with a larger number of cases, to be a *sine qua non*, not only in treatment of pneumonia, but also in treatment of acute bronchitis, influenza, and other respiratory disorders—Festina lente. The indications are there, it is true, but the thing itself is not absolutely proven yet a while, and radicalism in medicine, I believe, does almost as much harm as pure, unalloyed ignorance. Up to date it seems to me probable that "the most useful single agent in the treatment of pneumonia, as preventive and curative, is creosote, used preferably, as I believe, in inhalations, properly given and continued for a sufficient length of time."[14] And this judgment I hold, not only in view of my own experience of many years, but also because of that of several eminent clinicians.

Note.—Since this paper was read I have received communications from Dr. John G. Curtis, Professor of Physiology at the College of Physicians and Surgeons, New York, and from Dr. S. Solis-Cohen of Philadelphia, so well and widely known as a medical writer and practitioner. Dr. Curtis writes: "It is hardly conceivable that vapors should fail to reach the alveoli, and to be absorbed by the blood thence." Dr. Cohen writes: "My own impression is that they (vapors) do reach the air-cells."—B. R.

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SYNTHETICAL MEDICINE.

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This original subject suggests the following questions: 1. Is any field of medicine uncovered? 2. If so, is this field important? 3. Given an uncovered field of importance, is the process suggested therefore (*a*) definite; (*b*) legitimate; (*c*) generally available, and (*d*) productive of results?

If these questions can be affirmed, the subject is of value to the profession. I believe they can be affirmed.

Being new, the subject must be explained before it can be discussed. A published definition by the writer will serve as a starting point for the thesis.[1]

"Synthetical Medicine tentatively so called by the writer, is a field almost virgin to the profession. . . . It is as distinctive in domain as Preventive Medicine. Preventive Medicine includes all the comprehensive measures of hygiene, vaccination, antisepsis, quarantine, and military medical supervision—now focused to as fine a point as shooting a soldier on campaign who drinks unapproved water—which have conserved human life everywhere to figures beyond computation. A return to the conditions of a century ago would bring an appalling rise in mortality. Yet the work is nearly all recent.

"Synthetical Medicine, on the other hand, deals with the individual instead of the community. It is restricted to those who are self-guiding and provident, who study to get the best from their brain-pan full of protoplasm; it is hopeless with the rabble. It assumes to recognize and postpone that eventual trouble, be it in heart, liver, kidney, or blood-vessel, which a grouping and study of present conditions will often show years before it takes its classified text-book form. That this can be done by capable medical men is my most earnest conviction. If so, the immense importance of the subject to community medical economics and life insurance is at once apparent. Study the necrology of the last decade, even in this one country, and consider what an average of five years more to each of these elect of civilization would have meant for the family, community, and race. A man like Pasteur is more valuable to France than many regiments of soldiers.

"Synthetical Medicine, therefore, saving the waste of the most valuable kind of life—the lives of those who are contributing to their age—should yield the highest medical rewards of the future and

restore to medical men the revenue robbed from them by their own success in Preventive Medicine."

"Assuming to recognize and postpone the eventual trouble," however, is a restricted and incomplete statement regarding this new process, tentatively named. Its further assumption is to answer the question, "What in addition to the text-book diagnosis has the patient?" Frequently, as I shall try to show, the *unclassified* troubles are of more import to the patient than this text-book diagnosis under which he is classified. This question, therefore, invites along other avenues of help to the patient. A synthetical process is one that builds from many concrete conditions an entity, which may differ in order from any of its component parts as widely as a cow differs from its pasture. This entity, this new generalization, if not found in medical text-books, belongs to the realm of "The Unclassified Troubles," to which the writer has devoted a paper.[2]

Classification is necessary in every science. But as the first sprout of green above the ground may require time and development before it can be assigned to its family, so in medicine there are innumerable unclassified first signs discernible long before any of them have developed sufficiently to be ranged under their definite classification.

Synthetical Medicine assumes, in addition, a utility in this field of unclassified first signs.

Simply to mention the field, therefore, the very terms of the criticism thereon—that it is uncoverable—is to affirm that it is uncovered. The writer has succeeded measurably in classifying this unclassified, and reducing the process to a semblance of a science.

Its success has been too uniform to be coincidence or special skill. The process is the point; and believing this, the way has been paved in previous writings for the hazardous publication of the new process as a contribution to the profession.

This paper will not deal with therapeutics, but will try to point out the conditions which are at present neglected; neglected at cost of life; which conditions science can modify; which life science can save. Obviously, if these modifiable conditions are not seen or understood, remedial suggestion therefor is impossible. The criticism, "You imagine these things," must be met with the retort, "You do not see them."

The thesis, being synthetical, must start with simple declarative statements, few of which will be seriously disputed by the profession.

If one kidney is removed, an autopsy years later will show hypertrophy of the remaining kidney. There has been manufacture of new kidney substance by increase of function. That increase of function will make new capacity in most departments of the human organism, is obvious on scrutiny. (The degeneration from over-hypertrophy is another subject.) The superskill of remaining sense in the blind, the deaf, the mute—in their touch reading, lip reading, and intensified remaining powers—is not simply a burst of compensatory generosity from Providence, but from the law that an increase of a function will widen its capacity.

"Every schoolboy knows" that with proper activity he can swell his biceps, hypertrophy his heart, increase his chest expansion, *i.e.* manufacture new lung tissue. The physical supremacy of the present generation of Americans over the last proves that, while by thought a man cannot add an instant cubit to his stature, by forethought he may add several. Almost as demonstrable is the improvement of nutrition of the motor centers around the fissure of Rolando, by volitional (not reflex) motor impulses under athletic training.[3]

One has but to mention the subject of exalted special sense by unusual training—from the piano tuner to the tea taster. Little girls in India, born to the business of selecting different colored yarns for woven fabrics, are able to discern dozens of shades which show no difference to us. Freak balancing of the vaudeville, coordinating to write with the feet, juggling, even the muscle-swelling Sandow, self-upbuilt from a weakling, all show a lesson of possibility to us of more sober profession.

Not alone then are kidney, heart, lungs, biceps, and brain cortex capable of having additional substance manufactured for them by properly directed function; not alone can extra capacities be given in the special senses, as in the compensatory superskills, but every other tissue which is the product of life is capable of self-increase under certain conditions. As well-known examples, consider the extra length of the intestines of the Russian peasants from their bulky, innutritious food; or the enlargement of the prostate; or the broad hips of Holland women, developed from a conception of their beauty, which leads these women even to wear bags of sand to simulate the hips, if nature has withheld; or the gluteal development of horses in hilly regions; or the varicosities around the nose-wings and cheek-bones of those who have made this increase of capillary caliber by continually dilating their surface blood vessels with alcohol; or those newly manufactured vein calibers when collateral circulation is established—naturally in nature's efforts at self-redemption, or artificially, as by surgery in cirrhosis of the liver, or in decapsulation of the kidney. The blood itself, which is the practical basis of life, is not only measurably changeable in richness of component parts—these measures are daily routine—but more, is susceptible of relative and absolute increase in weight, as in those cases of obesity referred to later.

This capacity in the human organism for self-increase, for self-improvement as well as self-destruction, is one of the secrets at the basis of Synthetical Medicine.

The Incipient Dwindling of Function.—There is corresponding capacity in the human organism for atrophy and dwindling. Kidney, heart, lung, brain cortex, intestine length, surface capillary, blood volume and richness, each and all can be lessened under certain conditions. The prompt recognition of this incipient dwindling of function is another basal secret of Synthetical Medicine.

Is it necessary to mention the atrophies? Consider the small contracted kidney of anxiety—the Wall street kidney; take the sempstress's heart, lungs, biceps—of wet tissue-paper thickness; take the flat head of the Indian from burden bearing; the dwarfed feet of the Chinese woman; the withered area of ring or truss pressure on an otherwise healthy body; or the shrinking of leg muscles from even two weeks in bed.

As for brain atrophy[4]—the conceded early mental decay of the agricultural classes, from lack of circulation in the brain, has been advanced by thoughtful men as really the cause of death in a large proportion of the population. Our death certificates frequently charge the kidney, the liver, the heart, or the arteries with the death-cause which really rested in the slowly atrophying brain. The formula might be thus expressed: (1) brain sloth, leading to gradual disuse of functions; (2) from which comes atrophy of the parenchymatous cells all over the body, curtailing their selective duty of taking up nutrition and life-waste from the blood; (3) from this results a diminished resistance to an increased amount of self-poisoning; (4) liberation of an army of protecting leucocytes, which throw

up their fortresses (like hard tissue around a boil) in a reactive thickening all through the lumen of the arteries, arterioles, and surface capillaries. Fibrous tissue, the scar of this formula, thus takes the place of selective cell tissue, and slowly contracts and starves the individual from without inward.

What difference which organ gives out first; whether we say Bright's disease, cirrhosis, or endarteritis if the cause starting the insidious formula is in the brain—and note well, in such non-material elements as a loss of interest, a discouragement of motive, a resignation to a supposed inevitable; *i.e.* in a sluggish cerebral circulation? (The superactivity of cerebral quality is another subject.)

Elsewhere the writer has devoted a paper to show the extent to which the brain may be considered the source of vitality.

It will then be admitted that various organs and functions of the body are susceptible of increasings and dwindlings. Were the scientist able to command conditions, like a master at the organ keyboard, he could bring out this note and that from the complex mechanism—increasing here, suppressing there—making a synthesis in medicine like a harmony in music. Luther Burbank, in California, by a similar synthesis in plant life is building up wonderful new creations. The dwarf trees of Japan and the big trees of California speak by contrast of environment possibilities in the vegetable kingdom. Many of these conditions are commandable by the Synthetical physician, and applicable to the human organism.

If "the individual withers," therefore, he may be made to do so advantageously in departments of our own selection: notably in the capacity of his large intestine, his venous system, in the deposits along the line of his blood vessels, *i.e.* his connective tissue formations and in his tendency to obesity.

In this last direction it is quite feasible to reduce by a large fraction the territory to which blood must be pumped by the heart; to increase by like proportions the relative and absolute quantity and quality of the blood and the muscular power of the heart; to reduce connective-tissue formation; to increase parenchymatous tissue formation.

All the hypertrophies, all atrophies, are mixed in blessing and the reverse. It is their proper synthesis—like the individual elements of the state of wisdom, to which all subscribe but so few apply as a whole—that is the loud-calling opportunity of the medical profession.

Metchnikoff has recently popularized his results of a scientific study of age. He has shown, for example, that the graying of the hair is from the abstraction of the pigment by phagocytes. He signals the superabundant bacterial flora of the large intestine—with which fecal storage house he cites a case to prove we could dispense—as the trouble-breeding place. Here is a field we should reduce. The bacteria bring out the leucocytes, and the leucocytes throw up their fortresses after the formula given above.

But we cannot send out a protecting army, even of leucocytes, without feeding them, or, as Metchnikoff puts it, they will turn and devour their own populace. And this is precisely what happens. The repelling army is called out in excess of the body's power of commissariat, and it feeds off the organism, whence the pallor, the disappearance of pigment, hemoglobin, and red blood corpuscles. The formula here might be put: (1) the more bacteria; (2) the more leucocytes; (3) the greater consumption of pigment, hemoglobin, and red blood corpuscles; (4) the greater production of connective tissue; (5) the greater reduction of nutrition for parenchyma, and the greater failure of excretory selection. Nourishment needed for repair, and even for the organism itself, is consumed to repel, like burning the bulwarks to keep the engines going.

Not only then should the large intestine be diminished, but the gradual distention of the caliber of the venous system should be checked. This over-distended condition of veins takes from the whole quantity of blood an undue share, to be kept therein as sluggish, sewerage blood. Even a youth, passing from the carbon-laden air of a badly-ventilated crowd to fresh ozone, realizes instantly the vitalization from bright arterial blood. How much more important is arterial capacity and vein tonicity to the aging, blue-appearing individual, who has no disease, who but thinks he is getting old and tired, when he is principally being stifled with his own sewerage? Less intestine, less venous capacity, less fibrous tissue; more arterial resilliency and surface.

Then there is the adjustment of the heart to its increasing work throughout the body, as the calibers close in and as obesity grows. Consider a moment the statics of the circulation. Note the extra burden on the circulation of a pregnant woman or of a woman carrying a fibroid; or that produced by an Esmarck rubber bandage wound tightly around a leg. Note the static disturbance after the amputation of a leg, in the increased susceptibility to apoplexy, hemorrhage. Add the weight of a leg, or of a gravid womb, or of a fibroid to any pendulous abdomen in the form of fat; or contract your surface calibers, as cold does, or as malaria does during the chill, when the surface is deserted and the central organs are overfilled, and you have similar static differences. Every man whose arteriole calibers are closing in—*the first insidious dwindling of caliber*—is daily loading a growing burden on his heart pump. The relation of fat to ovary, thyroid, circulation, elimination, and vitality, is brightly signaled to us every time some unsuspecting patient drops dead from heart failure—whose only symptom was some increasing weight and shortness of wind.

Almost every other man and woman over thirty carries, not a marshal's baton in his knapsack, but death-warrant in his pendulous abdomen. I have called this triangular figure in women—with base below running to an apex above—the "apical" or "the Queen Victoria figure" (meaning no disrespect to her whose figure all know; who yet despite it, from fullness of other activities, lived to surplus decades of usefulness). This "apical" figure is an unneeded burden on heart and excretory functions, which can be absolutely lessened. I speak so surely here because routine success therein for years has made it necessary to struggle against the epithet of obesity specialist.

Hence, by increasing, by diminishing, by developing, by suppressing—*by not leaving to accident*—Synthetical Medicine may, for example, safely carry an individual who has no present disease through next winter's pneumonia; or save him from that pneumonia, which is thus easily grappled in its preventable stages, though cured with difficulty when entered upon.

The indulgent criticism that "we recognize and do all this" may be true individually in the case of our greatest men. But the writer has not seen this field definitely crystallized and deposited in type for reference, as a focused entity. And while priority is a pleasing fact, it is only of importance to the claimant; the point is to give handle to something of value.

For this important uncovered field of medicine the writer is able to suggest, *in conjunction with all the usual resources of medicine and surgery,* certain definite, legitimate, available, and productive processes. He feels justified in claiming that the profession can (*a*) "recognize and postpone the eventual trouble"; (*b*) that it can receive new light on the collateral, unclassified troubles, to which the text-book diagnosis may be entirely subordinate; (*c*) that it can thereby rescue from charlatanism the field of its own present failure: the chronic, "run-down" cases, coming under no text-book head; (*d*) that it can enter a new domain wherein lies savable life, at the time of life's greatest value; a domain at present unwritten, in which knowledge and purpose can modify by a readjustment of forces.

Avoiding discussion of remedial agencies until the opportunities calling therefor are well exploited, let us study an extended example of possibilities.

Age will be "the eventual trouble" in every person living to reach it. Its psychology is worthy of study. For purposes of illustration, I divide it arbitrarily, with specific restriction of term, into states of (*a*) undue resignation, (*b*) rebellion, (*c*) proper functional adjustment.

The vast majority are unduly resigned. Men slowly subside into their untidiness, old stories, and melancholia; women into an apical figure of querulousness and constipation. The picture of an old man dodging a horse in crossing the street will illustrate. Drivers do not fear the boys so much; their reflexes are keen, they act quickly and truly. But the old man's reflexes are slow. In his undue resignation to a supposed inevitable, he has brought nothing new to bear upon his susceptibilities; his reflexes are therefore dull, partly from disuse, partly from the hardening changes of self-poisoning, and partly from the natural processes of dissolution. Most of his accessory faculties have dwindled. His routines remain, but they have been adjusted to the line of least resistance. His back is bent, his step is shortened, so that even these routines are brought as near disuse as possible.

How much of this is natural dissolution? How much is from a desiccating brain and the consequent atrophy of disuse and self-poisoning? The latter element, with all of its nutritional effects, can be placed absolutely under control.

Suppose, for example, like the community at Oberammergau who live the Passion Play, another community lived day and night another play; and in that play a youth acted the part of a paretic, a tabetic, or a senile infirm. In how many months of the assumed paretic, tabetic, or senile quality, continually lived, day and night, could we find the first acquired atrophy? We should have here the "synthetical pathology," so to speak, of atrophies and self-poisonings acquired through a conception of a part, just as we see daily examples in shoemakers, tailors, and others, with occupation neuroses.

Actually among us, however, we can see in a group of tabetics a marked family resemblance in characteristics, quite apart from their spinal lesion. In all will be noted certain atrophies—like the physiognomy of a cripple—many of which result from abandon to the conceded hopeless nature of their trouble. The name, *tabes,* or wasting, tells the former conception of the trouble, as a failure of nutrition. The sequence is now better understood, somewhat after the following formula: (*a*) a toxemia, (*b*) a leucocytosis, (*c*) a sclerosis and obliteration of arteriole caliber, and (*d*) as the final and not first cause, a failure of nutrition. Probably the accompanying disablement contributes as much as anything to the advance of the disease itself. Frankel—with splendid results according to patients who have taken his regime and lived with coafflicted in Switzerland—has used this truth in his treatment of locomotor ataxia by starting early to teach collateral movements and new coordinations. This obviously develops these new motor tracts, just as the motor areas in the brain around the fissure of Rolando are nourished and developed by voluntary (not reflex) muscular action.

Frankel may accordingly be said to be practising synthetical medicine in this special "classified" domain, in that he is rescuing these collateral atrophies by training—even conceding the hopeless nature of the already degenerated nerve fibers. The point is not the method of treatment, but the illustration it affords of synthetical methods. The Russell committee at the Post-Graduate Hospital, the new Columbia College committee, are practising synthetical methods on the special classified trouble of tuberculosis. Edebohls, rescuing a starved-out kidney by laying new conduits of blood to the parenchyma, is practising synthetical medicine with a knife upon a special organ. So with the new surgical method for cirrhosis of the liver. Modern dentistry, however, is the best understood adaptation of this foreseeing process in a local field. Even the laity foresee, and thereby get "surplus decades" for the teeth.

In identical manner everything that is lost by undue resignation can be rescued by the purpose and knowledge of the synthetist. In all these departments his rôle is to adjust the disharmonies between hypertrophies and atrophies.

On the other hand, consider the rebellion—in the specifically restricted sense here used—of the old man, or the old woman, with alcohol, drug, or perversion. Even leaving the moralities aside, and speaking as economist, reckless rebellion conduces even less to *effective* longevity than undue resignation.

Senility has so long been associated in the popular mind with sex decay that the word has acquired almost a shamefaced meaning. The old men whom it is necessary to watch have, perhaps, never realized that there is an erectile quality of the brain, as well as liver, spleen, kidneys, and reproductive organs.[5] Indeed, the term "hemorrhoid of the brain" might well be applied to that condition of persistent thought in diminished resiliency of the cerebral circulation. Blood is engorged in certain parts of the brain, voluntarily in concentrated thought, involuntarily by uncontrollable emotion. The grand old men of history are those who have kept this cerebral erectility and the prompt distribution of the engorged blood well under control. Those under this rebellious heading may be said to have a "hemorrhoid of the brain," keeping them at this futile sensation hunt, with drug, alcohol, or perversion, which sometimes nullifies a whole career and brings sorrow upon a family.

This condition is largely the result of a disharmony in the application of a wrong function to a right call, under the misconception that one should follow the same lines at twenty, forty, and sixty. This question most obviously is within the province and duty of the synthetist.

From the sad picture of undue resignation, or this special rebellion, view the picture of proper functional adjustment. These have kept their psychical area unimpaired; they have hope, purpose, utility; they have not allowed their susceptibilities to dwindle. Take a few names from the list: Pope Leo, Gladstone, Moltke, Thiers, Pas-

teur, Virchow, Huxley, Darwin, Spencer, O. W. Holmes, and others even more in point. Has it not been from the fullness and roundness of function—not the contraction—that such men, who "live at the expense of their heirs," reach out into the surplus decades?

If such were originally endowed with special vitality, and are therefore nature's playful exceptions like those attaining enormous stature, their examples may not clarify synthetical medicine. But if *part* of their secret lay in environment, perception, intent, or will, that part of it we can annex. Herbert Spencer was a weakling, yet he completed his synthetical philosophy. Pasteur gave his life's work to the world after his stroke of paralysis. Theodore Roosevelt was too frail a lad for the East, yet something—some entity, physical or mental, plus environment—enabled him to become the strenuous symbol. What part of that entity can synthetical medicine annex? Surely it was not a physical something in the weak ones. On the contrary, it was a knowledge, or a hope with a purpose, which was focused synthetically on their mental and physical organism. It was neither materia medica, gymnasium, nor psychology—but a combination, a foreseeing preparation, a synthesis. Therefore, by a synthesis men have carried feeble bodies to surplus decades of use and happiness. We seek to annex their process.

A knowledge, a hope, a purpose, and environment—these we can as surely annex as any other entity used in medicine. This knowledge of possibility makes hope, the manufactured hope makes effort, and the effort makes result. A condemned man with a short time to live limits his project. Limiting the project stops achievement. Extending the time invites the project, and something results. All that surplus which grows from the directed effort is the harvest of synthetical medicine.

Practically, at the first sign of dwindling we can get light by asking of a man: Has he stopped doing new things, making new journeys, adding new acquirements, reading new books, essaying new leisure habits? Does he shorten his step, bend his back, become shabby in his person, and dwell upon the thought that "youth is a blunder, manhood a struggle, and age a regret?" Has he decreed that his time is short, his faculties (which he weakens by neglect) are failing, and his hope futile? To such an one, unrescued, the popular misconstruction of Dr. Osler's now famous pleasantry—that man is useless after forty—amounts almost to a death warrant.

Can he be gotten to do all these new things? Can you point out to him this hypertrophy, that atrophy, this abandoned susceptibility, that blunted reflex, this rescuable collateral circulation of motor tract? If so, Synthetical Medicine has surplus decades for him—more or less according to earliness.

But it is too late to start the processes when his centers are completely atrophied, his surface circulation entirely obliterated, the cortex of his brain hardened and shrunken; and death has already struck from the surface inward.

Compare two women, and note the life waste which could be rescued. Take one in the late thirties and early forties, of a class spread widely over America. She has neglected her teeth and her musculature; has become "apical," with a rumbling burden of intestines and overdistended veins below her belt. Her heart is flabby, and she is well into Bright's disease before even her specimen has reached the laboratory, and her picture is one of undue resignation and passing utility.[6] Perhaps she has even had dentistry, and secured the "surplus decades" for her teeth, but has neglected all other previsions and provisions as readily available.

Contrast her with another type of woman growing more numerous, as various threads of Synthetical Medicine are becoming better known. Well groomed at sixty, with musculature and sewerage perfect, her interests are keen, her utility and happiness unimpaired. There was a time in the career of the first woman when she could have been rescued for the "surplus decades" enjoyed by the second.

So that we must begin early. Who must begin early? Not the physical culturists of the magazine advertisement, though they undoubtedly have had their true successes. Not the "New Thoughter," or Christian Scientist, though they unquestionably have seen ailing patients, filled with enthusiasm, increase an activity theretofore abandoned. (We know, as they ignore, the material process by which an enthusiasm caught from a fakir's assurance, can light a hope, stimulate an activity, stop a toxin, establish a collateral circulation, and improve a condition down to the very neuron, where a drug might fail.) Nor yet the expert alone at materia medica; for therapeutics limited to drug or knife effects on the human organism can rarely warm the desiccating brain. Not the pedagogue; nor the literateur; nor the laboratory scientist; but the medical practitioner who has lived around his own circumference.

Most especially disqualified is the religious instructor, trained to despise the flesh, "count not this life," and "press forward" to the goal of a future life. "If an eye offend thee—if an arm—" in its letter is the antithesis of the medical viewpoint. This must be even the more emphasized, considering the almost sacerdotal quality of some of the work.

Civilization yearly postpones man's entrance into qualified struggle for ways and means; other animals early scratch and graze. The preparation and the ardor of accomplishment compass the span of activities in most men; they have no surplus decades. Because useless in ways-and-means problems, they have allowed to dwindle the only qualities of use to them in their surplus decades. And of such the question: "Shall a man live hereafter?" must be met by the response, "Does he live here?"

This is typical of those of a first generation who succeed, and come to the metropolis, and then furnish so many examples of cerebral bankruptcy. Trying to adjust material quenchings to inherited spiritual calls for function has, I believe, brought paresis to many a man living in similar disharmony. Consequently, symmetry of function has wider scope than mere skeletal muscle development, or emotional, or even spiritual enthusiasms. This is work for the medical man that no one else can do.

Synthetical medicine reasons backwards from old age thus: If so much of what is thought to be inevitable is really an allowed self-poisoning—considered inevitable, hence not studied or fought—if the legitimate processes of dissolution are but a fraction of the allowed and accepted result, how much of the trouble in all the other diseases and disqualifications is likewise *allowed*, and likewise removable?

As the symptoms of nearly all the diseases—what popularly seems to be the diseases themselves—are really beneficently intended reactions to conquer poison, the resemblance to the aging process is well marked. Inflammation, the congestions, the hurrying forward of new blood, even fever, all are recognized now as of such beneficent intent. In nearly every disease in the textbook, therefore, a

process parallel with the aging process will show a corresponding opportunity for synthetical medicine.

Synthetical medicine can accordingly grow new kidney substance, reduce the area to be supplied by the heart pump, enhance the richness of the product pumped by the heart, increase the muscular tonicity of the pump itself; create new lung tissue, new skin activities, new surface arterioles, new parenchymatous tissue, new circulation in a desiccating brain. Through surgery it can lay new conduits for nourishing blood to liver and kidney when the old are rusted out. It can foretell the atrophy of abandoned function, rescue fading susceptibilities, restrain hypertrophies, and plan for a source of vitality in the surplus decades. It is thus able to postpone that premature death of a man's periphery by the closing of his nutritive vessels, which slowly starve him from without inward.

Again the critic, who indulgently disposes of the subject, may say that all this means simply "keeping in condition." He may dismiss a patient showing no visible lesion, no laboratory finding, with the verdict that "heart, lungs, liver, kidney, reflexes are all right;" he may even find a classified trouble and work on that, and yet miss his full opportunity, and be outstripped in result by one versed in Synthetical Medicine.

This work is of high quality. It should have the best brain of the country, which business now attracts. Except in special cases, it will be but a dream of the profession unless the field is recognized as a special one, in which the usual consultation fee basis does not obtain. The "retainer fee" idea of the lawyer may have to be borrowed. Otherwise the men capable of the work will not turn from their engrossing and more profitable field of "classified troubles."

But Synthetical Medicine can cover a field wherein is effective human life of the best kind. This life is not savable by knife or drug alone, yet it is undeniably savable.

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4. Perhaps no more striking example of cerebral atrophy from disuse will ever be shown the world than by the autopsies on three boys recently executed. Three young men, born of the same mother, living under the same environment, were put to death at the same moment—in expiation of crime. The autopsy showed the brain of the elder, still a young man, markedly atrophied; the next less so; while the youngest, nearer to his original endowment, having spent less time in brain sloth, showed almost a normal brain. The atrophy of the eldest brain, a little later in life, had it been externally visible, would have masked itself to the community as a process of age; it was, on the contrary, simply a disuse and neglect.
5. In . . . the writer called attention to the erectile quality of liver, spleen, and pelvic organs. Recent experiments with the encometer (W. H. Thomson, Medical Record, May 6, 1903), have proven how rapidly the kidneys "can increase and then shrink in bulk by alterations in their circulation—being so liberally supplied with vasoconstrictors and vasodilators that they might almost be termed erectile organs."
6. Long before the laboratory will show kidney disturbance there is a renal physiognomy which is unmistakable to those trained to hunt for it. Like a family resemblance, unmistakable yet too subtle for words, the perceptions of the diagnostician's mind outrun his powers of expression. There is danger, however, in "recognizing" a condition unprovable in a medicolegal view, as this might open wide a door of fraud. See the author's pages in the *Boston Medical and Surgical Journal*, December 21, 1905.

66 West Fiftieth Street.

THE HIPPOCRATIC ERA IN MEDICINE.*

By RICHARD COLE NEWTON, M.D.,
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To one small people it was given to create the principle of progress. That people was the Greek. Except the blind forces of Nature, nothing moves in this world which is not Greek in its origin. So wrote Sir Henry Sumner Maine.

Francis Galton says, "The average ability of the Athenian race is, on the lowest possible estimate, nearly two grades higher than our own—that is, about as much as our race (the English?) is above that of the African negro.

While these statements are quite frequently acknowledged to be true, and while the words of Mr. Gladstone that "the ancient Greek brain represented the high-water mark of human intellect from which the tide is now steadily receding" are also undisputed, the debt that the world owes the Greeks as the founders of medical science is not so generally appreciated. Nor is the remarkable degree of perfection which the theory and practice of physic had attained four centuries before Christ by any means generally understood at the present day.

Prof. Gomperz in his philosophical work "Greek Thinkers" has laid before us the status of medical learning and practice in the days of Hippocrates, and has, with rare acumen and great learning, afforded an insight into the actual condition of medical matters at that remote period which is truly inspiring. Not only has he marshalled his facts with logical accuracy, but with the unerring insight of the true historian,—he has drawn from them inferences of wide application, and has shown from whence sprung much of the truth and error that have characterized medical teaching for centuries and have left their impress on the medical thought of to-day.

He says the threads that bind antiquity with modern times lie open to view, and our present inquiry will have to take them in account. He quotes Herodotus as ascribing the supremacy of the Greek intellect to the fact that Hellas "enjoys by far the best tempered climate," evidently, we might say in passing, a premature deduction inasmuch as with no appreciable change, that we were aware of, in its climatic conditions Hellas no longer produces even a high grade of contemporary intellect.

Prof. Gomperz attributes the development of the Greek intellect in great part to "the sleepless critical spirit which shrank from no test of audacity," and this spirit he says was due to three causes. The metaphysical and dialectical discussions practised by the Eleatic philosophers and the semi-historical method which was applied to the myths by Hecatœus and Herodotus. The third cause is to be traced to the schools of the physicans. "One man practised in medicine verily outweigheth many other men," "this compliment," he says, "greets the medical profession at the rise of Greek literature. Posterity would not recall it."

He tells us of the fascinating picture of the earliest practice of medicine in India as depicted in the extent "Song of a Physician," who makes his jovial way through the land carrying his figwood chest of drugs, bespeaking for his patients recovery

*Presidential address before the Orange Mountain Medical Society, January 12, 1906.

and for himself a rich reward because he lacks "cob, cow, and coat." He is a slayer of demons, and diseases fly before his drugs as before the bailiff's grasp.

Gomperz alludes to the Indian art of medicine as portrayed principally in the Artharva-Veda (folk lore) and remarks that some of the rules of practice there laid down still obtain. As for instance, the use of the plant bright eye in ocular diseases, because a black speck present in its flower suggested the pupil of the eye, and the use of the blood stone or hematite to stop hemorrhage. The Egyptians maintained that the blood of black animals would prevent gray hair, and in modern Syria the ancient Indian doctrine is still held that jaundice may be expelled into yellow birds.

Even in those early days the art of surgery maintained its present excellent reputation of eschewing all forms of superstition and philosophical conjecture and achieving practical results by direct methods. He says "we are positively astonished at its (surgery's) high degree of cultivation amongst the nations of antiquity, and even in prehistoric times, as well as among the savages of today. They did not even shrink from operations of so bold a character as trepanning or the cesarean section." It has, of course, been generally believed that the latter operation was originated at the birth of the great Cæsar, who, we are informed, was "ripped untimely from his mother's womb." The operation having received its name from him, was naturally supposed to have been first practised in his case. A very obvious error.

The profession of medicine was fully recognized in Greece at a very remote period, and was in many cases liberally rewarded. The annual salary of Democedes of Croton from the city of Athens, the commonwealth of Aegina, and the tyrant of Samos, was 8,200, 10,000, and 16,000 drachmæ, or francs, a princely income when we consider the much greater purchasing power of money in those days. Democedes was afterward captured by Darius, King of Persia, where we presently find him seated at the royal table and acting as confidential adviser to the king; so "popular" had he become with the monarch that the Egyptian body physicians who had hitherto enjoyed the royal favor were utterly discredited and were even in danger of their lives. So about the middle of the fifth century before Christ Anasitus, a Cypriot physician and his brothers who had been active during the siege of Edalion by the Persians, enjoyed the highest honors and lived in princely style.

There were the swindlers and charlatans posing as doctors in their day as well as ours, and as Boas tells us patent medicines were sold in Greece in remote antiquity much as they are now in America, whether the formulæ of the contents were printed on the label of each bottle or package we are not informed.

Gomperz says, in reference to the quacks, that "the conscience of the profession, composed for the major part of honorable and capable men, suppressed if it did not expel those parasites on a noble tree."

The Hippocratic oath, a document of great antiquity, is a monument of the highest rank in the history of civilization, and the fact that succeeding classes of graduates in medicine have taken this oath, practically unmodified for over twenty centuries, before taking their places in the world as physicians, is a tribute to the sagacity, the sense of professional honor and responsibility, and the clear thinking of the Greeks, which needs no commentary from us. Prof. Gomperz remarks in regard to this oath "that in the complete absence of state control it formed the one public set of regulations for the practice of the art of medicine." Its spirit is exemplified in many of the medical writings of the day in which "the same pungent satire is directed at the arrogance of ignorance as at the humbug of quackery." "Physicians who were such in name, but not in fact," are compared with the "mute persons" or supernumeraries of the stage. The courage of wisdom is contrasted with the foolhardiness of ignorance. Touting for fees is deprecated, and a consultation in all doubtful cases urgently enjoined. The following quotation from these writings shows admirably the spirit of Greek, as well as of all true medicine: "Where there is love of humanity there will be love of the profession." It was called an act of deceit to dazzle the patient's eye by brilliant but unnecessary diplays of skill. Physicians were discouraged from holding public lectures in order to increase their reputations, and lectures containing quotations from the poets were especially condemned. Those who pretended to infallibility in detecting the slightest departure from their prescriptions were laughed at, and finally precise rules of personal conduct were laid down for the doctor. He was, as in these antiseptic days, commanded to observe the most scrupulous cleanliness, and was advised to affect an elegance without any signs of luxury, even down to the detail that he might use perfumes, but not in an immoderate degree.

Hippocrates was born in 460 B. C., on the island of Cos, and is justly entitled to the appellation "the Great" conferred upon him by Aristotle. A large collection of writings have been ascribed to his pen, evidently the work of many physicians whose identity remains unestablished. Gomperz, however, assures us that with a few inconsiderable exceptions, all the parts of the so-called "Corpus Hippocraticum" were written before the close of the fifth century B. C. It was, says Gomperz, "An age of the most rapid intellectual development, and of the most facile circulation of ideas," and of a great "reciprocal influence of medical and philosophical thought." "The elimination of the superstitious element from therapeutics went hand-in-hand with the release of the nations of antiquity from this general burden of primitive superstition."

Our author points out that the benefits undoubtedly derived from treatment in the priestly health resorts of those times were in part, at least, due to the salubrity of their situations as well as to the rational methods of treatment employed. He instances Epidaurus, the most famous of these resorts, which was situated in a hilly country in the heart of beautiful pine woods at no great distance from the sea. It was sheltered on the north by a range of mountains, and, with its precious springs of water, fulfilled all the requirements of a modern sanatorial establishment. It possessed a racecourse and a theatre, the stately ruins of which still remain. Naturally, superstition and priestly interference then as now obscured the true therapeutic value of these resorts, and in the detailed accounts of the cures obtained there the dietetic and therapeutic factors were omitted either from oversight or design.

However, the physicians of Greece shared with her poets and sculptors the same keen insight and the faithful reproduction of the object studied. In other words, Greek medicine was preeminent and a pattern to all succeeding ages, because Nature was carefully and truthfully studied and the results published, stripped of the fanciful and glittering flights of the imagination which obscured and mis-

interpreted the most common phenomena. It is not claimed that error did not creep in and that the philosophical spirit of the age did not allege many untenable and unscientific explanations for physiological and pathological phenomena.

The doctrine of the four humors of the human body, the blood, the phlegm, the black and yellow bile, corresponding in number to the four alleged elements, fire, air, earth, and water, seems to have been universally accepted in Hippocrates's time, and the disorders, changes, and altered proportions of these humors were for centuries asserted to be the causes of health and disease in man. Other beliefs equally untenable were taught and many absurd rules of practice followed, but as Professor Gomperz stoutly maintains, and as all students of this brilliant period and this remarkable people seem to agree, the progress made by the Greeks toward the establishment of a rational and scientific system of medical study and practice was, considering their limitations and the crude state of general knowledge, simply marvelous; and as we have hinted above, has placed all succeeding ages of medical men and the world at large under an obligation of the greatest magnitude. The reason for this dazzling result is that the Greeks studied nature; and, shaking themselves free from a load of superstition and ignorance almost inconceivably great, by turning their alert and polished intellects to the study of nature and her methods, achieved a success which was indeed phenomenal.

No real advance has ever been made in medicine by any other means, and no advance is possible by any other. The inductive method of reasoning must necessarily obtain in medical study, and to a certain extent is justifiable, but only by actual experiment and demonstration can real advance take place. Theories come and theories go. Divine revelations, exclusive systems, miraculous cures, all play and have played their little parts in medical history, but the good old Greek system of studying mankind as he is and interpreting the phenomena of health and disease as they appear to a truthful and unbiased mind is the only method by which medical or any other knowledge can be advanced. Fortunately to-day there are indubitable signs that medicine will in future be studied as the Greeks studied it. That the whole question of life, development, growth, and decay will be submitted to an exhaustive and scientific inquiry which must result in the greatest benefit to the race.

This method of considering the normal physiological existence from birth to death is returning after over twenty centuries spent in a more or less desultory study of symptoms and searching for remedies. No comprehensive view of the body and its functions seems even now possible to many students. False and foolish notions and improper methods of living and of education and development are still rife amongst the learned and the simple, the laity and the profession, but, thank God! a brighter day is dawning and we are getting back to the good old common-sense methods pursued by the father of medicine and his disciples four hundred years before Christ.

"We note in passing that the treatise of Hippocrates, 380 B. C. (on Masturbation), which ascribed the chief causal rôle to the spinal cord and gave it a fatalistic tone, was not excelled in acumen by any work upon the subject until the epoch-making treatise of Tissot in 1760." (Stanley Hall, Adolescence, Vol. I., p. 432.)

The fundamental rule not only of health but of education in those days was the synchronous development of mind and body. If physical education is so disastrous as some would have us believe, why it that the highest development of the intellect was coexistent with the highest physical development? Why is it that the Greek mind was not encased in a feeble and ill-developed body, if, as we are told by many *soi disant* authorities on such matters, the highest developed body is antagonistic to the best mental development? Why did those astute old Greeks not discourage instead of encourage bodily excellence and physical prowess? We never read that they advocated effeminacy or deplored the love of youth for out-door sports. On the contrary, among the brightest and best of these great men the crown of the successful athlete at the Olympian games seems to have been held in the highest honor and to have been as greatly esteemed as the prizes given for success in poetry or sculpture.

Whatever else may be said about these worthies it cannot be alleged that they were effeminate or one-sided. They were not dyspeptics or faddists. Nor did they evince that predominant trait among many writers of the present day to make the facts fit their theories. On the contrary, they studied Nature's ways and mankind as they really were. They appreciated the need of bodily exercise and delighted in physical beauty. They developed the muscles and the endurance in a way that has perhaps never been equaled, unless by the famous Roman legions, that conquered the world. And what was the result of the Grecian method of education? The greatest intellects the world has ever seen and the most magnificent human beings that ever existed—while modern therapeutists spend their time endeavoring to find remedies for the diseases due to gluttony and sloth, the Greeks insisted that man should use all his faculties in an appropriate and fitting manner if he wished to preserve them. While we, eaten up by luxury and self-indulgence, endeavor to find ways in which a man may circumvent Nature and transgress her laws with impunity, to the direct and logical mind of the Greek such a procedure was unthinkable. While we feed our patients with pepsins and predigested foods, the Greeks insisted upon simplicity in diet. While we distort the human frame divine by such absurdities as corsets and high-heeled shoes, the Greek studied Nature and did not endeavor, like the Chinaman and the American, to improve upon her. The beautiful human foot was admired by the Greek and preserved in its beauty and symmetry. What do we do to it? We have even gone so far as to pretend to admire obesity because so many of our slothful and gluttonous people are absurdly fat. To the simple, direct, common sense of the Greek such an incongruity was impossible.

However, let us return to our historian. He discusses at some length various of the books which constitute the "Corpus Hippocraticum." The author of a work in four volumes entitled "On Diet" says in the conclusion of his preface, "I contend that he who will write correctly on the subject of human diet must first of all know and understand the nature of man. Among his other demands this author insists that a knowledge must be had of the constitution of all food stuffs and drinks, and a comprehension of the far-reaching contrast between work and nutrition. "For the performances of work," he says, "are directed to the consumption of what exists, and food and drink are intended to replenish the void thus created."

The fundamental condition of health is a correct proportion between work and nutrition in view of the constitution of the individual and of the dif-

erences of age, season, climate, and so forth. Except for the one factor of the individual constitution, good health, in the opinion of this author, could be preserved from all disturbances. He then dilates upon a fanciful description of the two underlying elements of animal life which he ascribes to fire and water. His correct deduction from this erroneous theory shows the superiority of his observation over his theoretical reasoning. Similar observations upon the evils of overeating have been made by Euryphon, the head of the Cnidian school, an older contemporary of Hippocrates, who conjectured that the causes of illness lay in a surplus of food. And Herodicus, another Cnidian, who said that men fall ill when they indulge in food on insufficient exercise.

The author of "On Diet" speaks of the belly as the universal "storeroom which provides for all and receives from all." He also speaks of the steady ceaseless "transformation" of matter and reduces all "death and decay" to "combinations and separations," and relates at least one original experiment, namely, that of artificial vomiting in order to test the varying digestibility of foods simultaneously consumed. Thus he antedated and set the fashion for the prevalent test breakfast. In a work "On Dreams" certain of these were traced to overfeeding, and the treatment recommended was an aperient.

Gomperz then discusses a treatise "On the Muscles" and describes the author as a practitioner "who has seen much and observed keenly as long at least as his faculties of sight and observation were not obstructed by preconceived opinions." He was the first to recognize that the so-called spinal marrow is entirely distinct from the common marrow of the bones, that it possesses membranes, and is related with the brain. He also had seen cases of suicides who had attempted to cut their throats and had lost the power of speech by penetrating the trachea and allowing the escape of air. Speech had been restored by closing the wound; from this he rightly drew the conclusion that the power of speech depends upon the proper passage of the air through the trachea and larynx. He also performed various experiments upon the coagulation of the blood, and studied the composition of various tissues of the body by boiling them and noting the different effects of this process upon them.

He then, after the manner of the day, became involved in a learned philosophical dissertation upon the wonderful number 7, and declared that no eight-months child can live. A superstition still extant. Among other things, he claims that abstention from food and drink beyond seven days must be fatal, either within that period or, as he naïvely added, at some subsequent time. Even those who, after the expiration of seven days, desisted from this method of suicide, suicide indeed being by no means rare in antiquity, were, according to the author of "On the Muscles," irretrievably lost, for their body had become incapable of assimilating nourishment. Gomperz adds: the vigor of our author's thought did not save him from the spell of number, and in other directions, too, he succumbed to the wiles of the imagination.

In speaking of the real progress which medicine made in spite of the all-pervading nature-philosophy, the reverence for numbers, etc., Gomperz says: "The apprentice years of the mere collection of facts were followed by the Wanderjahre of vague, restless speculation. These had now lasted long enough, and it was time for the Meisterjahre of quiet, methodical research to succeed, if science was to acquire steady and sedentary habits, instead of losing itself in a maze of phantasies, revolving in idle circles. It is to the undying glory of the medical school of Cos that it introduced this innovation into the domain of its art, and thus exercised the most beneficial influence on the whole intellectual life of mankind. "Fiction to the right! Reality to the left!" was the battle-cry of this school in the war they were the first to wage against the excesses and defects of the nature philosophy.

It is certainly amusing to find in this collection of writings a book "On Old Medicine," whose author condemns the "new-fangled" art of healing. Among other things this champion of the old régime gives is the following: "But the healing art possesses all things from of old, a principle, and a beaten track along which in the course of ages many splendid discoveries have been made and along which the science will be perfected if men of adequate talent, equipped with a knowledge of the discoveries made hitherto, take these as their starting point, and set out thence on further inquiries. He who rejects and despises all this, however, and undertakes his investigations on another road and in other forms, and claims to have discovered something, he is deceived and deceives himself, for it is impossible." Truly a conservative man and a believer in the established order.

His treatise, like so many of the others, deals mainly with dietetics. He refers to the improvement and elaboration of the cuisine, speaking of the transition from the coarse nourishment which men shared with the brute to refined cookery and varied diet then in use, and characterizing the latter as "a great invention, elaborated and perfected in the course of centuries with no mean display of intelligence and imagination." He adds, "one must aim at a standard, but a standard weight or number which shall serve thee as a sure guide thou shalt not find, seeing that there is no other than the sensibility of the body."

He was indeed a wise man and a correct reasoner, if one admits his premises. In another place he says, "But I believe that all that sophists or physicians have said or written about nature belongs less to the art of medicine than to that of painting." . . . "There is a long road still to be traveled before that degree of erudition is reached which shall know what man is, by what cause he was created, and all else to the least detail." Prof. Gomperz examines the writing of this author in considerable detail and comments with learning and skill upon the entire trend of medical and philosophical thought of the time. He says that the false deductive method was buried in the ruins of the philosophical theory of medicine and the correct inductive method was borne in on the triumph of Hippocrates.

The undying glory of the School of Cos does not rest in the selection and use of methods of research better in themselves or nearer to ideal perfection. Their chief title to esteem is rather the insight they displayed in perceiving that the premises for the application of the deductive method were not yet extant, that they had not even come in view, and that fantastic conceptions were taking the place of requisite and valid inductions." The pioneer virtues which distinguished the Coic masters from their opponents were a self-abnegation and a timely renunciation of ambitions, fascinating enough and even exalted in themselves, but at that era and long afterward out of reach, and these virtues entitle them to our ungrudging admiration and imitation at this day.

We recognize their superior merit in having de-

veloped with tireless powers of observation and extraordinary faculties of clear sight and strong sense, those branches of the art of healing which were capable of extension without digging their foundations more deeply. Above all, we may specify their contributions to symptomatology which by their endless supply of nice distinctions and acute observations are a source of pleasure and instruction to modern students of that branch of learning. Unfortunately, however, they could not wholly renounce the construction of comprehensive theories. To the absurd doctrine of the four cardinal humors they were irrevocably committed. However, in the main their teaching and doctrines were founded in reason and common sense; at an early date they took as strong ground in opposition to the supernatural theology as they had against the fantastic excesses of nature-philosophy on the extravagances of the metaphysical theories. In the book "On Water, Air, and Sites," one of the most remarkable of the Hippocratic collection, an energetic protest is uttered against the assumption that the so-called "feminine disease" of the Scythians was due to a divine visitation, and in almost the same words the same notion is combated in regard to epilepsy, in the book "On the Sacred Disease." By this name epilepsy was designated on account of its alleged divine origin. In both cases the denial of divine or supernatural intervention was accompanied by the assertion of the compatibility of a uniform obedience to law in all natural phenomena, with a belief in the divinity as the source of all of these phenomena. "Everything is divine and everything is human," says the author of "On the Sacred Disease," and he added that it is unreasonable to call one disease more divine than another. This writer displays a strong antipathy to quackery, and alludes in scathing terms to the "windbags and street-corner prophets" who undertook to cure diseases by the practise of purifications and incantations, and who sought to conceal their own ignorance and impotence "under the mantle of the divine," and who might be shown in the clear light of day to disbelieve the truth of their own teaching, much, indeed, like the pretenders and charlatans of our own day. This treatise also claims our consideration for its reaffirmation of the significance of the brain in the physical and especially in the psychical life. In fact, its author had apparently made the important discovery that epilepsy springs from disease of the brain.

Gomperz concludes this masterly chapter of his work as follows: "Nothing is lacking to prove the contention from which we set out, that the study of medicine was the source of the third great wave of criticism which poured its fertilizing stream over the fields of Greek learning. . . ." We are reluctant to part from the precious collection of the Hippocratic writings which are still so little known and appreciated, without offering a few more proofs of the sound scientific spirit which penetrates a considerable portion of them. One of the most generous marks of that spirit is an appreciation of the great thoughts originating from an opposite or hostile school. The author of the work on "Diet in Acute Illnesses" displayed a genuine spirit of research in his endeavor to strengthen the doctrine which he was combating when he wrote in one place, "My opponents' view will be assisted by the following consideration. . . ." No less sturdy and incorruptible was the instinct for the truth evinced by the author of the work "On the Joints," which Littré characterized as "the great surgical monument of antiquity and a model for all future ages." The writer, a physician of noble mind and lofty thought, did not shrink from recording his own failures for the information of his fellow-investigators. He says, "I have written this down deliberately, for it is valuable to learn of unsuccessful experiments and to know the causes of their non-success." In another place, "It may be urged," he wrote, "that such questions lie outside the precincts of medicine, for what profit is there in a further study of cases that have already become incurable? Such arguments I am sure are very wide of the mark. In curable cases all pains must be used to prevent their becoming incurable; but incurable cases must be recognized as such, in order to save the sick man from useless mal-treatment."

Nor was he otherwise disposed to spare his own exertions. He had the joy of work which is a true mark of genius. In this way he extended anatomical research from the human to the animal creation; he compared the structure of the human skeleton with that of other vertebrate animals, and two passages in his work speak so eloquently of the grandeur of this attempt that we do not hesitate to entitle him an early, if not the earliest, pioneer of comparative anatomy. But we conclude by citing an important generalization due to the same powerful intellect, the brilliancy of which is testified by the wide range that is described, by the evidence constantly increasing of the truth of its contents, and by the deep significance of its consequences. We refer to the maxim touching the necessity of function for the preservation of health in an organ.

"All parts of the body," he wrote, "which are designed for a definite use are kept in health and in the enjoyment of fair growth and of long youth, by the fulfillment of that use and by their appropriate exercise in the employment to which they are accustomed. But when they are disused they grow ill and stunted, and become prematurely old."

Verily "the new things" in medicine are the things which have been forgotten. The wisdom, erudition, and industry of these pioneers of our art excite our wonder and our admiration, and scarcely less does the clear and logical exposition of these remarkable men and the influence which they have exerted on the intellectual development of mankind call forth our gratitude to Professor Gomperz, from whose great work I have so freely borrowed.

A PLEA FOR MORE CONSERVATIVE EXAMINATION IN SUSPECTED CASES OF PULMONARY TUBERCULOSIS.

By CLAUDE C. KEELER, A.M., M.D.,

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The time spent in examining cases of pulmonary tuberculosis is indeed very limited, more so among the general practitioners than among the specialists, and, as a result of my observations, gained while examining a number of such cases, I have come to the conclusion that the time spent in former examinations of such patients was, on an average, from ten to thirty minutes. Of course, as we well understand, in cases that are well advanced into the second stage of the disease, it requires but little time to pronounce a diagnosis. It is not our intention to discuss the latter stages but merely to take up the earlier stages of this dreadful malady.

Before proceeding farther on this subject, we would call your attention to a few cases which recently came under our consideration: Mr. H., from southern Wisconsin, a lawyer by profession, thirty-six years of age, had been under treatment by his

family physician for seven months previous to his coming West. His first symptoms, upon consulting his physician, were: Occasional, slight, hacking cough, no expectoration; but, as usual, the cough was not given a thought; he had been having considerable distress in his stomach about an hour after eating; at times anorexia; or, if the patient had a good appetite, it was gratified at the expense of great suffering. It was for this gastric disturbance that he consulted his physician, who informed him that he had only a slight attack of indigestion, and who prescribed without making any further examination of him. The patient improved for a few weeks, but was not at any time free from his symptoms, and he informed me that at no time during his entire treatment were his pulse and temperature taken. It was in the late fall that he had occasion to visit Denver, and it was while in this city that he came under our observation. It had been about seven months since the appearance of his first symptoms, and he had lost about fifteen pounds. There was slight dyspnea, perhaps due to the altitude, but more likely due to the anemia that existed. We observed the following symptoms: Pulse rate from 80 to 115, and at times very feeble; temperature as follows: 7 A.M., 97°; 9 A.M., 97 2-5°; 12 M., 99°; 2 P.M., 100°; 4 P.M., 100 1-2°; 6 P.M., 99 2-5°; 9 P.M., normal; and at 10:30 P.M. it had dropped to 97 1-5°. He told me that he had lost considerable color during the past year, but had never suspected tuberculosis. Upon physical examination, the conformation of the chest was the first thing to arouse suspicion, the thorax being long and narrow, with comparatively wide intercostal spaces. The left clavicle had a tendency to stand out more distinctly than the right, with defective expansion at left apex. While the patient at no time complained of pain in the lungs, yet he told me that during the past sixty days, upon arising in the morning he would have a short spell of coughing, and perhaps one or two during the day, the expectoration having a glairy, sagolike appearance. It required ten different microscopical examinations of the sputum before we were able to detect the tubercle bacilli. Diagnosis: incipient tuberculosis. We immediately put the patient under treatment, and at this time cough has entirely ceased and he has gained in weight. Under proper care and treatment we see no reason why this case cannot make a complete recovery.

Mrs. C., from a small town in eastern Kansas, aged thirty-two, the mother of two children, was sent to Colorado by her physician, for quick consumption. She had recently recovered from an attack of pneumonia (I think lobular), but had not been in good health since her recovery; coughed a great deal, with free expectoration, the sputum in character being of a creamy pus, at times very offensive; there were slight chills and fever at different times during the day, anorexia, and she had lost considerable flesh. She told me her physician had never made a microscopical examination of her sputum. We examined the sputum at several different times, but failed to find the tubercle bacilli. Physical examination revealed a perfectly normal chest, with the exception of signs of cavity, which at times seemed to be empty, and in the course of several hours would fill up. We made a diagnosis of abscess of the lung and advised an immediate operation, which was refused. We put the patient on the tincture of chloride of iron and sulphate of quinine, together with antiseptic inhalations of carbolic acid, creosote, etc., and instructed her to keep out of doors as much as possible, with the result that an uninterrupted recovery followed.

Mr. A., druggist, single, aged forty-two, consulted me last April, giving me a history of having recovered from a siege of grip about six months previous; he had had a continual hacking cough since his apparent recovery, and was very susceptible to colds, which would aggravate his cough; he had slight attacks of indigestion, which would usually respond to treatment, until the past ten weeks, during which time treatment seemed of no avail. His former physician's diagnosis was gastritis, accompanied by bronchial irritation (which is very often the sequel of grip), and that he would probably obtain but little relief from the latter until spring had well advanced. He had always enjoyed comparatively good health up to the time of this attack, but he informed me that he had been rooming with a young man who was affected with pulmonary tuberculosis, and who had been compelled to leave the city. It was only a short time after his roommate's departure that he was taken down with this attack of grip, but still occupied the same room, and was confined to his bed for several weeks. At the time we examined him, he had practically a normal temperature morning and evening, reaching its maximum of 100 2-5° about 2:30 P.M. When he was free from his gastric symptoms his appetite was good; he slept well at night, with a coughing spell on arising; pulse, 90 to 120. There was nothing in the shape of his thorax to indicate that he was the victim of tuberculosis. We had this patient under careful observation for eight days, and finally made a diagnosis of incipient tuberculosis.

We could bring to your attention a number of other cases, but think the three above referred to are sufficient to give you a proper idea of the limited time spent in the examination of such cases. While it is true that the diagnosis of incipient tuberculosis is extremely difficult, yet at the same time the physician who is consulted by a patient who gives him the following symptoms: Attacks of acute indigestion, chronic bronchitis—with or without expectoration—anorexia, dyspnea, slight or no rise in temperature, tachycardia, little or no loss of flesh, etc., should make a very careful examination of the case. Should the patient give him only a few of the above symptoms, it should at least be sufficient to arouse suspicions as to the probable diagnosis. I do not mean to convey the idea that a patient with these symptoms is always afflicted with tuberculosis, but it is usually in patients in this condition that the earliest signs and symptoms are overlooked by the attending physician.

Several examinations should be made on different days and at different hours of the day, in order to get the range of temperature and ascertain the correct pulse rate morning, noon, and night. A vast majority of the profession, upon having their suspicions aroused in regard to a possible case of pulmonary tuberculosis, will perhaps make a hurried examination, of a few moments' duration, without as much as baring the chest. With such an examination it is absolutely impossible to ascertain the conformation of the chest; neither will palpation, percussion, or auscultation be at all satisfactory; the examiner, being unable to find dullness on percussion, or râles by auscultation, informs his patient that his lungs are in a perfectly normal condition, when in reality he is the victim of incipient tuberculosis. A number of cases of advanced tuberculosis are due to the negligence of physicians, who, upon their first examination of the patient, fail to recognize the disease, and it is only in the course of a few months that your patient again consults you, but now with well-marked signs of tubercular infection. Indeed, the patient's chance for recovery at this time is much less than it would have been had the disease

been properly diagnosed a few months previous, and the patient been given proper instructions in regard to his condition, together with a rational line of treatment.

While it is very true that there are countless numbers of these patients who do not consult their physicians until the disease is well advanced into the second stage, yet, on the other hand, there are thousands who do consult their physicians upon the earliest manifestations of ill health, and it is in this class of patients that physicians make their greatest errors in diagnosis, as they look upon the cases lightly and do not devote sufficient time to the physical examination to warrant them in making a correct diagnosis. I do not mean to make the assertion that the diagnosis should be made from the physical signs alone, but that they do indicate the condition of the organs examined, and from the consideration of these physical signs, together with the constitutional symptoms and history of the patient, the diagnosis is made.

To properly understand the physical signs that are caused by abnormal conditions of the thoracic viscera, it is very essential that the physician should be able to recognize and thoroughly understand the normal physical signs. We will not monopolize the space or time in discussing the normal chest, but will take up a few of the abnormal conditions usually present in the earlier stages of pulmonary tuberculosis.

In making the physical examination, the patient should be stripped to the waist, and may be examined in either the sitting, standing, or recumbent position, but it is very important that the position be a comfortable one. In the majority of cases you will find a local retraction of the chest wall, which is generally due to contraction or collapse of the lungs, and is usually seen at the apices, or, if the retraction be at the base, it is generally the result of empyema or adhesions. The shape of the chest is often suggestive, although pulmonary tuberculosis may be met with in any type or build of chest; but in the great majority of cases the thorax will be long and narrow, the costal angles very narrow, and the ribs more vertical in direction, with very wide intercostal spaces. At times the lower sternum forms a deep concavity, the so-called funnel breast (Trichter-Brust). One of the early and most important signs is defective expansion at one apex. A great amount of good has been accomplished by the examination of the chest with the *x*-ray, as the normal lung tissue is easily traversed by the ray, and should there be any change in density in the lung tissue it is indicated in the fluoroscope by darker or lighter areas. The diaphragm is easily seen during respiration, and, normally, should descend from one and one-half to two and one-half inches in respiration; and frequently limitation in the excursion of the diaphragm is one of the earliest signs of pulmonary tuberculosis.

Hippocrates described the physical signs of tuberculosis in the following terms: "The forms of body peculiar to subjects of phthisical complaints are the smooth, the whitish, that resembling the lentil; the blue-eyed, the leucophlegmatic, the reddish, and that with the scapulæ having the appearance of wings."

The flat chest with depressed sternum is very commonly seen in tuberculous patients, but, as we said before, there are many individuals with perfectly normal chests who fall victims to the disease. The old idea of hereditary consumption must be relegated to the shelf, and in its place comes the more advanced theory that it is purely an acquired disease. The scrofulous or tuberculous diathesis is now regarded only as an indication of a type of conformation, in which the tissues are much less capable of resisting infection.

Mahomed and Galton, in making a study of the composite portraiture of pulmonary tuberculosis, have separated two types of face: One coarse-featured and broad, the other narrow and ovoid; but these types are by no means characteristic, as they may again take the same number of patients and find an altogether different type of face.

In making the examination of a suspected case of pulmonary tuberculosis, it is very essential that the physician should devote considerable time to palpation, percussion, and auscultation. Palpation will enable the observer to denote the irregularities in form, local expansion, local points of tenderness, pain, etc. It must be remembered that the intensity of the vocal fremitus varies greatly in different individuals, and is much more marked in men than in women, and that it is diminished by anything which interferes with the transmission of vibrations to the palpating hand; as in bronchi partially filled with mucus, very thick chest-walls and pleural effusion. The fremitus is greatly increased by consolidation of the lungs, as it makes a much better conducting medium, and it is important in making a comparison of the apices to bear in mind that the fremitus normally is much stronger over the right than the left. By placing the fingers in the infraclavicular space, and the thumbs in the supraclavicular space, and standing behind the patient, the observer can get a fair idea as to the relative mobility of the two sides, and should there be deficient expansion at an apex, even before dullness is at all marked, it is an indication of disease. Very accurate information can be obtained by percussion if it is properly practised; but the technique of percussion is by no means an easy art, and a great many more mistakes are made by this method of examination than by any other. The mediate method of percussion is much more satisfactory than the immediate, as it better enables one to distinguish between the different graduations of pitch. The lungs should be percussed during both inspiration and expiration, and should you be able to detect dullness it is an indication that the lung tissue is encroached upon by solid organs; or, in cases of pleurisy, with effusion, and enlargement of the heart, spleen, or liver will cause dullness on percussion.

In the very earliest stages of tuberculosis dullness is detected at the apices of the lungs, due to the presence of tuberculous deposit. The flat percussion note is always an indication of disease, with the exception of when the percussion is made over solid organs; but the flat percussion note is seldom recognized in the earlier stages of tuberculosis.

For the diagnosis of incipient tuberculosis, auscultation affords by far the most satisfactory method at the disposal of the physician, but it is important that the observer should be familiar with the normal pulmonary murmur, and his sense of hearing be at the best. Râles are never heard in the normal chest, and the character of the râle always depends upon the point at which the sound is produced. Crepitant, subcrepitant, and mucous or bronchial râles, are all noted in pulmonary tuberculosis, but the crepitant râles are most frequently heard in incipient tuberculosis. They are the finest of all râles, and have a dry, crackling sound, which is heard only at the end of inspiration. It is often a difficult matter to accurately determine the character of the râle, and if the physician is not accustomed to such examination, and his hearing is not well trained, it is quite likely that the râles will not be heard. Subcrepitant râles are much easier to distinguish than

the crepitant, as they are heard both during inspiration and expiration. They are in character fine and moist, and usually disappear when the patient coughs. The mucous or bronchial râles are due to the same cause as the subcrepitant, with the exception of the point of production being in the large bronchi, which makes the sounds much more audible.

I will give, as my conclusion, that if the profession will spend sufficient time in the examination of suspected cases of incipient tuberculosis to warrant them in making a correct diagnosis, at the end of twenty-five years the mortality of this dread disease will be reduced to a very low percentage.

Finally, I want to add that should the physician, after a thorough examination of a patient, entertain a doubt as to the diagnosis of the case, he should be seen by one who is familiar with the earliest manifestations of the disease, and by one who has become accustomed to the treatment for the relief of such conditions.

Academy of Medicine Building.

INTRALIGAMENTOUS DRAINAGE FOR NON-SUPPURATING PARAMETRITIS, WITH DESCRIPTION OF TECHNIQUE.

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On May 26, 1900, I published an article in the *Medical News* on "A New Operation for Retroperitoneal Drainage of Pyosalpinx." Since then I have employed the method for a variety of purposes, have had no deaths, and, so far as I know, no recurrence of suppuration in any case operated on. In this paper I will speak of its use in parametritis, and will give some indications for operating in this condition, which differ somewhat from those in use. I will not weary you by going over in detail the signs and symptoms of parametritis, but will dwell only on such points as are but little known or new.

Parametritis is a cellulitis situated between the layers of the broad ligaments, the sacro-uterine ligaments, or, rarely, between the uterus and bladder. The variety which concerns us especially and which is by far the most common is that of the broad ligaments. If, after an abortion or confinement the patient is seized with a chill, rise of temperature, and a mass can be felt to one side of the uterus extending rather low down, and the induration joins that of the uterus on one side and the pelvic wall on the other, we have to do with a parametritis. This may resolve, become chronic, or suppurate. If there is an intense septic process the mass will enlarge, invade the other ligament, and not rarely the sacrouterine ligaments, and other pelvic cellular tissue. It also spreads to the neighboring peritoneum, tubes, ovaries, and bladder. It is this extension, with its great possibilities for permanent harm to the pelvic organs, that I design to avert.

In chronic parametritis there is a hard, somewhat tender mass between the layers of the ligaments which shows very little inclination to resolve; and even when it does, leaves the parts thickened, inelastic, and tender. The patient in the meantime is suffering from a low grade of sepsis, which greatly undermines her health. I have seen such cases confined to bed for months under treatment with only a partial recovery at the end. Sometimes there are small collections of pus in the center of these masses, which remain quite unsuspected by the gynecologist, because the fever is insignificant or absent, and the mass is of stony hardness.

Now, if we turn to our textbooks for advice we find that these cases should be treated by various douches and applications, unless pus develops, as evidenced by fluctuations, or at least softening of the mass with recurring chills and fever. These signs and symptoms may occur when the abscess has burrowed its way close to the surface; but it may also burrow into an intestine, or bladder, or rarely into the free peritoneal cavity. I claim that the diagnosis of a small collection of pus in the center of a hard mass, often the size of an apple, cannot be made unless (which is rare in the chronic cases) chills and fever lead one to suspect its presence.

The indications for operation (in the acute cases) which I advocate are: Temperature over 101°F, particularly if the pulse rate be high, chills occur, and the patient has a septic appearance. Cases in which on the first visit there is a small swelling, and on the following day a larger one, showing extension of the process. I do not mean that these symptoms indicate that pus has formed; quite the contrary; my aim is to open and drain the parametrium before the process has had time to spread to the neighboring organs, on the same principle that we incise a cellulitis of the arm that threatens to spread beyond our control, whether pus be present or not.

My method of operating is as follows: After curetting the uterus the cervix is drawn toward the healthy side, and a bullet forceps inserted in the vagina to the side and slightly posterior to the cervix, so as to put the vagina on the stretch. An incision is made through the vaginal wall close to the uterus about three-fourths of an inch in length. Through this incision the forefinger is inserted, and, keeping close to the uterus, is pushed well up between the layers of the ligament into the hard parametrium and then outward, so as to open up the mass freely for drainage. Should the Fallopian tube be much swollen it is opened by means of a blunt forceps, under the guidance of the index finger. A good-sized tube of large caliber is introduced either in the parametrium, or in the tube, as the case may be, and the operation is complete. If no pus is present a small quantity of bloody serous fluid escapes. I have never had to use an artery forceps, and have had no deaths following this operation.

Case I.—Miss S., on the third day after an abortion had been induced, developed chills and fever. When I saw her she had a temperature of 103° F., and a pulse of 110; vaginal examination elicited a hard, tender mass in the right broad ligament. I urged immediate operation, which was declined. On the next day the temperature was 104°, and the patient was delirious at times, and obviously in an intensely septic condition. The mass in the ligament had increased somewhat in size. I then obtained consent to operate, which I did according to the above-described method. On the next day (the fifth after the abortion) her temperature rose to 105°; on the sixth day pus began to come from the tube. On the ninth day the temperature was practically normal, with a free discharge of pus from the tube. After this the suppuration decreased rapidly, and on the sixteenth day only a few drops of pus came away; the hard mass in the parametrium had disappeared, leaving only a little thickening in its place. The tube was then removed, and the patient made a rapid and complete recovery. I examined her some time later and the only abnormality that could be felt was a small scar in the vagina. By the way, it is a constant rule that the

temperature rises the first day after operation, and then begins to subside, but the temperature does not become normal until free suppuration has been established.

I will give the details of only one acute and one chronic case, as the cases all run about the same course, excepting that some heal more rapidly than others. When the temperature drops to normal I allow the patient to get up, as the cavities drain better than in the recumbent posture. When we are called to treat a case of chronic parametritis the conditions are somewhat different, and we can take more time in deciding on an operation. I have treated such cases for months by pelvic massage, ichthyol and glycerin tampons, hot douches, etc., and obtained fairly good results, but the method is at best tedious, and uncertain in its results. It is now my rule to advise operation in all cases which have lasted one month without much shrinkage in the amount of the exudate. If the patient shows signs of septic absorption I urge operation at once.

Case II.—Mrs. M. had since her confinement suffered with a parametritis of both sides, giving rise to a temperature of 100° F., pelvic pains, weakness, lassitude, anorexia, etc. She had lost much in weight and was a semi-invalid when I was called in, two months after her confinement.

Vaginal examination showed a double parametritis, very hard, and moderately sensitive to pressure. I operated as previously described, leaving a tube in each broad ligament. The second day the temperature rose to 101.6° and for several days was slightly above normal; then suppuration set in and the temperature dropped to normal. She made an uneventful recovery. In some of my earlier cases I made the mistake of not opening the mass freely enough, hence only part of the inflamed parametrium was drained, with the result of a tedious recovery; and in one case an extension of the inflammation to the peritoneum, which gave rise to a pelvic abscess which had to be opened through the abdominal wall. The patient is now in excellent health.

In opening any inflammatory pelvic collection I would urge against the use of sharp perforators, scissors, etc., as they are liable to enter the free peritoneal cavity, and I have seen dangerous bleeding follow their use. The finger is decidedly the most accurate and harmless instrument that can be used, as it does not tear veins or arteries.

In conclusion, I would state that the operation is not dangerous, usually not very difficult, and the results are certain and satisfactory.

210 West Fourth Street.

FOOTBALL AND MORAL HEALTH.

By WILLIAM LEE HOWARD, M.D.,

BALTIMORE, MD.

As a physician who daily sees mental and moral instabilities—the result of indifferent fathers, coddling mothers, and complacent teachers I say to college authorities: Place no barriers, subjectively or objectively, against football. I know of many miserable beings who, had they been allowed, or forced, at school and college to play football, would have been men to-day able to give the world lifts in science and literature—individuals who are wrecks because they were not allowed to run the risk of a bruised limb, or to learn Nature's laws and of physiological growth.*

I have deep feeling in this matter, and say without reservation that a boy with a broken leg from football has a far brighter outlook for future success in life than the coddled son of a mother who will not look physiological facts in the face and learn that physical expression of activity is the only healthy channel for the expenditure of youthful energy, and if prevented this energy will be wasted along the line of immorality which will leave scars and wounds that last throughout a miserable existence.

I also frequently see that anti-social being—the effeminate male. Football in boyhood might have so developed certain brain cells as to have made him a social being.

To the pedantic college presidents I say that football is one of the greatest factors we have ever had in school and college for producing moral men. There is a tremendous force for moral health in football and all rough games.

The present conditions under which we live are full of hypocrisy and inverted modesty. The sublimest of Nature's laws have been ignored by uninformed teachers and hidden in a cowardly manner by those physicians who bend under the yoke of social convention or rest in the lap of silence.

Training for football teaches hygiene and instructs in the laws of Nature. Take a boy away from such influences and let him be under those who would substitute mild games and effeminate ideas, and under these conditions the youth cannot be himself. Dissimulation is the mother of lies, and as the teacher is, so will be the youth. Any college professor who has kept *en rapport* with the trend of student affairs realizes that the *morale* of the undergraduates is better than that of twenty years ago. This is not due to religious training or didactic moral instruction—in fact, there is little of these latter puritanical ideas left—but is due to football and all that its good influence implies. "The tone of morals and the character of the habits of the student at the present time is far above—in real excellence—the quality of the time of fifty years ago. There is less drinking and less of all forms of abominations now than in my day, and I believe that a great deal is due, not to any increase of piety among the professors, but largely to practice of the ball games of the present time, especially football, that it enables the boys to throw off an amount of steam and force and excitability in a legitimate way, which in my day was expended in illegitimate and unmanly ways, and ways of a sad moral influence." —A college professor who graduated fifty years ago, quoted by George Meyland, Director of Gymnastics, Columbia University; New York *Times*, August 12, 1905.

Explosion of physical energy is the birthright of every healthy youth, and any attempt, advisory or otherwise, to suppress this bubbling activity is an injustice to the growing man. Let rules be made governing the management of games and eligibility of players, but allow nothing that will discourage the cultivation of the normal spirit of resistance. A spirit of non-resistance under provocation or in athletic contests is unmanly, craven, and belongs to the unsexed. A boy to be a man must have the physical fighting instinct. If his school and college days are properly directed this instinct will be diverted to football, wrestling, or boxing, and rightly but roughly directed. We want no pietetic odor around boys' games, nor any atmosphere of timidity; but strong, virile, rough, dangerous, if you will, contests that make against moral and physical degeneration.

I am speaking only of the true spirit of resistance. The *sacra animi tempestas* of anger is an entirely different form of explosion. The youth with a quarrelsome, bullying nature finds no place

**Advanced Scholarship and Morbid Mental Conditions*, William Lee Howard, M.D. Medical Record, July 1, 1905.

in college games; he is an anti-social being who is either harshly and successfully corrected or ostracised. Football contests have been the channel through which normal youthful energy has been properly directed and many a youth made into a self-governing man who otherwise would have been a physical and moral nonentity.

Many unfortunate, pitiable beings have said to me: "Oh, doctor, if I had been allowed to play, swim, or jump with the boys! My father never told me anything of life and my mother would not let me play football at school. She was afraid I would get injured." College presidents should see this reverse side of the question. Nothing is more inspiring than excessive youthful energy. This must find an outlet, and the man will be according to this vent. Attempt to suppress this activity and the youth turns to sourness and underhand methods. Ignore this adolescent volcano and you get a flabby manhood or an effeminate being upon which immorality fattens. Better broken bones, physically crippled for life, yes, better death, than psychic perversion and bodily corruption.

It is the penetrating indirect effect of football that is the beneficial factor among the mass of students. This good influence extends to the preparatory schools, and has here great power for moulding the character of the youths. Here is established a standard of honor in breaking training. In learning to subordinate self to school interest there is eliminated those selfish traits so many boys are apt to bring from home. Both at school and college there is cultivated a feeling of emulation for strength and health which means the absorption of hygienic knowledge and physiological facts which no amount of didactic teaching or textbook reading would impart. The rough games at the high schools eliminate to a certain extent those physically unfit for college. Too many undeveloped youths have in former years gone from the coeducational high schools to colleges where their careers were shortened through inability to withstand the physical pressure.*

The beneficial influence of football is exerted on the student masses throughout the country; enters the homes where the school boys read with avidity the latest college news, and sends the blood rushing through the veins of the tired father. Both at school and college it brings out ideas of students in writings and debates who otherwise would be noninterested and slothful. Studies in strategy become interesting, and conversation is free from silly gossip and salacious tales. It offers opportunities for discussion which often arouse the slow thinker and the indolent. It teaches respect for deeds, for self-sacrifice and consistency of purpose. It teaches all students diet, regimen, and the necessity of keeping the body clear of its poisons. These important details in developing the youth into a healthy, normal man cannot be enforced with any regularity by rules laid down by college authorities. Youths, like their aboreal ancestors, hate the monotony of method. The standard set by the football squad is followed without any knowledge of compulsion, and hence has its excellent effects. Even the most slothful will sporadically indulge in some form of rough exercise, which acts as a purgative in eliminating through the normal vent excessive physical energy.

Sons, fathers, sisters, all receive physical benefit from witnessing football games. But it is in the student spectators that the healthful influence is mostly seen. The psychic excitement before the game which has kept the student mass keyed up to explosive tension has opened the veins and arteries, kept the heart rhythm vaccillating and the nervous system active. The training, the condition of the men, the reason for certain details of life are all actively followed. The physical relief which comes from witnessing the game is well marked. The howling, yelling horde of adolescents, their dancing and singing, grotesque costumes and ridiculous rhymes and the apparently mad leaders, are not signs of reversion to our savage ancestors but an expression of normal physical energy. This howling and physical expression of enthusiasm produces an erethetic intoxication at an age when every artery, vein and muscle can respond to tension and flushing, enlarging the caliber of blood vessels and forcing the blood to irrigate newly growing fibers and cells. It is a grand feeding process, and the psychic activities respond to the normal stimulus. "The soul is expanded, the brain receives the oxygenated blood, and new ideas are germinated, and the youth is safely on the physical and mental road to strong manhood" (President Stanley Hall).

Eliminate any of the risks in the game, suppress any of the powerful animal instincts which the game must bring out, throw a mantle of pedantic authority over the rules, and you will bring about an atmosphere of timidity and effeminacy which will rob football of all its direct benefit to our youths and young men.

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*"Sex Differentiation and Education," William Lee Howard, M.D., *New York Medical Journal*, February 20, 1904.

CHOREA AND SOME DISORDERS SIMULATING IT.*

By AUGUSTUS A. ESHNER, M.D.,

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There are many reasons for believing chorea to be an acute, self-limited, infectious disease, with possible relations to acute rheumatism. A noteworthy parellelism in prevalence exists between the two diseases, and symptoms of the one not rarely precede or follow, or even coincide with those of the other. Both are frequently complicated by endocarditis, and it has been possible by inoculation of lower animals with microorganisms cultivated from the lesion to produce the symptoms of both diseases. The two disorders may be viewed as representing different localizations of the same infection.

The neurotic temperament is an important predisposing factor in the etiology of chorea, and heredity, direct or indirect, plays a significant part in this connection. The individual attack seems at times to be precipitated by emotional influences, such as fright, but the association may be merely coincidental.

Chorea is especially a disease of childhood and adolescence. It occurs more commonly in females than in males, in the proportion of 2 to 1. It affects all classes of society, although it is more common in the city than in the country. It is rare in negroes and Indians. The largest number of attacks occur in the spring of the year.

The characteristic and usually the most obtrusive symptom of chorea is the irregular, jerky, disorderly, incoordinate, purposeless, involuntary movements, which are increased by excitement and are as a rule absent during sleep. They may be confined to one member or to one side of the body, or all of the extremities may be affected. The face rarely escapes. Like the articular involvement of acute

*Read before the Eastern Medical Society, January 19, 1906.

rheumatism, the invasion is usually gradual and progressive. At times the movements attain an extraordinary degree of violence, and they may cause death through exhaustion. Not rarely one or more members are the seat of muscular weakness. Some derangement of cerebral activity is commonly present, and it may assume any grade of severity, from mere irritability of temper to violent mania.

It may be inferred that the symptoms of chorea are brought about by disorder of the motor cells of the cerebral cortex, of bacterial or toxic origin. Under treatment with arsenic, and in the absence of complications, an attack of chorea usually lasts from six to ten weeks. The disease almost invariably terminates in recovery, but occasionally death is the outcome. The latter event may be due to visceral complications, but, as already stated, it may at times result from exhaustion consequent upon the violence of the movements. As in the case of rheumatism, recurrences are common, and they may take place in successive years.

Arsenic appears to act with the efficacy of a specific in the treatment of chorea, and in ordinary cases the administration of Fowler's solution of potassium arsenite, together with good food, ample sleep, fresh air, and freedom from strain and emotional influences, will be sufficient to bring about recovery. Some form of iron may be required in addition, and quinine may be a useful adjuvant. When the movements are violent and the mental perturbation is marked, the patient should be isolated and be kept in bed.

The diagnosis of chorea is, as a rule, easy. Occasionally it is exceedingly difficult. On the one hand the violence of the movements may cause confusion, while on the other hand the presence of paresis may suggest some form of spinal or cerebral or neural palsy. I have seen cases with general convulsive movements and elevation of temperature suggestive of uremia. When mental symptoms predominate care should be taken lest these cause the motor phenomena to be ignored or overlooked.

The term chorea should be reserved for the disorder that has been under consideration, so-called habit-chorea, postparalytic chorea, the various forms of hysterical chorea, and chronic progressive or senile chorea being distinct and differentiable affections.

So-called habit-chorea, or habit-spasm, is better designated spasmodic tic. The disease has no relation to rheumatism, it is unattended with visceral complications, and the duration is variable and indefinite. Whenever I hear that an attack of what is thought to be chorea has persisted for many months, I am at once suspicious of its being spasmodic tic. Moreover, the movements of the two diseases exhibit distinct differences. Those of chorea are often widespread and purposeless, while the movements of spasmodic tic are usually more restricted in distribution, and purposive. The former are somewhat bizarre in character, while the latter, although they may change their seat from time to time, exhibit a tendency to be repeated. It is probably spasmodic tic that has given rise to the fallacious view that true chorea may have a reflex origin, as from eyestrain, the presence of parasites in the intestinal tract, abnormalities of the prepuce in boys and in girls. Neither is spasmodic tic specifically amenable to treatment with arsenic, although tonic medication of any sort is useful here also. The best treatment, apart from that directed to improvement of the general nutrition is hygienic—moral and physical.

The athetoid movements attending various lesions of the brain have a peculiar vermicular character. They do not change their seat, and they are confined to parts usually affected by muscular weakness or paralysis, and often presenting exaggerated reflexes and spastic phenomena. In addition, mental impairment and other signs of cerebral disorganization are likely to be present. The disorder does not respond to ordinary therapeutic measures, although at times the movements can be modified by surgical procedures.

Hysteria may be attended with motor phenomena of a most diverse character, and these may at times closely counterfeit the movements of chorea. The differentiation occasionally is exceedingly difficult, but it will depend essentially upon the recognition of other hysterical stigmata.

The nodding and rotatory movement of the head associated with nystagmus, not rarely observed in rachitic children, may suggest chorea, but it usually occurs at an earlier period of life and is associated with other evidences of rachitis, with the subsidence of which the motor phenomena also subside.

A Case of Sporadic Elephantiasis.—George B. Lake relates the history of this case. The patient was a woman, fifty-six years old, and married, who complained of "dropsy, with a burning discharge from the legs." The family history was negative. The patient was born in northern Indiana and afterward lived in only that State and southern Pennsylvania. She was always very susceptible to the effects of poisonous plants. Nine years ago she had "sloughing ulcers" of the legs, which persisted for two years and finally healed up, as the patient believed, under the influence of a homemade decoction containing potassium iodide, sarsaparilla, guaiac, and various other substances. After the appearance of the ulcers, the legs were somewhat enlarged, and continued to increase in size. The patient denied all possibility of specific infection. The writer, however, believed the trouble to be of syphilitic origin. He therefore put the patient on potassium iodide and mercury internally, giving good-sized doses. Locally, an antiseptic, astringent, and anodyne dusting powder was applied, after the legs were washed with hydrogen peroxide. The further treatment was symptomatic. Treatment, however, proved unavailing. Hard nodules appeared in various places, broke down, and suppurated. They covered both hands, the face, and finally appeared over the whole body. The general strength failed rapidly. As the patient had habitually used morphine in large doses for twenty-five years, this valuable drug was useless in relieving the intense pain from which she suffered. Death finally supervened. The case was one of true sporadic elephantiasis. Unfortunately there was no opportunity for an autopsy.—*The Chicago Medical Recorder.*

Vascular Fasciculated Sarcoma at the Lower Extremity of a Movable Kidney; Lumbar Nephrectomy; Recovery.—Autefage and Danel report this case. The patient was a young woman, twenty-four years old. For five years she had shown symptoms of renal disturbance. Hematuria and pain dated back five years. The appearance of blood in the urine coincided with the crises of pain. For four years pyuria had been present almost continually. Two years later the patient suffered from polyuria. It was at first thought that the disturbance might be due to renal tuberculosis. Operation revealed the presence of a sarcoma. Nephrectomy was performed. The writer draws attention to the long period of evolution of the tumor. The mobility of the tumor was so great that it dropped down as far as the iliac fossa of the same side. The writer believes that such mobility has never been pointed out among the characteristics of malignant tumors of the kidney.—*Le Nord Médical.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

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PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE

New York, April 7, 1906.

TYPHOID BACILLURIA.

TWENTY-FIVE years have now elapsed since Bouchard of France made the announcement that in certain proportion of typhoid fever cases the urine contained microorganisms which presented all the morphological characteristics of the germs found in the blood of the same patients. The results published by subsequent observers on this subject showed considerable variation, however, and cannot be regarded as accurate, because it was not until 1895 that Escherich discovered *Bacillus coli communis* and separated it from *Bacillus typhosus,* and only in 1896 did Widal announce his method of separating Eberth's bacillus from the colon group. Since that time considerable progress has been made in the bacteriology of typhoid fever, and greater attention is now accorded to the urine as an important factor in the dissemination of the infection. But even during these later years much diversity of opinion exists as to the frequency of bacilluria in typhoid fever, and estimates vary from 20 to 53 per cent. The latter figure is given in the most recent work on the subject, an investigation conducted by R. D. Brown of Edinburgh, published in the *Edinburgh Medical Journal* for February, 1906, which is distinguished by very careful laboratory examinations of the urinary secretion in a number of typhoid cases. This fact will probably account for the large proportion of positive results.

A number of theories have been advanced to explain the presence of the typhoid bacilli in the urine, none of which, however, is quite satisfactory. The most adequate seems to be that one or two stray bacilli manage in some way or other to pass through the kidney from the blood, and after they get into the urine to grow very rapidly. It has been experimentally proven that this fluid is a good medium for the growth of *B. typhosus,* and another favorable condition is found in the suitable temperature of the bladder. This theory seems also confirmed by the circumstance that vesical irrigations with germicidal solutions rapidly bring about the disappearance of the organisms from the urine.

From observations thus far published it seems quite safe to assume that *B. typhosus* exists in the urine of typhoid patients in from 30 to 35 per cent. of the cases. No outward symptoms of this condition may be manifested, and, although albuminuria and pyuria are frequent accompaniments, they are by no means necessary concomitants. A bacteriological examination seems to be the only means by which the presence of the typhoid bacillus can be ascertained, and this should be made a matter of routine.

Considerable diversity of opinion exists as to the time of the appearance of the organism, and, as no rule can be formulated, it is wise to regard the urine with suspicion from the very beginning. It has been shown that the typhoid bacillus frequently disappears from the stools at an early date and its place is taken by the colon bacillus. The feces are therefore no longer a factor in the spread of the disease comparable in importance with the urine, for the soiling of the patient's surroundings by the latter is much more apt to escape notice than that by fecal matter. This occurs not only during the time when the patient is still confined to his bed, but also during the period of convalescence when he is up and about and apparently cured. Pollution of the water supply is also more apt to occur through urination than by defecation.

The author's recommendations include, aside from the usual precautionary measures, the disinfection of the urine and the administration of a urinary antiseptic. He advises that all typhoid patients, at whatever stage of the disease, should micturate into special receptacles, which, together with their contents, may be disinfected. In addition, he advocates the administration from the third week on of hexamethylenamin in ten-grain doses three times a day for ten days, and after a week's interval this should be repeated for a similar period. The effect must, of course, be checked by bacteriological examinations of the urine at frequent intervals. With this knowledge at hand, and the ready means which we possess for combating such a source of danger, it seems almost criminal to neglect the precautions just referred to when treating a case of typhoid fever.

MORPHINE-SCOPOLAMINE NARCOSIS.

ALTHOUGH the introduction of general anesthesia by the inhalation of ether or chloroform has been quite generally accepted as one of the greatest medical discoveries of the last century, the disadvantages which have been found to attend its use have been the means of prompting a constant search for satisfactory substitutes. It has been sought to overcome the unpleasant features associated with the inhalation methods by the subcutaneous administration of various narcotic substances, and among those which have received the greatest amount of attention during recent years are the two alkaloids, morphine and scopolamine in combination. Schneiderlin first suggested their employment in 1900, and since that time the method has been subjected to a sufficient period of probation to permit of drawing certain conclusions. Among the more extended applications may be noted their use in a series of one hundred gynecological cases of greater or lesser import, recorded by Karl Voigt in the *Monatsschrift für Geburtshülfe und Gynäkologie,* December, 1905.

There are certain peculiarities associated with anesthesia in gynecological cases which render the ordinary methods undesirable in many instances. Narcosis may be required merely for an examination or exploratory operation, necessitating another anesthesia within a comparatively short period; the patients are very often in a poor general condition: the extent of the operative procedure and its vital import oftentimes bear no relation to the danger associated with inhalation narcosis, and the large proportion of

laparotomies in this class of cases demands an anesthetic which will produce little tendency to retching or vomiting. Gynecological operations would therefore seem to afford a good test for the purpose of trying a new method of narcotization. Judging from Voigt's results in this large series of unselected cases, the millenium, in this regard at least, has not been reached. One of the most noteworthy features of the report is the statement that morphine-scopolamine anesthesia alone is insufficient for extended operations; in only six cases out of the hundred was it possible to finish the operation, although only slight in extent. In others, again, to the number of fourteen, no effect whatever was obtained, and in thirty-two unfavorable sequelæ were noted. These results are not encouraging, and yet there seems to be a field for the method, for it may apparently be employed to advantage as a preliminary to etherization by the drop method, as it produces a more marked quieting influence than the use of morphine alone, inhibits the action of the secretory nerves to the salivary and mucous glands of the mouth and upper air passages, allays vomiting and excitement, and permits the quantity of anesthetic needed to be diminished. It is recommended, however, that the dosage be as small as possible—less than that ordinarily employed, in order to avoid any possible after-effects of an unpleasant character. This dose is 0.0005 gram scopolamine hydrobromate and 0.01 gram morphine hydrochlorate.

The weak point in the method is its unreliability, for it is impossible to predict how this combination of drugs will react in any given case. The reason for this resides mainly in the fact that the composition of scopolamine is very inconstant, since this is made up of a mixture of various isomeric alkaloids which have thus far resisted all attempts at isolation. If a preparation of scopolamine can be obtained with a definite composition, it may then be possible to find the reason for the idiosyncrasies which have been observed, and thus to formulate indications and contraindications for the use of the drug. At the present time, however, the method is surrounded by too many uncertainties to warrant its general adoption as an efficient substitute for inhalation narcosis.

THE TOXEMIAS OF PREGNANCY.

The importance accorded to certain toxemias as etiological factors in the production of disease has been gradually extended from year to year, and foremost among them in point of interest are those toxic states associated with pregnancy and which have now come to be the regarded as one, if not the only, cause of hyperemesis, acute yellow atrophy, eclampsia, and similar pathological conditions complicating this physiological process. This view is, moreover, apparently corroborated by clinical observations and laboratory research, although there are not as yet sufficient data at hand to warrant attributing all these conditions to one poison or to one variety of faulty metabolism. Experimental efforts have been made to isolate these toxins, but the success attained is far from complete or uniform. In a recent contribution to the subject F. E. Sondern (*Bulletin of the Lying-In Hospital*, New York, December, 1905) calls attention to the fact that the literature on this subject deals largely with the changes found in the nitrogenous metabolism, and thus lends color to the belief that these changes are the cause of the clinical symptoms. There are certain poisons, however, such as phosphorus, which bring about a similar hepatic change, with a disturbed nitrogenous metabolism, but with no semblance in the way of clinical manifestations. Then there are cases of diabetes which show as relatively high a percentage of ammonia, and some of erysipelas which are accompanied by an equally large amount of amido acids in the urine as may be found in the hyperemesis of pregnancy, yet neither of these ailments is characterized by vomiting as a marked symptom. It therefore remains for a poison to be found to which may be attributed the symptoms as well as the pathological changes and impaired metabolic processes associated with these disturbances of pregnancy.

In the absence of a knowledge of the direct causative factors in the toxemias of pregnancy there are a number of abnormal conditions in the urine which, according to the writer, afford corroborative evidence in diagnosing the condition and which may aid in forming an opinion as to its severity. These are the usual evidences accompanying an intestinal toxemia, namely, an excess of indican, skatol, phenol, or, more properly speaking, increased relative amounts of the ethereal sulphates. The occurrence of acidosis, as shown by the presence of aceton, diacetic acid, and beta-oxybutyric acid, affords the earliest indication of the presence of a toxemia in pregnancy, the severity of which corresponds quite accurately to the appearance of these in the order named. Symptoms preceding eclamptic seizures of toxic origin show the same conditions, and in either case, if the conditions become still more serious and liver changes are added, then, and not until then, are the alterations in nitrogenous metabolism obtained. Dr. Sondern's observations clearly show that the analysis of the urine in pregnancy constitutes one of the most important duties devolving upon the attending physician, and particularly, when even slight disturbances of the general health are noted by the patient, the examination should include the tests for the evidences accompanying intestinal toxemia as well as those for acidosis. The routine determination of albumin, sugar, and casts can no longer be regarded as sufficient, and the false sense of security afforded by the absence of the former is only too often followed by an unlooked-for and sometimes fatal issue.

Poor Consumptives in the West.

The Medical Record has already on numerous occasions discussed the necessity for individualization in deciding the matter of climatic treatment in pulmonary tuberculosis. It is not alone the patient's bodily condition, but the physical state of his pocketbook as well which must be regarded in considering whether or not to send him away from home, and if so, where. The importance to the patient of good food, properly prepared, and of conditions favoring mental equanimity and providing for a sufficiency of physical repose is now well understood, but these desiderata are unattainable by a sick person who leaves home inadequately provided with funds which he must husband from the start, and who soon finds his slender resources dwindling to the vanishing

point. The western communities elected as resorts by the majority of tuberculous Easterners are being obliged to contribute largely to the support of indigent strangers, and the burden is one that it is unjust to impose upon them. A warning has already been circulated by some of the Arizona towns, and the Charity Organization Society of Denver is at present distributing to physicians a circular letter pointing out the hardships that await sick people devoid of financial resources with half the continent between them and their friends. In this circular it is stated that Colorado, like other health resorts, is flooded with patients with tuberculosis who have been mistakenly sent there. It should be understood thoroughly that no patients should be sent there who have not sufficient means, or for whom provision has not been made, to live in comfort and without worry for from six months to two years. If the patient has even one degree of temperature daily he cannot be expected to recover without almost absolute rest, in bed most of the time, until this subsides. Owing to the number of invalids who go there, suitable employment is much harder to obtain than in Eastern communities. If one has about him any of the marks of invalidism, even if it be but an occasional cough, his chances for employment are much damaged. The substance of this whole matter is that patients with tuberculosis should go West only upon the advice of some physician particularly expert in chest diseases; should go only during the first few weeks, or possibly months, of the disease, if recovery is to be expected; should have sufficient provision made to live without work or worry for a year, at least in most cases; and should be under the guidance of a well-qualified physician after arrival.

The Leucocyte Count in Cases of Pneumonia in Childhood.

The appearance of an increased number of leucocytes in the blood in connection with various infectious processes must be considered as the expression of a biological or chemical reaction induced by the toxins generated in the course of the given disease. Such leucocytosis is not invariably present in all forms of infectious disease, and it may occur, besides, as the result of intoxication of other origin, and also of such physiological activities as the digestive process. During the first few years of life the number of leucocytes in the blood is normally greater than in adults, while variations occur more readily and are more marked than in later life. A study of the leucocyte-number in twenty-four cases of croupous pneumonia, nineteen cases of bronchopneumonia, and seven cases of empyema in children, made by Drs. Henry Heiman and Henry Koplik (*Archives of Pediatrics*, October, 1905), has yielded interesting results. A well-marked leucocytosis was found in the cases of bronchopneumonia, independently of the amount of lung involved and of the temperature. As a rule, not without exception, failure of the leucocyte-count to fall when the physical signs of the pulmonary disorder disappear indicates either a complication or a fatal termination. A constant and considerable leucocytosis was found in the cases of fibrinous pneumonia. The degree of leucocytosis was about the same in the two forms of pneumonia—an average of 33,900 for the cases of bronchopneumonia and 31,700 for those of fibrinous pneumonia. In the cases of croupous pneumonia the leucocytosis was proportionate to the extent of the pulmonary involvement, but there was no relation to the temperature. An increasing leucocytosis was the rule in the cases of croupous pneumonia, reaching the maximum just before the crisis. Failure of a decline to take place in the number of leucocytes may or may not indicate the occurrence of a complication. There was no precritical fall constantly, and this phenomenon proved of little or no prognostic value, and without significance as related to the time of crisis. Empyema was attended with high leucocytosis at the onset. The conclusion is reached from the observations made that the diagnostic value of leucocytosis in the pulmonary affections of children is limited, although in certain instances or under certain conditions the leucocyte count may be of great diagnostic aid. Thus a sharp rise in the leucocyte count after resolution and decline in the leucocytosis have occurred in the course of an attack of croupous pneumonia should arouse suspicion of empyema, especially in the presence of physical signs and symptoms indicative of that condition.

News of the Week.

The Centennial Celebration of the County Medical Society. — A dinner was given at the Hotel Astor on Wednesday evening of this week to celebrate the one-hundredth anniversary of the incorporation of the Medical Society of the County of New York. The first meeting of the Society was held on November 14, 1794, but it was not until April 4, 1806, that the Legislature passed the law under which the Society was incorporated. Over two hundred members and invited guests took part in the celebration. Dr. Floyd M. Crandall, President of the Society, acted as toast-master. Toasts were responded to as follows: "The Medical Society of the County of New York," by Dr. William M. Polk; "The Medical Society and Its Responsibilities to the City," by Hon. John J. Delany, Corporation Counsel; "The Church and the Medical Profession," by Rev. Dr. Charles P. Fagnani; "Law and Medicine," by Hon. Job E. Hedges; "The Medical Society of the State of New York and Its Relations to the State and County," by Dr. Samuel B. Ward of Albany.

Society of Sanitary and Moral Prophylaxis.— A meeting of this society will be held at the Academy of Medicine in this city on Tuesday, April 10, at 8:30 P. M. Papers will be presented by Dr. John A. Wyeth, Dr. John A. Fordyce, and Hon. William Lindsay.

Seaside Hospital Fund.—An anonymous donor has contributed $25,000 to the New York Association for Improving the Condition of the Poor, to aid in the building fund for the first American Seaside Hospital for Crippled Children. The hospital is to be built as soon as the association has secured the necessary $250,000, toward which sum John D. Rockefeller has given $125,000 with a proviso that the entire amount must be raised before July 1. During the past week the association has also received contributions amounting to $30,000 from seven other donors.

Ordinance Regulating Storage Plants Favorably Recommended.—Health Commissioner Whalen of Chicago has secured from the Judiciary Committee a favorable recommendation of the ordinance to regulate cold storage plants. The ordinance, which places the plants in which food products are stored under the supervision of the health officials, will soon go to the Council. Its provisions are: Warehouses to be licensed after they have proved on inspection to be in a sanitary condition. Poultry and fish to be drawn before being put in storage. Foods must be tagged with date of re-

ceipt and shipment; tags to remain on original packages when goods are sent out. The city must be notified when any articles have been in storage six months; the inspector then will visit the warehouse to see if the food is still fit for use and condemn it, if it is not so.

For a Monument to v. Mikulicz.—An international committee has been formed to solicit and receive contributions for a monument in honor of the late distinguished surgeon, Johannes von Mikulicz-Radecki of Breslau, Germany. The American members of this committee, Drs. W. W. Keen of Philadelphia, W. S. Halsted of Baltimore, J. B. Murphy of Chicago, and F. Kammerer of New York, appeal to the surgeons of the United States and Canada for subscriptions to the fund. Contributions may be sent to any member of the committee.

Philadelphia Hospital. — The Councils of the City of Philadelphia have appropriated the sum of $49,000 to the Department of Health and Charities for alterations to the Philadelphia Museums buildings, boilers, internal improvements, and the removal of the exhibits, as part of the plan to improve the conditions at the Philadelphia Hospital.

A Testimonial to Dr. Boas.—At the close of the coming summer Dr. J. Boas of Berlin will have reached the twenty-fifth anniversary of his graduation in medicine and will also terminate his polyclinical connection, after twenty years of service. A committee of his friends and pupils have planned to present him at this time with an artistically executed address, which shall bear the names of those who help to contribute the necessary funds by sending the sum of 6 marks to the treasurer of the committee, Dr. Eugen Lilienthal, Berlin, W. Kleiststrasse 15.

A Gift to the Peabody Museum.—Dr. T. Mitchell Prudden, Professor of Pathology in Columbia University, has presented to the anthropological section of the Peabody Museum of Natural History at Yale University the archeological collections made by him in Southern Utah, Southern Colorado, New Mexico, and Arizona. The collection comprises textile fabrics, pottery, ornaments, etc., of the cliff dwellers and Pueblos, as well as valuable maps and field notes.

New Illinois Hospital. — A hospital that will cost $100,000 will be erected at the northeast corner of Wisconsin Avenue and Monroe Street, Oak Park, Ill., for the Sisters of Miserecordia. The structure will be five stories, 45x125 feet.

Illegal Use of a Name.—The Branch Appellate Court of Chicago has decided that the so-called Christian Hospital must pay a fine of $250 for the use of the name of Dr. John B. Murphy of Chicago without permission. This decision is the result of proceedings brought by Dr. Murphy, who secured an injunction restraining the defendants from using his name. In May, 1903, Dr. Murphy received a letter from the president of the hospital, informing him he had been elected President of the Medical and Surgical staff of the institution. Dr. Murphy had never heard of the institution, and refused to have anything to do with it.

Hospital for the Treatment of Acute Alcoholism.—An ordinance in the Chicago City Council has been introduced by Alderman Scully, providing for the construction and maintenance of a hospital for the treatment of acute alcoholism.

Dr. Nicholas Senn of Chicago was recently elected an honorary member of the Imperial Royal Medical Society of Vienna.

Free Alcohol Bill.—On March 30 the Committee of Ways and Means by a vote of sixteen to two authorized a favorable report on the bill intended to remove the internal revenue tax from alcohol for use in the arts and sciences which has been denaturized in such a way as to make it unfit for consumption as a beverage. The bill provides that, beginning three months after its passage, domestic alcohol of such degree of proof as may be prescribed by the Commissioner of Internal Revenue and approved by the Secretary of the Treasury may be withdrawn from bond without the payment of internal revenue tax, for use in the arts and industries, and for fuel, light, and power, provided it shall have been mixed in the presence and under the direction of an authorized Government officer before withdrawal with denaturing material suitable to the use for which the alcohol is withdrawn, but which destroys its character as a beverage and renders it unfit for liquid medicinal purposes. The sale of denaturized alcohol as a beverage or for liquid medicinal purposes is forbidden by the measure under penalty of fine not to exceed $5,000 or five years' imprisonment, or both, in the discretion of the court. It is estimated that the annual loss in revenue will not exceed $500,000, while the advantages to the country will be very great.

Dr. Henry Sykes, formerly medical superintendent of the Episcopal Hospital, Philadelphia, has been temporarily appointed chief resident physician, pending a civil service examination.

For Clean Prisoners.—A wholesome reform is projected by the Board of Magistrates, who have recently appointed a committee to try to induce the Board of Health to arrange for the washing and disinfection when necessary of disreputable prisoners, who at present are brought into the courtroom in their habitual filthy condition.

Civil Service Examinations.—Among the positions for which the State Civil Service Commission will hold examinations on April 14, 1906, are the following: First Assistant Physician, State Hospital for Tuberculosis, $1,500 and maintenance; Medical Superintendent, State Hospital for Tuberculosis, $3,500 and maintenance for Superintendent and his family; Physician, Westchester County Jail, $400; Trained Nurse, State Institutions, usual salary $420 and maintenance. The last day for filing applications is April 9. Application forms and detailed information may be obtained by addressing Mr. Charles S. Fowler, the Chief Examiner of the Commission, at Albany.

Less Beauty in China.—Chinese esthetes will no doubt be grieved by a recent action of the Pekin Board of Education, which, in an endeavor to stop the practice of foot binding, has issued an edict prohibiting the sale of the special shoes used by the victims of the measure.

Antituberculosis League in Porto Rico. — An antituberculosis league has been organized in Porto Rico under the auspices of the Administration and many prominent natives and Americans. A large number of subscriptions have already been received.

Dr. Herman M. Biggs, chief medical officer of the Board of Health, is to leave shortly to make a three months' official tour of inspection of the European hospitals and water filtration plants.

Vaccination in Paterson.—As a result of their refusal to submit to vaccination, twenty teachers and several hundred pupils of the Paterson, N. J., public schools have been suspended. Many of the

teachers who have been vaccinated have been obliged to stay at home on account of illness, so that the entire list of substitute teachers has been exhausted, and it is expected that further vacancies will occur.

One Health Board Sufficient.—Health Commissioner Darlington has been opposing the bill seeking to create a separate Department of Health for the boroughs of Brooklyn and Queens, on the ground that such a measure would entail a policy of decentralization, confusion in administration, increased expense, and lessened efficiency.

Ambulance Chasing.—A strong effort is being made at Albany by the adherents of the Wemple bill to secure the passage of this measure, which is intended to break up the practice of the professional ambulance chasers. Bills similar to this one have already been passed in Massachusetts, Maryland, and other States, and are expected to reduce the number of accident frauds.

Yellow Fever at New Orleans. — It was found at the autopsy of a patient in the New Orleans Charity Hospital whose illness had been diagnosed by several experts as yellow fever, that the cause of death was an affection of the liver accompanied by jaundice. In order to allay all doubt the heads of the Health Boards of several neighboring States were invited to be present at the post-mortem examination. At a meeting of the Orleans Parish Medical Society held on March 21 resolutions were adopted urging physicians to report at once any suspicious cases and providing that any member of the society who failed to do so would be held guilty of unprofessional conduct and be tried for the offense by the society's judiciary committee.

The Sacramento Society for Medical Improvement, at its annual meeting, completed its thirty-eighth year, as it was organized March 17, 1868. The officers elected for the coming year are: *President*, Dr. H. R. Wright; *Secretary and Treasurer*, Dr. E. M. Wilder.

The Atlantic Coast Line Surgeons, at their annual convention held at Tampa, Fla., on March 21, elected these officers: *President*, Dr. D. W. Bullock of Wilmington, N. C.; *Vice-President*, Dr. W. P. Adamson of Tampa.

The Homeopathic Medical Society of Western Massachusetts, at its annual meeting held in Springfield on March 21, elected the following officers: *President*, Dr. Robert F. Hovey of Springfield; *First Vice-President*, Dr. E. P. Bixby of Barre; *Second Vice-President*, Dr. H. C. Cheney of Palmer; *Secretary and Treasurer*, Dr. James B. Comins of Springfield.

The Sydenham Medical Library has recently been established for the benefit of tenants in the Sydenham medical office building. Dr. Mark J. Knapp is the librarian.

Dr. Charles Warrenne Allen has been appointed the delegate of the American Dermatological Association to the Fifteenth International Congress, to be held in Lisbon April 19 to 26.

Dr. Augustin H. Goelet of New York was the guest of the Harrisburg Academy of Medicine Friday evening, March 30, when he presented a paper entitled "Posterior Displacements of the Uterus that Are Curable Without Operation."

City Death Rate Going Down.—Health Commissioner Darlington announced yesterday that, despite the largely increased population, the death rate for March was 20.83, while in March, 1905, it was 21.17. The total number of deaths last month was 1,633, as against 1,658 in March, 1905.

The Second International Congress on School Hygiene will be held in London from August 5 to 10, 1907, the President being Sir T. Lauder Brunton.

Obituary Notes.—Dr. Allen H. Oliver of this city died suddenly of apoplexy on March 27, at the age of fifty-eight years. Dr. Oliver was born in New Orleans and spent a considerable portion of his early life in Europe. He served through the Franco-Prussian War in the Garde Mobile, and on his return to this country took up the study of medicine, being graduated from the medical school of the University of Pennsylvania in 1882. He practised in this city for about fourteen years, and for the past eight years had been assistant superintendent of the Presbyterian Hospital.

Dr. James W. Smith of Paterson, N. J., died on March 29, at the age of forty years. He was appointed physician to St. Joseph's Hospital in Paterson in 1883 and had been on the visiting staff ever since. He was president of the Board of Managers of the State Hospital for the Insane, and assistant health officer of Paterson.

Dr. Seth Cook Comstock died in this city on March 27, at the age of thirty-five years. He was born in New London and received the degree of M.D. at the New York College of Physicians and Surgeons in 1893. In 1901 he removed to Wimbledon, Eng., where he devoted himself to literature.

Dr. George S. Dearborn of Rockaway died of pneumonia on March 26, at the age of seventy-one years. Dr. Dearborn was born in Winthrop, Me., and was a graduate of the Albany Medical College. He served as a surgeon in the Civil War and had practised in Rockaway since 1889.

Dr. William J. Mahon of this city died on March 27 in Hartford, Conn., at the age of thirty-three years. He was graduated from the Bellevue Hospital medical school nine years ago and had made a specialty of diseases of the eye and ear. He was a lecturer at the New York Polyclinic and surgeon to the Metropolitan Throat Hospital.

Dr. James M. Boyd of Walla Walla, Wash., died on March 20, at the age of sixty-nine years. Dr. Boyd was born in Kentucky, and he first practised in Iowa, moving West in 1865. In 1878 he removed from Baker City to Walla Walla, where he had practised ever since. He served several terms as City Health Officer and in 1886 he was elected Mayor.

Dr. J. C. Le Grande of Birmingham, Ala., died on March 21, at the age of fifty-two years. Dr. Le Grande was a native of Alabama and was graduated from the Atlanta Medical College in 1880. In 1887 he removed to Birmingham and at various times he had been vice-president of the American Medical Association, president of the Tri-State Medical Association of Alabama, Mississippi, and Georgia, and president of the Alabama State Medical Association. He founded the *Alabama Medical Journal*, of which he was the editor for eighteen years.

Dr. J. G. Gilchrist of Iowa City, Ia., died on March 20, at the age of sixty-four years. He was born in New York City and was graduated from the Homeopathic Medical College of Pennsylvania. He practised first in Minnesota and in Michigan, and in 1883 removed to Iowa City. He was well known as a surgeon and was the author of nearly a dozen different works on medical and surgical subjects. He was a member of numerous homeopathic societies and had held office in many of them.

Dr. George Sullivan Woodman of Newtonville, Mass., died on March 22 in Cambridge, Mass. Dr. Woodman was born in Boston in 1824 and was graduated at Amherst in 1846 and at the Harvard Medical School in 1849. During the Civil War Dr.

Woodman was an examining surgeon and was stationed at Brooklyn. He was a member of the Massachusetts Medical Society and later of the Massachusetts Homeopathic Society.

Dr. THOMAS F. RICHARDSON of the United States Public Health and Marine Hospital Service died in New Orleans on March 19, of typhoid fever, at the age of thirty-four years. Dr. Richardson was born at St. Joseph, La., and received his medical degree from the Tulane Medical College in 1898. He entered the United States Public Health and Marine Hospital service in 1899 and at the time of his death was passed assistant surgeon.

Dr. GEORGE G. WISE died at Philadelphia on March 27, at the age of sixty-one years. He was graduated from the medical department of the University of Pennsylvania in the class of 1866.

Dr. ROSCIUS Y. DOWNS of Ansonia, Conn., died on April 1, at the age of forty-eight years, as the result of an infection received while operating.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HOSPITAL FUNDS AND OUT-PATIENT EXPENSES—AMALGAMATION OF SOCIETIES—TUBERCULOUS PLEURISY—TRAUMATIC DIABETES—CARRYING INFECTION—AMBULANCE FIELD WORK—LEGISLATION FOR NURSES—X-RAY INJURIES—AN AMBULANCE SERVICE—OBITUARIES.

LONDON, March 16, 1906.

THIS morning comes an appeal for £120,000 to pay off the debt and annual deficit of Charing Cross Hospital. Yesterday a meeting to help was held in His Majesty's Theater, kindly lent by Mr. Beerbohm Tree. It was stated that 2,500 in-patients are treated in a year and 20,000 to 21,000 out-patients. The origin of the trouble was acknowledged to be the great rebuilding scheme, the cost of which, as so often the case, has greatly exceeded the estimates. It was said that if hospitals were thrown on the rates they would cost more, which is likely enough, but that is a poor excuse for the extravagance and rashness of hospital managers. No one suggested that the out-patients' department of this hospital might be closed without any hardship to the sick poor of the neighborhood, and that all the money spent on this department might have been saved and attached to the other buildings.

The 133d anniversary of the Medical Society of London was celebrated last night by the usual dinner. This society was originally a sort of offshoot of the Royal Society, a beginning in a way of specialism when medical subjects became too numerous for the great scientific body to cope with. During its existence the "old medical" has seen the rise and progress of other societies, not a few of them instances of further specialization. This furnished the president with a subject, and he talked of the advantages and disadvantages of specialism in the profession.

The question of amalgamation of the societies was bound to come up, and Dr. Donald MacAlister, president of the General Medical Council, took it up in proposing the toast of the evening. He congratulated the members that they supported the movement, on the ground that general medicine should have a full voice and adequate vote in the constitution of the proposed academy. I made remark on this that it remained to be seen whether satisfactory financial arrangements could be made. This society, for instance, is prosperous, its financial position assured, for it is saving about £400 a year, and its total debt is only about £2,500, so that every year it is growing stronger financially.

A general meeting has not yet been called to consider the scheme for union, but it is probable, when held, that the proposal will be accepted.

At the ordinary meeting of the society Dr. Sidney Martin contributed a paper on tuberculous pleurisy. He was doubtful concerning the older facts and the opinions deduced from them as to the relative frequency of simple and tuberculous pleurisy, and thought examination of the fluid would give more trustworthy data. A case of primary pleurisy may be due to the pneumococcus, streptococcus, staphylococcus, or to the tubercle bacillus, *i.e.* it may be tuberculous or non-tuberculous, and the distinction is clinically of the highest importance, but may be very difficult to make. The diagnosis must be made from the (*a*) mode of onset, (*b*) course, and (*c*) after-effects on chest wall and lung. The onset may be sudden in either case. Latent cases were almost invariably tuberculous. Unilateral deficiency of movement Dr. Martin regarded as a valuable sign in early diagnosis. Recurrent cases also were almost always tuberculous; non-tuberculous cases tend toward recovery. Dry pleurisy may run a short course with slight pyrexia and leave no deformity of the chest wall, even though the effusion may be considerable. The fluid, if removed at an early stage, will coagulate spontaneously. By centrifugalizing about 100 c.c. the deposit, on examination, will be found to contain one or more of the cocci above mentioned. If sterile, it will indicate tuberculous pleurisy, and the course of the disease will be different, the acute stage long, recovery, if it occur slow, followed by deformity of the chest from contraction of the lung—"pleurisy with retraction." In some of these cases there may be no effusion, but they come on insidiously and last long, commencing with slight pyrexia, some friction sound usually in the lower part of the axilla. Weak breathing will soon be noted without crepitation, increasing dullness, due to thickening or fibrosis of the pleura, will succeed, evening rise of temperature continuing; but for certain diagnoses it will be necessary to puncture the pleura and ascertain the absence of pus.

Tuberculous cases with effusion also present difficulties in diagnosis. In them the pyrexia is often prolonged, and in the absence of empyema may last for weeks or months. The effusion will recur after withdrawal, necessitating a second or third paracentesis, sometimes even a more frequent tapping, on account of firm adhesions having formed a pocket in which the fluid is kept. This fluid must be examined bacteriologically and microscopically to confirm the diagnosis; cases of pleurisy with expectoration should be diagnosed by examination of the sputum.

As to treatment, Dr. Martin advised removal of the fluid in the acute stage when it was large in quantity and showed no signs of absorption, for, apart from urgent symptoms, adhesions are likely to occur if the case is tuberculous. For cases running a prolonged course without urgent symptoms he recommended lying in the open air, well wrapped up and well fed. Even after pyrexia ceased he advised long open-air treatment to help heal tuberculous lesions, and said if this were systematically practised it would, to a great extent, prevent second attacks of tuberculosis, which so often affect the lungs and lead to very chronic illness, or more immediately to death.

Dr. Theodore Williams said more cases of pleurisy were tuberculous than was generally supposed. Dr. Hector Mackenzie's statistics showed about a third to be so. Recurrence was evidence of tuberculous pleurisy, but such cases might clear up quickly for a time. Dry pleurisy was always suspicious.

Dr. Chapman inquired as to the value of *x*-ray examinations.

Dr. Samuel West commented on the relative frequency of simple and tuberculous pleurisy, the significance of rapid disappearance of the effusion and the rapidity with which the fluid coagulated when withdrawn.

A man of 44 was exhibited at the Clinical Society last Friday, who, five years ago, was thrown from his bicycle and made unconscious for fourteen days, fluid dripping from the nose. On becoming conscious bilateral temporal hemianopia and ocular paresis pointed to fracture of the base of skull. Afterwards he had extreme polyuria and thirst without sugar or albumen. No sugar could be made to appear by diet arranged for the purpose, but two years later glycosuria appeared spontaneously, diminished but not quite prevented by careful dieting. Traumatic diabetes is not very common, and the succession of the two forms is rare. It was remarked that traumatic glycosuria does not usually last after the reservoirs of glycogen are emptied.

Dr. Herbert French, who, with Mr. Ticehurst, related the case, said, in reply to a question, that there were two cases on record with similar localizing brain symptoms. It had been suggested that the polydipsia and polyuria might be secondary to injury of a hypothetical "thirst center." Dr. F. Buzzard and Mr. I. Cunning then read a paper on a case of post-traumatic hemorrhage from the superior longitudinal sinus without fracture of the skull; recovery after operation. On April 1, 1905, a man of 25 fell on the back of his head, causing a slight wound, which healed easily. A fortnight later continuous increasing headache came on, and in a few days complete left hemiplegia and hemianesthesia, with stupor, slow pulse, and vomiting, but no optic neuritis. He was trephined on the 18th of April over the right post-parietal region. A large accumulation of blood was under the dura mater and rapid hemorrhage from the neighborhood of the superior longitudinal sinus. Forceps were applied to the bleeding point and a saline infusion was given. On the 30th the forceps were removed; the paralytic condition had improved, and progress went on to complete recovery. The rarity of hemorrhage from this part without fracture of the skull was referred to, and Mr. Gould remarked that he saw Mr.

Heath operate successfully on such a case in which, however, there was no paralysis.

A suit against two medical men was decided in their favor last week. Damages were claimed for the alleged conveyance of scarlet fever to a patient attended in her confinement by one of the partners. It was stated that he told the husband he was not attending infectious cases at the time, although not long before he had had a case of scarlet fever. All antiseptic precautions being taken, the risk must be slight, but in any case if a doctor should be held liable in damages whenever one of his patients fell sick with an infectious disease it is obvious he would have to decline attendance on such cases and then—what?

The London Volunteer companies of the R. A. M. C. and of the Electrical Engineers engaged in practical maneuvers one night lately on Wimbledon Common. It was assumed a battle had been fought, and the medical corps and ambulances set to work to pick up the wounded, many of whom had crept into the coppices and among the bushes. A large marquee was pitched for a dressing station, ambulance wagons sent forward for a collecting station, searchlights swept round and into the woodland, and parties pushed on to give first aid and then to help the wounded into the wagons. A couple of dogs trained for ambulance work searched the remoter area. The maneuvers were witnessed by a few interested spectators, and were said to give a good idea of ambulance duty on the night after a battle.

Nurses are not by any means agreed about the proposals for legislation in their interests. Even those who advocate registration cannot agree upon the terms or method of carrying it out. At a meeting last week their differences were acutely accentuated. Mrs. Fenwick declared that fair treatment could not be obtained at such a whipped-up meeting, and no notice would be taken of its doings. There was quite a scene respecting the number of doctors to be placed on the Central Board. Nurses, some said, would not submit to be governed by doctors. One of them asserted that doctors sent women out as nurses whose characters would not bear examination, and would put them on the register, and she refused to retract this shameful charge. Dr. Thorne told them doctors would not accept a subordinate position. One nurse said she would rather be governed by doctors than by such excited women as had been speaking. Sir J. Crichton-Browne (in the chair) remarked that doctors might not be so anxious as some supposed to serve.

An action was brought against a firm of chemists for alleged negligence in the application of *x*-rays. The defense was that the chemists did not profess to be experts in therapeutics, but used their skill in the mechanical use of the rays only under the directions of the doctor. A large amount of expert evidence was called as to whether it was possible to prevent burning, and further as to whether the *x*-rays were suitable for the case. On both these questions there were contradictory assertions. At the conclusion of the case the jury spent more than an hour in considering their verdict, and then announced there was no hope of their agreeing. They were discharged. Does not this case show that treatment by *x*-rays as by electricity and other means should be carried out by the prescribers?

St. Bartholomew's Hospital is prepared to supply stabling and a surgeon to the proposed horse-ambulance, to be established under the charge of the city police. The corporation contributes toward the city police service, and the combination of the ambulance with it would no doubt be more effective and less costly than under other control.

Mr. W. Falconer Clark died at Dorking, where he practised many years. He began his professional career in the Old East India Company and served on the North-west Frontier and through the mutiny. He was present at the siege of Delhi and the relief of Lucknow, and obtained two medals and four clasps.

Francis J. Crane Parsons, J. P. of Bridgewater, who died on Saturday, was a very active worker in public matters as well as in the profession. He was an able Medical Officer of Health and Port Sanitary authority, and Senior Surgeon to the local infirmary, and held other appointments. He took the double qualification of the London Colleges in 1871, when his age was thirty-three, as he began medical study rather late.

Swallowed Foreign Bodies may, according to Blair Bell, be rendered harmless in their passage through the intestine by the administration of a quantity of absorbent cotton plucked into small shreds and given in bread and milk. The foreign body becomes enveloped in the shreds of cotton so that any sharp angles are covered over and injury to the intestine is avoided.—*Medical Press and Circular.*

OUR PARIS LETTER.

(From Our Special Correspondent.)

EMIGRANTS FROM THE EAST—THE FIGHT AGAINST TUBERCULOSIS—HYDATID CYSTS OF THE LIVER—SERPENT VENOMS—THE DEATH OF DR. DE WECKER—CRUISE TO THE LISBON CONGRESS.

PARIS, March 7, 1906.

At the Académie de Médecine, Chantemesse and Borel pointed out the desirability of supervising the emigration of Orientals in order to protect public health by subjecting the emigrants to rigid surveillance. About 60,000 emigrants, coming from Asia Minor, Arabia, and Egypt, pass through France every year in order to embark at Havre for America. Up to the present time no sanitary precautions have been taken against these transient guests, some of whom might be dangerous and might bring in with them the germs of cholera. Therefore Chantemesse proposed that the Académie should draw up a resolution urging legislation to be enacted regarding the entrance of emigrants into France, and their passage through the country; that these regulations should be founded on the measures in force in other countries, and that the sanitary surveillance of the emigrants should be carried out by a special department. The resolutions were unanimously adopted by the Académie.

A very interesting discussion on the struggle against tuberculosis was also held at the Académie de Médecine. Professor Robin, who first brought up this topic for discussion, expressed the opinion that the mortality statistics of tuberculosis should be obtained more generally and in a more accurate way. Professor Brouardel then very properly observed that the mortality statistics of tuberculosis were closely concerned in the declarations of the causes of death, and he emphasized the point that the reporting of cases of tuberculosis should be made strictly obligatory. Professor Landouzy brought forward the necessity for obtaining better mortality statistics, that is to say, of having statistics capable of furnishing a useful idea of the sanitary condition of the country, especially as regards tuberculosis. He urged upon the Académie the double necessity for the obligatory notification of tuberculosis and for compulsory disinfection of dwellings contaminated by the disease. He believed that among the defensive means at our disposal disinfection was the best, the easiest, and the least costly method of opposing the extension of the disease. Chauffard also thought that compulsory notification of deaths by tuberculosis was only a roundabout way of approaching the desired object, that of diminishing the death rate from tuberculosis. As the tuberculosis question was too urgent not to demand every effort, he proposed that the Académie should draw up a resolution to the effect that every death from tuberculosis should be followed up by a compulsory disinfection. Kelsch considered that it was visionary to looked upon disinfection as a heroic procedure, capable of restricting the spread of tuberculosis. The only measures, according to his view, which were useful were the suppression or the improvement of insanitary dwellings; by practising disinfection only, immediate contamination would no doubt be avoided, but the propagation of tuberculosis would not be very greatly diminished. Lereboullet asked that the Académie should not compel family physicians to report cases of pulmonary tuberculosis, and suggested that the notification be made optional; on the other hand, he attached much importance to the declaration of all deaths from tuberculosis, and laid stress on the necessity of supervising all the districts where the disease was active, and of carrying out disinfection of the dwellings and aiding in the treatment of the patients. Laveran also thought that compulsory notification of tuberculosis would be a useless and annoying measure. As a matter of fact, the experiment had been tried several years ago in certain quarters of Paris, where the municipal department of disinfection had carried out weekly fumigations. The patients were promptly looked upon as unclean, and it frequently happened that they were evicted from their dwellings. While Laveran expressed the wish that it might not be made obligatory to report cases of tuberculosis, he was strongly in favor of compulsory reporting of the death or change of residence of patients afflicted with the disease. It was very important to carry out disinfection of contaminated buildings. Professor Pinard expressed the same opinion, and said that he believed that compulsory reporting of all tuberculous patients would be impossible to carry out. In addition he considered that obligatory disinfection after every death from tuberculosis was impossible and would be insufficient. He thought that it was desirable not to force physicians to report cases of tuberculosis, but to give them the right of declaring disinfection necessary when they were convinced of its advisability. Besides, in order to make such a measure effective, it would be abso-

lutely necessary that it should receive complete support at the hands of the authorities.

The treatment of hydatid cysts of the liver was discussed at the Société de Chirurgie. Quénu said that the best method of treatment of these cysts, when their complete extirpation was impossible, consisted in incision, followed by extraction of the germinal membrane and simple suture of the sac. Before opening the cyst it was advisable to formalinize it in order to sterilize its contents, so that the peritoneum would be protected from danger through dissemination of the hydatid vesicles. This formalinization consisted in injecting into the cyst, after the fluid had been aspirated, from 200 to 300 grams of a 1 per cent. solution of formalin. Cysts of the liver treated in this way develop a serous exudation which is usually aseptic and which is absorbed after a longer or shorter period. Broca thought that the best method of treatment of these formations was incision, followed by suture, and said that he employed this technique except in the cases in which, after emptying the sac, he observed on examining its walls the existence of streaks of brown discoloration, indicating a transudation of bile through the superficial biliary bile ducts. Under such conditions he employed drainage. Ricard was able on the same patient to test the value of three methods of treatment of hydatid cysts of the liver. This woman had three cysts: one was extirpated, the second, which contained infected bile, was drained, while the third, with clear contents, was packed on account of severe hemorrhage from its walls.

At the Société de l'Internat the monthly address was held by M. Calmette, director of the Pasteur Institute of Lille, on the question of serpent venoms. After having reviewed the rôle of the serpent in legend and history, the speaker pointed out that among the modern races the Hindoos have retained the ancient veneration for this reptile. In India, death through serpent bites is extremely frequent, and the cobra alone claims 20,000 to 25,000 victims yearly. In France and in the other European countries the bite of the viper is not really dangerous except for children and feeble persons, but nevertheless there are about sixty deaths a year from this cause. In France there are two sorts of venomous serpents, the viper and the adder. Calmette then discussed the physiology of the venom. It is a digestive ferment, without odor or taste, that can be tested in solution in order to determine its toxicity. Animals into whom the venom of the adder has been injected manifest symptoms characterized by somnolence, paralysis of the muscles of the neck, vomiting, and finally paralysis of the respiratory organs, and death. The poison of the viper at first causes a local reaction, and the general symptoms do not appear until afterward. To produce antivenom serums, progressively increasing doses of different venoms are injected hypodermatically into a horse until it has been immunized. The serum of such a horse has marked curative power, and if injected within three hours of the bite it checks the poisoning and prevents death. It is a true specific against serpent bites.

Dr. de Wecker, who has died, was a noted ophthalmologist. Although born in Germany, he came to Paris early in life and practised there nearly forty-five years. He had written numerous important works, among which are: "A Treatise on Diseases of the Eyes," "Atlas of Diseases of the Eye Grounds," and more recently "A Treatise on Ophthalmology," which he published in collaboration with Landolt.

A cruise of French physicians is to be organized for the Lisbon Congress. Cruises to the banks of the Tagus have been planned by the English, the Germans, and the Americans, and it has therefore seemed fitting that the colors of France should also be represented. A steamer called *L'Etoile* has been chartered, and sailing from Marseilles it will proceed along the entire coast of Spain, giving the excursionists opportunities for visiting the places of interest and reaching Lisbon just in time for the International Congress.

The Treatment of Epistaxis.—Mendini recommends the introduction into the bleeding nasal passage of a tampon soaked with one part of a 1-1000 adrenalin solution and ten parts of salt solution; if this does not control the hemorrhage the passage must be packed with strips of gauze. In most cases this will be sufficient and it is rarely necessary to place a tampon in the posterior nares. In removing the tampons it is advisable, after the first few strips have been taken out, to drop into the nostril a small quantity of a solution composed of cocaine hydrochlorate one-fifth, 1-1000 adrenalin solution one, and distilled water ten. The vasoconstriction caused by this application produces enough shrinkage of the nasal mucosa to permit the tampon to be removed *in toto* without difficulty.—*Nouveaux Remèdes.*

Progress of Medical Science.

Boston Medical and Surgical Journal, March 29, 1906.

The Value of Drugs in Therapeutics.—F. C. Shattuck admits the uselessness of many of the old mineral and vegetable remedies, but finds value in many of the new synthetic compounds. Broadly stated, drugs are adjuncts only. What beneficial effects they have (outside of the few specific remedies) lie in their power to alleviate untoward symptoms. This is especially true in acute and chronic infections. In such diseases as cancer drugs may promote comfort and prolong life. In certain maladies more or less local, drugs may be indispensable while there are minor ills which a physician can modify by drugs, such as a purge in biliousness or autointoxication. Our general rules in drug giving should be (1) to do no harm; (2) to have a clear idea in our own mind whether we are giving a drug as a specific, a curative, a palliative or a placebo; (3) to give a drug uncombined as far as possible, though to this rule there are many exceptions. (4) When we are using an efficient drug, we should be as sure as possible that the preparation is efficient and then we should continue it till something happens, either the desired effect or some toxic manifestation. Disregard of this rule is, in the author's opinion, responsible for many therapeutic failures.

New York Medical Journal, March 24, 1906.

Some Eye Problems Which the General Practitioner Is Called Upon to Solve.—R. J. Tivnen advances the following propositions: (1) Ocular findings are of distinct diagnostic and prognostic value in systemic diseases. The clinical ocular manifestations observed in nephritis, diabetes, locomotor ataxia, syphilis, and rheumatism amply warrant this conclusion. (2) Foreign bodies in the cornea are frequently the source of serious disease of the eye. Infection may be introduced and ulcer, with its grave consequences, develop. Antiseptic measures, in their removal, are to be strictly observed. (3) Iritis, conjunctivitis, and sclerotitis may be confused in diagnosis. Care in distinguishing the distinct clinical manifestations of each will prevent the error. (4) Glaucoma may be diagnosticated as sick headache, persistent neuralgia, erysipelas, influenza, or toothache. In all such cases the tension of the eyeball is the correct guide. (5) The use of cocaine and atropine is not free from danger. Toxic symptoms may be produced. Contraindications for use of atropine are distinct, and tension should previously be estimated. (6) Squint in children should be treated early. The usual order of treatment followed is: A. Correction of refractive errors. B. Training of fusion sense. C. Surgical measures. Errors of refraction underlie the majority of cases and proper fitting of glasses may be all that is required.

The Diagnostic Significance of Colic.—G. P. La Roque mentions gastrointestinal disturbances, lead poisoning, tabes, gallstones, pancreatic lesions, renal calculi, and uterine, tubal, and ovarian abnormalities as causes of colic. He gives an elaborate differential table of symptoms as enabling us to distinguish between colic and peritonitis. Under each of the above headings the peculiar symptomatic characteristics of each variety are laid down. Nothing new is presented.

Perforating Ulcers of the Duodenum.—M. A. Austin gives a general description of the clinical features of this lesion, and adds the report of a personal case, appending a bibliography made up from cases reported in the *Annals of Surgery*. His own patient was a farmer of thirty-three years, who had been suddenly attacked with pain in the right side. The abdomen showed a diffuse tenderness, was not distended, but was rigid on both sides. The general condition was one of profound shock. In a few hours he had rallied somewhat, but before arrangements for operation could be completed he suddenly died. Autopsy showed the general peritoneum full of gas and fluid, nearly two gallons of yellowish, fresh-smelling fluid, such as would come from the stomach and duodenum, being evacuated. In the lower left quadrant of the abdomen was a well-marked obstruction of the small intestine, produced by a torsion, and the contiguous bowel appeared as if the obstruction had been present a number of hours. Following up the small intestine, fresh adhesions were found binding the cardiac end of the stomach and the duodenum to the liver and gall-bladder. On pulling the duodenum slightly, its adhesions to the gall-bladder separated and showed a typical ulcerative perforation of the duodenum about two inches below the pylorus, and

on the posterior surface and upper border of the duodenum was a perfectly clean punched out area of the gut wall. The serous surface showed a perforation 3-16 of an inch in diameter, and on the mucous surface there was an erosion 7-16 of an inch wide. There was no special induration around the ulcer and there were no signs of any accompanying ulcers in the stomach. There was no obstruction to the pylorus and no pathological changes in the gall-bladder or bile ducts. The author regards the case as one of acute ulceration.

An Explanation of Suggestions in Therapeutics.—This subject is discussed by B. F. Beebe, who regards the only rational explanation to be found in the physical basis and functions of the nervous system, and states that we must investigate the matter along the lines of physiological psychology. He says that since the vitochemical constitution of the millions of gray cells is the physical basis, and the sum total of their sense of feeling constitutes the emotion of the man, and that physical desire is the direct cause of impulse, it is not difficult to appreciate the direct connection between good and bad conduct and the normal and abnormal brain cells. "As we feel, we think, and as we think, we act," is an old truism. Emotional disturbances then are, in fact, the sum total of the physical or chemical commotions in the gray cells; and this commotio cerebri is great or little, according to the constitution of the cells and the influences affecting them. Thus every sensation of seeing, hearing, smelling, tasting, and touching becomes in fact a suggestion, and these act directly upon the brain cells, producing the so-called mental impressions. In this way, therefore, the whole world is swayed by psychic influence; that is, by suggestion. It is well to remember that no one does voluntarily other than he desires, and that the dominant desire is ever the will power for the time being. It is a great lesson that one should be careful how he constitutes his desires; how he constitutes the physical basis of mind, viz., his nervous system. Involuntarily and of necessity, says the author, do we respond to the dictates of physical desire. We should therefore be careful about forming our habits. Free will, he considers to be, in the strict sense of the term, nonsense. Determinism is the only rational conclusion. Our brains determine for us our every action.

American Medicine, March 31, 1906.

Prophylaxis of Lobar Pneumonia.—J. M. Anders believes that the prevalence of the disease is much influenced by indoor conditions, especially such as obtain during the cold season. Effective prophylaxis embraces four main objects: (a) The thorough disinfection of pneumonic sputum as well as that of healthy persons, including the secretions of the upper air-passages; (b) isolation of the patient, especially from the debilitated; and disinfection of the sick chamber, together with its contents, after death or recovery; (c) the removal of personal predisposition, and (d) the introduction of certain public measures. Thorough and prompt sterilization of pneumonic sputum and of the secretions from the upper respiratory tract and then the prompt destruction of the same by burning is a matter of first necessity. Disinfection of the bed-linen and body-linen, the mattress and the room occupied by the pneumonia patient is also a primary requisite. These matters do not receive the rigid care and attention which they richly merit by the average general practitioner. The public measures of greatest value may be summarized as follows: The issuance of drastic edicts against spitting on the sidewalks; the work of street cleaning and street sprinkling should be looked after by bureaus or boards of public health, to whom should be given full executive authority; there should be greater diffusion of popular information concerning efficient ventilation of our office buildings, theaters, courts of justice, manufacturing establishments, churches, public schools, and passenger and street railway cars, and also regarding details connected with the subject of the prevention of lobar pneumonia stating simple, plain facts about the way in which the disease is spreading.

Cystitis.—Charles C. Norris reports two cases which are typical of two of the rarer forms of the disease. In Case I, a vesical calculi formed around a heavy silk suture. Two years previous the patient had had a suprapubic cystotomy performed for severe cystitis. This gave temporary relief. A few weeks later the patient passed a silk ligature covered with urinary salts. Following this, or for the last two years, the patient had symptoms of cystitis and occasional interruption of the stream of urine. Cystoscopic examination revealed a stone about the size of a pigeon's egg suspended from the superior aspect of the bladder. Vaginal cystotomy and removal of the stone was done. The wound healed rapidly and the patient was discharged cured four weeks after operation. Case II was one of exfoliative cystitis, the patient being a colored woman of thirty-two, with no evidence of gonorrhea. Acute cystitis occurred with sudden onset. Symptoms for the first week were very severe. Three weeks later the urethra became blocked by a sloughing mass, which on removal proved to be an entire cast of the bladder, consisting of the mucosa and a portion of the muscularis. Symptoms from this time began to subside, and two months later the patient was entirely well. This case had no assignable cause. The uterus was in normal position, there were no neoplasms blocking the pelvis, nor was the patient pregnant. No strong chemical solution had been used in the bladder.

The Conradi-Drigalski Medium for the Isolation of B. Typhosus.—Clarence L. Cole, in studying this subject, divided the work into the following four steps: (1) Transferring colonies from plate cultures prepared the preceding day to litmus milk, glucose agar, bouillon, potato, and ordinary agar. (2) Examination of cultures in the different mediums. (3) Preparation of plates for inoculation. (4) Inoculation of the plates. The results of the investigation are given in tabular form, which serves to show the number of cases from which *B. typhosus* was isolated, as well as the appearance of cultures in litmus milk, the motility and the reproduction of organisms isolated from the stools and which produced blue colonies upon lactose litmus agar. The medium served only to differentiate the colonies of *B. typhosus* from acid producers, but in that way facilitated the identification of that organism. Success with the medium in obtaining *B. typhosus* from every case depends in a great measure upon repeated examinations, and the difficulties encountered formerly in work of this character are only removed in the proportion which the colonies of *B. typhosus* present bear to those of acid-producing organisms.

The Pathology of Rabies.—A. Gordon gives a detailed account of the pathological findings in a case of rabies. He points out the constancy of Van Gehuchten's and Nélis' characteristic findings in the spinal ganglions. He calls attention to the absence of Négri's bodies in his case, bodies which are also considered by some writers as pathognomonic of the affection. Babes' tubercle is not a constant finding in rabies. Finally, he draws special attention to the presence of mast-cells, which, as is well known, were found in inflammatory areas. Since these cells were found by Dr. Gordon in the spinal ganglions, in which the characteristic lesion of rabies is usually found, he concludes that the presence of mast-cells corroborates the view that the ganglions are the place of predilection for rabic virus.

Journal of the American Medical Association, March 31, 1906.

Acute Dilatation of the Stomach.—J. B. Herrick reports two cases of acute gastric dilatation, one of which terminated in recovery, the first case, he thinks, with such outcome when complicated by pleurisy or pneumonia. Herrick reviews the symptoms, the distention, the characteristic vomiting, etc., and remarks on the diagnosis and the extremely unfavorable prognosis in these cases. The value of the succussion sound in diagnosis is emphasized. He is convinced that the treatment used in this successful case was life saving. It consisted in frequent gastric lavage, use of normal salt solution hypodermically and by the rectum, nutrient enemas, and hypodermic use of strychnine and digitalin. He also used a binder in his case, which he thinks possibly helped somewhat, at least, by keeping the stomach in its proper place. The possible value of ice applications in causing the stomach to contract is also mentioned. Herrick thinks it a treatment worth trying in future cases, though he did not employ it. Hot water or even hot air introduced into the stomach through a tube, he thinks, might also be of value. The etiology is in many cases obscure and the theories of the disease are not entirely satisfactory.

Intracranial Hemorrhage.—R. P. Peairs reports three cases of head injury illustrating his argument of the importance of early operative interference in certain conditions. In all three cases there was a head injury, followed by coma and pressure and irritation phenomena, but no definite localizing symptoms. In all three there was extensive meningeal hemorrhage over the right hemisphere. One of the patients, treated expect-

antly, waiting for the appearance of focal symptoms, died; the other two, operated on without waiting for such symptoms, recovered. He calls attention to these facts and to their bearings in the treatment of similar cases. The absence of focal symptoms does not mean that hemorrhage is not present, and valuable time may be lost in waiting for their appearance. He believes that an operation is indicated when there is a history of head injury, followed by loss of consciousness, if the patient has a persistent slow pulse, that is, one of fifty or under, later becoming rapid, and is gradually growing worse. It is certainly less dangerous to operate than to treat the case expectantly. No doubt many of these patients will die under any treatment, but he believes that many more could be saved by prompt surgical means.

The Neurons.—L. F. Barker reviews the history of the neuron doctrine and the actual state of our knowledge of the subject at the present day. He comes to the conclusion that "none of the theories opposing the neuron conception has led to the objective demonstration of the existence of a real continuity among the nerve elements," and that there is a marked difference between so-called neuronists and anti-neuronists in the interpretation of the known facts. The former admit only what is demonstrable, and not finding intracellular anastomoses, they do not feel called on to admit that they exist. The latter, while equally unable to demonstrate their existence, hold that they ought to exist, that continuity is *a priori* so probable that those who deny it should be compelled to prove to their satisfaction that it is impossible. He suggests that the multiplication of hypotheses may have been largely due to the assumption that the neurofibrils represent the sole conducting element in the nervous system, a point by no means yet satisfactorily proved. The questions of the possibility of nerve conduction, apart from the cell body and of the autoregeneration of nerve, are noticed, and the known facts discussed. Barker does not venture a positive opinion on either of these points, but does not deny their possibility. The disputed question as to the unicellular or pluricellular origin of the neuron and its peripheral nerve fibers is taken up and the remarkable investigations of Dr. Ross Granville Harrison, demonstrating that motor nerve fibers develop as processes of the anterior horns instead of being developed from the neurilemma cells along their course, are mentioned as among the most important of the recent contributions to our knowledge of the subject. But even if the pluricellular origin of the neuron could be demonstrated, it would still be an anatomic unit, but as an organ rather than a single cell.

The Blood-Clot Dressing.—H. O. Reik believes that the blood-clot dressing, recommended by Blake of Boston, in the mastoid operation, best meets the needs and offers the best results. Those who have tried it report no unpleasant results, and he thinks that it more nearly restores the natural conditions than do other methods in use. Even if the wound is not absolutely clean the normal blood possesses certain bactericidal power, which is greater after it is drawn from the vessels than while still in the circulation. It is present only when the blood is alkaline, and he thinks that some of the failures of the blood-clot dressing are perhaps attributable to the use of chemical antiseptics in cleansing the wound. On theoretical grounds, it would seem more rational to rely on dry cleansing with instruments and sterile sponges, or by washing out the wound with sterile salt solution, which, if it has any effect on the clot, would increase its alkalinity and power to control septic action. He adds some words on the technique of the blood-clot dressing: First, absolute cleanliness and removal of every particle of infected material; second, the closure of the wound in such a way as to prevent the introduction of new infection and to promote primary union. Chemical sterilization should be avoided and sterile salt solution should be used if irrigation is deemed necessary. Finally, for the closing of the wound the subcutaneous silver wire suture recommended by Halsted may be used. It can easily be disinfected and is itself antiseptic, and can be removed without pain at the proper time. A silver foil covering over the closed wound will add something to the protection. Reik believes that this will come to be accepted as a standard method in mastoidectomy.

The Treatment of Appendictis.—C H. Wallace, St. Joseph, Mo., divides appendicitis into six stages: (1) Inceptive stage, first forty-eight hours; (2) rapidly progressing stage, third, fourth, and fifth days; (3) nonprogressing or stationary stage; (4) interval, or chronic stage; (5) abscess stage; (6) the diffuse peritonitis stage. In the first of these all surgeons and many internists agree as to the advisability of operation. In the second, few surgeons favor operation, and observation shows that it increases rather than lessens mortality. Here Ochsner's plan of lavage and peristaltic rest by rectal feeding is sound surgery. In the third, rest and a guarded diet is advised, the case should be allowed to pass on to the interval period. This, the fourth stage, is the time for hopeful and ideal surgery. In the fifth, or abscess stage, he prefers two safe operations rather than one dangerous operation, first opening the abscess and later removing the appendix. In the sixth stage he believes that the least manipulation means the least mortality; simple incision with effective drainage with Fowler's position is the most hopeful treatment. Wallace summarizes his views as follows: "I believe, with the mind open for conviction and liable to complete reversal by future advancement, that: First, appendicitis is always a surgical disease. Second, every patient should have and is entitled to operative measures within the first forty-eight hours. Third, the rapidly progressing stage is the stage of applicability of the Ochsner treatment, and this offers the lowest mortality. Fourth, in cases coming to the surgeon with evidence of gradually subsiding symptoms, operation should be deferred to a more favorable period. Fifth, operation should be urged in every interval or chronic stage. Sixth, in abscess cases, two safe rather than one hazardous operation should be done. Seventh, in diffuse peritonitis all dependent cavities should be carefully incised and drained and not flushed, and, secondarily, the offending organ should be removed."

The Lancet, March 17, 1906.

Local Anesthesia for Cosmetic Operations.—L. E. Stamm commends the use of eucaine combined with adrenalin, the former of the strength of 4 per cent. and the latter of 1 per cent. Injections are made in the usual way around the lines of the intended incisions, care being taken to inject in the course of the nerves supplying the area. Fully fifteen minutes should be allowed for the anesthetic to take effect.

Multiform Streptococcic Infections Apparently All Derived from the Same Source.—Four cases are reported by A. Latham, E. P. Paton and H. D. Bruë. Case I was one of facial erysipelas in a girl, convalescent in ten days. Case II was that of the girl's mother, who had a swollen and painful right shoulder and later an inflamed area of skin and subjacent tissue, affecting the right chest and running down to the hip. A general septic condition resulted which proved fatal on the twelfth day. Case III was a sister of Case II, who had cared for the latter, and on the day after the latter's death complained of pain and tenderness in the right axilla. An abscess eventually formed in this locality and pus was evacuated, containing streptococci in pure culture; recovery. Case IV was the father of Case I, admitted to hospital with a sore throat and tonsils covered with yellow patches. General sepsis developed and streptococci were found in the blood. Death resulted in five days. In this series of cases one form of streptococcus appears to have been the cause throughout, but the nature of the illness produced varied in each case. This shows, say the authors, that though the form of the invading micrococcus may be the same in two cases, it by no means follows that the type of infection or its virulence will be of the same nature as the source from which the infection was derived. Ordinary erysipelas is well known to be due to a streptococcus. In the above series of cases a streptococcus would no doubt have been found in the erysipelas case if it had been looked for. It is particularly interesting, however, to note that the other cases, which there can be little doubt were infected from the case of erysipelas, did not develop this disease, but in one case a virulent form of cellulitis, without suppuration, accompanied by general septicemia, in a second case a local infection with suppuration, and in the third case an acute septicemia with suppuration in the peritoneum, primary infection being apparently in the tonsils. There is, of course, another reasonable explanation of the source of infection in these cases—namely, that they were all due to defective sanitation in the house in which the patients lived.

Splenomegalic Polycythemia.—One case is reported by R. Hutchinson and C. H. Miller, the patient being a man of forty-five years with an enlarged spleen, eight million red cells per c.mm. and one hundred and ten per cent. hemoglobin (Haldane). The general progress of the case after admission to the hospital was one of

gradual failure of the vital powers, with progressive stupidity, complete somnolence, and death. Full autopsy findings are given in the original paper. Increased viscosity was found to exist in the blood, and the general complex of symptoms strongly resembled those of previously reported cases, to which Weber has suggested the name of myelogenic polycythemia. Referring to individual symptoms as explained by autopsy findings, the authors note that the loss of vision and along with it attacks of giddiness and the terminal stupor, could be explained by the extensive areas of thrombotic softening found in the occipital lobes of the brain. That the amount of blood-forming tissue in the bone marrow was increased, cannot be doubted. This, with the absence of any signs of increased blood destruction in the liver, would point to the polycythemia being the result of an increased formation of red cells. The enhanced viscosity of the blood, which is the consequence of the polycythemia, and the abnormal strain which it throws upon the arterioles, may perhaps explain the high degree of vascular fibrosis met with. The fibrotic degeneration of the heart was certainly a most striking feature of the morbid anatomy, but was perhaps merely secondary to the thickening of the walls of the coronaries. As regards the softening in the occipital lobes of the brain and the large, pulpy areas in the spleen, there can be no doubt that they were due to thrombotic necrosis, the consequence of stagnation of blood which the high viscosity of the latter tended to induce. No evidence was found of any primary tuberculosis of the spleen such as has been alleged to occur in some of these cases, and the authors are inclined to think that in such descriptions, areas of infarction may have been mistaken for tuberculous foci.

British Medical Journal, March 17, 1906.

Painless Labor.—A case is reported by J. Allan of a young primipara who complained of slight pains in the stomach and upper abdomen. Examination revealed a slightly dilated os, full term having been reached and everything progressing in a normal manner. The child was born unconsciously, the mother experiencing no pain whatever. Recovery was uninterrupted. The perineum was not injured. Within two hours the os had dilated from a size of admitting only two fingers to a size allowing the safe passage of an eight-pound child.

An Aid to Prognosis in Typhoid Fever.—According to R. M. Simon, polyuria is a sign of good omen in typhoid fever. He submits a summary of 214 cases. Of these, 21 died. In 18 of these, the amount of urine was low, never exceeding 40 oz. Of the remainder, in 138 cases there was marked polyuria. In the other 55 cases no polyuria was noted, though in all of them the amount exceeded 40 oz. before convalescence was established. Of the 138 cases in which polyuria occurred, 16 showed a large amount throughout; in 28 polyuria began after the fall of temperature; in 34 it occurred before the fall of temperature; and in the remainder it showed itself as the temperature fell to normal.

The Transmissibility of Syphilis to Apes.—A note on this subject is made by A. S. Grünbaum and R. D. Smedley. A male chimpanzee was inoculated on the eyebrow by rubbing into it a portion of a chancre freshly excised. Signs of infection, indicated by some duskiness of the skin and a small nodule, appeared on the sixteenth day. For some days later these signs seemed to regress, but then general swelling and induration of the eyebrow with duskiness of skin became very evident. More recently exfoliation of the skin, leaving a surface yielding a serous or sero-purulent secretion, has occurred. The cervical glands on the same side are enlarged. The general health of the animal seems unaffected, and there is no rise of temperature. Although sought for, the *Spirocheta pallida* was not found until the thirty-seventh day after inoculation.

Physiological Notes on the Cancer Problems.—Sir W. Wade believes that, theoretically at least, the damage which leads to cancer may be due to something taken away from tissues rather than to something added, not necessarily in the cells, but perhaps in something behind the cells. He suggests that the growth of the cells up to a state of ripeness is due to the action of the motor nerves. This theory he applies to the mammary gland during lactation. The question now arises, what is the relation of the motor nerves during periods of long quiescence? *e.g.* between lactations and after the menopause? Is it possible that the nerve has also some inhibitory influence, and that while it does not drive the cells in one direction it prevents them from developing in another, prevents them, for example, from exercising that inherent and intrinsic power of growth the possession of which seems to be indicated by their mode of origin. If this is so, abolition of the nerve (for example, its withering) at the menopause might leave the cells at liberty to exercise this faculty of growth, unless it also was abolished at the same time. What results such an unfettered mode of growth would give we have not the least idea. But it might lead to the formation of gametoid cells or of cells which could not resist the entrance of leucocytes. Such symbiosis resulting in the formation of a new entity, with new endowments, something after the fashion of the formation of a lichen from the combination of a fungus with an alga. The development of cancer in the female reproductive organs at the menopause enforces still more powerfully in the author's mind the idea that the disease has its prime origin in some structural or vital default, either in the cells or in the nerves dominating them. He submits the suggestion that the origin of cancer may be intimately connected with senile changes in the nerve endings or in the cells or perhaps with both these combined.

Berliner klinische Wochenschrift, March 12, 1906.

The Virulence of Tubercle Bacilli.—Marmorek points out the difficulties attending a comparison of the degrees of virulence of different strains of tubercle bacilli. If the ordinary laboratory animals, such as rabbits or guinea pigs, are used, their susceptibility to the infection renders it almost impossible to recognize any differences in intensity. Marmorek employed the mouse, which is refractory to tuberculous infection under ordinary conditions, after having rendered the animal more susceptible to the bacillus. This he effected by injecting together with the emulsion of bacilli from 0.15-0.20 of a 2 per cent. solution of hydrochlorate of quinine. This substance paralyzes the power of phagocytosis and therefore reduces the resistance of the animal. By this method Marmorek was able to determine that two or three days old cultures of tubercle bacilli are much more virulent than those of the same strain which are several months old. If very small doses of young bacilli are injected intraabdominally into the mice the animals show lesions in the lungs after twenty or thirty days; if the same amount of old bacilli plus quinine is injected even after six or eight weeks no lesion is visible and it is only after the expiration of five or six months that the first tubercles can be demonstrated. The virulence of tubercle bacilli therefore depends on the age of the culture and decreases with long growth.

Inguinal Hernia of the Uterus.—Hilgenreiner describes a case of inguinal hernia in which the uterus formed part of the contents of the hernial sac. The organ was so firmly adherent that it was impossible to effect its complete liberation and consequently it was made use of in a plastic operation to assist in closing the very large hernial opening. He also reproduces in brief the histories of fifteen other cases of the same condition which he has collected from the literature, and which added to those collected by Birnbaum and Brunner, bring the total number of reported instances up to thirty-nine. The patients were women of all ages, though the condition seems to be most common in those of middle age who have passed through several pregnancies. In about half the cases the hernia was congenital, and in about half the cases also congenital malformations of the genital organs were noted. The prognosis of operative treatment is good.

Münchener medizinische Wochenschrift, March 13, 1906.

A Very Delicate Reaction for Bile Pigments.—Krokiewicz recommends the following reaction: Reagent A consists of a 1 per cent. watery solution of sulphanilic acid; reagent B is a 1 per cent. watery solution of sodium nitrite, and reagent C is pure, concentrated hydrochloric acid. The first two reagents should be kept protected from light. In order to make the test 1 c.c. each of A and B is well shaken in a test tube and most of the mixture is poured out so that about one-half c.c. remains behind. About the same amount of the urine or other fluid to be tested is added and well shaken. If bile is present the fluid becomes ruby red, the color changing to amethyst violet on the addition of one or two drops of hydrochloric acid and dilution with two or three volumes of distilled water. In fluids containing large amounts of bile it is better to dilute strongly with water before applying the test. The reaction indicates the presence only of bilirubin or slightly oxidized bile

pigment and is never produced in the urine after the internal administration of any of the drugs that are apt to interfere with the ordinary tests for bile. The author also states that it is more sensitive than the tests in ordinary use.

The Diagnosis of Extrauterine Pregnancy by Means of the X-rays.—Lichtenstein, who believes that the presence of fluid in the tissues is one of the greatest obstacles to successful radiography, describes a case in which the diagnosis of extrauterine pregnancy was made before operation by means of an *x*-ray photograph. In discussing this case he points out that it is easier to secure a successful radiograph of an extrauterine fetus than of one contained within the uterus. In extrauterine pregnancy the fetal membranes are thinner and contain but little if any liquor amnii. If the pregnancy is advanced the fetus usually emerges from the tube and finds a resting place in the surrounding parts so that the placenta comes to lie at one side; in the uterus, however, the placenta commonly overlies the fetus and offers an additional barrier to the penetration of the rays. In other words the greater amount of fluid which is present in the tissues and surrounding parts in the normal pregnancy accounts for the difficulty that is experienced in securing successful radiographs in this condition. That even a comparatively slight difference in the amount of fluid contained in the tissues may be of considerable importance as regards the success of the radiograph is shown by the fact that if two radiographs are made of a still-born child, the one immediately after birth and the other after the body has been preserved from twelve to fifteen days, the skeleton will be much more clearly marked on the second plate, owing to the dehydration of the tissues that has been effected by the preserving fluid.

The Treatment of Acute and Chronic Suppurations with Phenolcamphor.—Ehrlich says that while Bier's principle of treatment by hyperemia has met with universal commendation on the part of all authors, the method is difficult of application under the conditions of ordinary practice on account of the necessity of constant supervision of the patients by trained attendants which it entails. Ehrlich, in making preliminary observations on the action of the phenolcamphor mixture recommended a short time ago by Chlumsky, was so impressed with the value of the combination that he undertook an extensive series of tests in a garrison hospital, where, owing to the fact that the patients are always of the same class, satisfactory comparisons between the different methods of treatment could be made. He has treated by the phenolcamphor combination ninety six cases of all sorts of suppurative conditions. The result has been very gratifying, and as fifty of the patients were treated in the military hospital the conclusion that the time of treatment was considerably shorter when phenolcamphor was used than under the older methods of wet dressings and extensive incisions, can be verified by the official statistics. The mixture is composed of thirty grams of carbolic acid, sixty grams of camphor, and ten grams of alcohol. The oily fluid which results is employed as a wet dressing on gauze, or ganze saturated with it is packed lightly into suppurating wounds. The applications produce no undesirable effects, and in addition to their curative action are markedly anodyne.

Deutsche medizinische Wochenschrift, March 15, 1906.

Protective Inoculation in Man with Living Plague Bacilli.—Kolle and Strong describe a method of securing immunity against plague infection by means of protective inoculation with pest bacilli that have been reduced in virulence by repeated transplantations on artificial media. After experiments on animals had shown the nonpathogenicity of an organism that had been treated in this way a condemned criminal was inoculated with it. As no bad results followed, experiments were made on other persons with larger amounts and forty-two individuals have now received inoculations of an entire agar culture. A slight local reaction lasting two or three days is produced, as well as moderate fever extending over the same period, but the discomfort is said to be no greater than that attending ordinary vaccination. Animal experiments prove the high degree of immunity conferred in this way and the serum of the persons treated not only presented specific agglutinating properties for fresh virulent plague bacilli but also manifested well-marked protective power when injected into animals. The authors consider that it may be regarded as an established fact that the injection of such plague bacilli cultures is harmless, but they warn against attempts at application of the method unless the nonvirulence of the particular culture to be used has been demonstrated. Strains of plague bacilli which do not kill guinea pigs when given in the dose of two agar cultures may be regarded as harmless. Inasmuch as the living organism is used in producing immunity in this way the authors consider that it may be regarded as a true type of vaccination in the Jennerian sense.

The Use of Oil Enemata for Chronic Constipation in Infants.—Wunsch speaks highly of the use of injections of olive oil as a means of securing a cure in cases of obstinate constipation in nursing infants. The causes of the condition are numerous, but frequently in spite of all possible attention to the mother's diet, the hygiene of the infant's anus, etc., and the application of the customary remedies including ordinary enemata, suppositories, abdominal massage, laxative drugs, etc., attempts to cure the difficulty are ineffectual. In these cases the use of an enema of olive oil repeated about other day for a certain length of time may bring about a normal activity of the bowels. In illustration the author describes a case which had baffled all other means of treatment but remained permanently cured after eight injections of olive oil.

Meningococcus Pharyngitis as the Underlying Cause of Epidemic Cerebrospinal Meningitis.—Ostermann describes culture experiments made on the families of the patients in six cases of cerebrospinal meningitis in an attempt to discover how many of those coming in contact with patients carry meningococci on their nasopharyngeal mucous membranes. Out of twenty-four persons examined seventeen were discovered to be cocci carriers, the identity of the meningococcus in each case being established by cultural methods and by agglutination with a specific serum. The author points out that this demonstration of the fact that a very large proportion of the apparently healthy persons in the environment of patients are the hosts of virulent meningococci, renders the problem of prophylaxis an extremely complicated one. Suitable tests showed that the organisms could be transmitted through the medium of the fingers, eating utensils, handkerchiefs, in coughing and in talking, etc. On the other hand, no measure has as yet been devised for checking the growth of the organisms in these persons, as their site of predilection is in the nasopharynx where they appear to be thoroughly protected against all ordinary therapeutic applications. Prophylaxis must therefore consist largely in warning the people in times of epidemics of the disease to avoid as much as possible coming in contact with others or being present in crowded places of public assembly. Regulations regarding the safe disposal of expectoration and nasal mucus should also be promulgated, and people should be warned to keep at a distance of about three feet in speaking or coughing.

French and Italian Journals.

A Case of Rapid Malignant Syphilis Complicated by Alcoholism.—J. Schwetz points out the particularly unfavorable effect which alcoholism has upon the human organism when there is also present another chronic morbid condition. The aggravation of the effects of syphilis by the presence of alcoholism is becoming more and more evident. The writer refers to recent researches in relation to general paralysis which tend to prove that this affection is the result of the combined influence of syphilitic virus and alcoholic poison. He then gives the history of an alcoholic, a woman forty-nine years old, who contracted syphilis. Specific treatment was instituted, but the patient could not resist her desire for alcohol. Her symptoms became more and more alarming, and within eight months after first being seen by the writer she succumbed. This patient's husband, who was similarly afflicted with syphilis, but whose habits were good, was apparently cured by appropriate treatment.—*Revue Médicale de la Suisse Romande*, February 20, 1906.

Pregnancy with Dermoid Cyst of the Two Ovaries. Epitheliomatous Degeneration of One of the Cysts. Double Ovariotomy.—M. G. Chavannaz declares that cancerous degeneration of dermoid cysts is of three types: Epithelial, sarcomatous, and endothelial. The co-existence of two dermoid cysts, one of them undergoing cancerous degeneration, with pregnancy, is exceptional. The writer then gives a detailed history of a patient presenting these complications. The patient was thirty-seven years old and had had four children. In the present pregnancy at about four months the symptoms indicated operation. A cystic tumor of the ovary or of the tube, with perhaps a slight torsion of the pedicle, was diagnosed. Laparotomy discovered on the right of the uterus a tumor the size of an orange. There were many adhesions. The tube, red and very large, was situated in front of the tumor. The

pedicle of the latter was twisted. Both tumor and tube were extirpated *en masse* without puncture. The left ovary was the size of a large nut, and was removed, together with the tube on this side. On the anterior parietal peritoneum of the right side, three hard, small vegetations were also extirpated. The operation was not followed by any unhappy results. The patient, however, succumbed to a recurrence of the malignant growth. Histological examination of the epithelioma.—*Journal de Médecine de Bordeaux*, February 25, 1906.

Extraction of a Fibrous Uterine Polypus Immediately After Labor.—Janvier relates the history of a case which he has recently observed. He was called to attend a woman who was in the first throes of labor. Within the last sixteen years she had had two children, nine years apart. It was about mid-year in 1903 that the patient began to suffer from menorrhagia, but she did not consult a physician for this trouble. On February 18, 1905, the flow ceased with the beginning of pregnancy. The patient had daily violent colic. A tumor was detected, which was situated in the lower part of the abdomen. Pregnancy was terminated by a natural delivery, but the uterus remained large. The contractions became more and more violent and the writer, thinking of the possibility of a twin pregnancy, introduced his hand into the uterus. He discovered implanted on the fundus a mass larger than the head of a fetus, and he diagnosed a fibrous polypus of the uterine cavity. As the patient was becoming weak from the considerable loss of blood, Janvier decided upon intervention. The tumor was pedunculated and was removed by torsion. It weighed 520 grams. The hemorrhage was arrested at once and the patient began to improve. One month later she was out of bed.—*Revue Française de Médecine et de Chirurgie*. February 25, 1906.

The Cutaneous Eruptions of Malaria.—M. Claude says that, like the majority of intoxications and of diseases in general, malaria has its cutaneous manifestations. Billet was one of the first to describe these lesions and his observations of febrile malarial erythema are all supported by blood analyses. The origin, then, of these lesions is undeniable. Moty has reported certain observations of cutaneous gangrene which were observed during malarial infection. He believes that this was caused by the obstruction of the capillaries by melaniferous leucocytes, consequent failure of nutrition, and final necrosis or gangrene of the tissues. Whatever may be the cutaneous lesions noted, very often febrile, in a malarial country, they ought always to suggest the possibility of malaria. The writer appends the history of a number of cases in point. He concludes that every cutaneous manifestation occurring in a malarial patient seems to augur a relapse more or less grave. In order to prevent a serious relapse, all appropriate therapeutic measures ought to be taken, in spite of the fact that experience seems to show that they have little effect.—*Le Caducée*, March 3, 1906.

Experiments on the Pathogenesis of Round Ulcer of the Stomach.—G. Zironi has attempted to produce round ulcer of the stomach in animals by resection of the vagus below the diaphragm, and gives us his conclusions. In rabbits this procedure produced gastric ulcer in one half the cases operated on. It is impossible to say whether these ulcers would rapidly cicatrize, thus showing that they were of a different nature from true gastric ulcer, which shows no tendency to healing. The ulcers produced were in the pyloric portion of the stomach. Fourteen animals were operated on, and most of them were killed after eleven to seventeen days. In one not killed until the sixtieth day there was a cicatricial nodule found, such as would have remained after a healed ulcer. The ulcers were the size of a pin-head, mostly round, sometimes double, and situated in the greater curvature, or at the pyloric end.—*La Riforma Medica*, February 10, 1906.

Infantile Cerebral Paralysis, Post-Scarlatinal.—Salvatore Pastore discusses the origin of cerebral paralysis as a result of infective diseases, especially scarlatina. The cerebrum and other parts of the nervous system may be affected by various microorganisms, such as *Bacillus coli*, typhoid bacillus, staphylococcus, pneumococcus, diphtheria bacillus, erysipelas germ, and scarlatinous poison. The effects on the nervous system are produced by the toxins generated, and not directly by the germs. The forms of myelitis that are produced by germs are anterior poliomyelitis, acute ascending spinal paralysis, and acute spinal paralysis. These infections are epidemic. Cerebral lesions of various kinds may also be produced. The author presents a case of spastic paralysis resulting from scarlatinal infection, which began about the thirtieth day of the disease, in a child of six years. At first there was complete hemiplegia, with facial paralysis and aphasia. The upper extremity remained permanently paralyzed, with contracture, athetoid movements, and normal electrical reaction. We may distinguish the case from anterior poliomyelitis by the fact that the leg recovered and the arm remained paralyzed, by the contracture, the exaggerated reflexes, athetosis, and normal reactions. The history contradicted the belief that it might have been a monoplagia. Had it been a spinal paralysis it would not give a history of hemiplegia, as that is the common form.—*Giornale Internazionale delle Scienze Mediche*, February 15, 1906.

Constricted Liver Lobes and their Surgical Treatment.—Guido Senni states that constriction of a portion of the liver occurs in women, never in men, the lobe becoming atrophied and displaced downward. It is referable to tight lacing. The location varies with the level at which the constriction occurred, as well as the amount of tissue involved. The constriction may become pedunculated. The predisposing cause is ptosis or hypertrophy of the organ. It is never found in children or men. The cystic duct follows the descent of the liver and stasis of the bile occurs, resulting in calculus. Diagnosis is made by finding a tumor in the right side of the abdomen, connected with the liver, moving with respiration; dullness is continuous with that of the liver; the hepatic flexure of the colon is pushed down with the tumor so as to lie obliquely across the abdomen. Pressure causes atrophy of the liver tissues, and the peduncle slowly forms by which it is held to the liver, containing blood-vessels and bile ducts. There may be no symptoms observed by the patient, or the tumor may be felt by her, or there may be disturbances of digestion and of the nervous system, and pain, with sensation of dragging in the abdomen. There may be resonance from the colon heard behind the tumor, and the percussion area of the liver is changed. Treatment by abdominal bandages is useful in some cases. In most cases an operation must be performed to relieve symptoms. Fixation to the abdominal wall has been done with success, and the constricted portion may be removed.—*Il Policlinico*, February, 1906.

Lumbar Puncture in Cerebrospinal Hemorrhages.—Marc Hérault has made a very careful study of this subject. He states that if the liquid is white the central origin of the hemorrhage can be recognized by complex methods only. Histological examination is necessary in such cases. If the liquid is red, especially a yellow red, and if it gives the spectroscopic and chemical reactions of hemoglobin and if there has been no error in the technique it can be quite safely affirmed that the hemorrhage is of central origin. If the liquid is yellow its color may be of hematic origin, of biliary origin, or of sero-chromic origin. Lumbar puncture which results in the collection of a bloody liquid containing red globules proves the existence of intrameningeal hemorrhage. A yellowish liquid is an almost sure index of hemorrhage in the state of resorption. As to the diagnostic value of hemorrhagic cerebrospinal liquid, as far as the etiology of the hemorrhage is concerned, it is relative and must depend upon the history of the case, clinical appearances, and the study of the other characteristics—cytological or microbiological—of the cerebrospinal liquid. Every cranial or spinal traumatism, whether or not it be followed by fracture or dislocation, may or may not yield a hemorrhagic, bloody liquid on lumbar puncture. By successive punctures the evolution of a hemorrhage—its resorption and infection—may be followed. As well as in surgical hemorrhages, lumbar puncture is of value in medical hemorrhages. By this proceeding has been recognized the existence of meningeal hemorrhages in the course of cerebrospinal meningitis, of septic meningitis (pneumococcus), of fibrous meningitis, and of tuberculous meningitis.—*Revue Française de Médecine et de Chirurgie*, January 25, 1906.

Achondroplasia.—Auché has recently had a patient with this affection under his care. The child is about three years old. The mother is twenty-six years old and in good health. The father died by accident at the age of thirty-two, but was in good condition. This child was born at term, but at birth the enormous size of the head and the small size of the body was very noticeable. He walked at eleven months and cut his first tooth when nine months of age. Last year he underwent an operation for inguinal hernia. His body is small while his head is as large as that of an adult. The teeth are a little carious, but have a normal implantation. The arms as well as the legs are short. The musculature is very well developed. The genital organs and all of the visceral organs are normal. The patient will be subjected to thyroid treatment.—*Journal de Médecine de Bordeaux*, January 28, 1906.

Book Reviews.

A Text-Book on Psychiatry for Physicians and Students. By Leonardo Bianchi, M.D., Professor of Clinical Psychiatry and Neuropathology in the Royal University of Naples; Minister of Public Instruction in Italy; Medical Director of the Provincial Asylum of Naples; Corresponding Member of the Medico-Psychological Association of Great Britain and Ireland, etc. Authorized Translation from the Italian, by James H. Macdonald, M.B., Ch.B., Glasg., Senior Assistant Physician to the Govan District Asylum. With 100 Illustrations. New York: William Wood & Company, 1906.

In these latter days when, more than at any other period in the world's history, of the making of books there is no end, a new work, whether on general medicine or dealing with some special branch, must be distinguished by some feature peculiar to itself if it would win the favor of the reading medical public. Of books on psychiatry there is no dearth, and many of them are seemingly so complete as to leave no room for another treatise, at least until this science has progressed far beyond the point at present attained. Most of these, however, approach the subject from the side of symptomatology and treatment—a very practical side, indeed, yet not entirely satisfying to the student of mental aberration who is not content with a simple classification and a ticketing of the multitudinous deviations from the mental norm, but would know the pathological basis of the conditions that confront him. This is perhaps the distinguishing marks of Bianchi's treatise, that it strives to unveil the pathogenesis of psychic disease by a close study of the physiology and pathology of cerebral function. The author has endeavored to correlate the results of all who have been working independently in the various fields of biology, psychology, physiological and pathological chemistry, cerebral anatomy and histology, bacteriology, and other lines of investigation bearing directly or indirectly upon the normal and abnormal workings of the human mind. This is not to say that other recent writers on psychiatry have altogether neglected these foundations of the science, but they have not delved therein to the extent that Bianchi has delved. This is perhaps natural, since it is in the Latin countries, especially Italy and Spain, that the most signal advances have been made in cerebral and neural physiopathology. The treatise before us is not, however, so purely "scientific" as not to be practical. The all-important subjects of symptomatology and treatment are not ignored, but are treated of in a thoroughly comprehensive and practical manner.

The work is divided into three parts, following the usual introduction. In the first part the author treats of the normal anatomy and physiology of the brain—of its centers and paths. Part II. is devoted to a consideration of the physiopathology of perception, attention, memory, ideation, the emotions and sentiments and the will, and of consciousness. This is the introduction to the clinical section, in which is considered the symptomatology of mental disease—"to the examination of the symptoms of the disordered mind, and to the analysis of their signification in relation to the facts of normal psychology and to the laws which govern their manifestation." In the final and largest section, the author enters upon the clinical side of his subject, treating of the different diseases of the mind, their symptoms, and their treatment. This section is illustrated with many case histories. The classification which the author has adopted will be found to differ in some respects from those usually followed. In some cases he has grouped together diseases which other writers regard as distinct, in others he has separated certain clinical forms which are usually classed—"confused," Bianchi says—under one name. Many psychiatrists will not agree with the Italian author in this rearrangement of mental disorders, nor will they follow him in his conception of the physiopathological basis of some of the psychic disturbances, but they will find food for reflection in what is here contained, and for specialists this is after all what is sought for in a treatise. For students of this branch of medicine Bianchi's work will be found an excellent foundation, and whatever in it may be contra-orthodox may be corrected by the teachings of other authorities, of whom there is fortunately no lack.

A Laboratory Manual of Physiological Chemistry. By Elbert W. Rockwood, M.D., Ph.D., Professor of Chemistry and Toxicology and Head of the Department of Chemistry in the University of Iowa, etc. Second Edition, Revised and Enlarged. With One Colored Plate and Three Plates of Microscopic Preparations. Philadelphia: F. A. Davis Company, 1906.

In the second edition of this manual, which appears now after a period of seven years has elapsed since the first was issued, the author brings the subject-matter thoroughly up to date in accordance with the many advances of physiological chemistry. The book comprises not only a series of laboratory lessons, but also covers in outline the theory of the subject and should suffice for the needs of the elementary student, in conjunction with the oral teaching of the laboratory and the lecture room. No attempt is made to cover the more abstruse phrases of the subject, and the elementary facts and principles of physiological chemistry are lucidly brought out. The book in this second edition will prove acceptable to students as well as to teachers.

Pharmacology and Therapeutics. By Reynold Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine at the New York Post-Graduate Medical School and Attending Physician to the Hospital; Consulting Physician to the Nassau Hospital; Visiting Physician to St. Mark's Hospital; ex-President of the American Therapeutic Society; Fellow of the American Academy of Medicine; Vice-Chairman of the Revision Committee of the United States Pharmacopeia, etc. Sixth Edition; based on the Fifth Edition of White and Wilcox's "Materia Medica and Therapeutics." Philadelphia: P. Blakiston's Son & Co., 1905.

This is the larger and concluding volume of the author's work on Materia Medica and Therapeutics, the former volume of which was noticed in the Medical Record of February 10. In these two volumes there is, of course, much repetition; at the same time they are essentially different, particularly in the classification employed. In the former volume the classification was based on the class and chemical division or natural order to which the therapeutic agents belong; in the present volume the basis of classification is the particular physiological system upon which the drugs and other agents chiefly act. There is a very complete list of drugs and preparations, with dosage, and a detailed account of their physiological action and therapeutics. The two volumes cover the ground of Materia Medica and Therapeutics very thoroughly; indeed, the work is almost encyclopedic in its completeness. We would recommend the first volume more particularly to the medical student, and the present one to the practitioner.

Differential Diagnosis and Treatment of Disease, a Text-Book for Practitioners and Advanced Students. By Augustus Caillé, M.D., Fellow of the New York Academy of Medicine; Member and ex-President of the American Pediatric Society; Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital; Visiting Physician to the New York Post-Graduate and German Hospitals; Consulting Physician to Isabella Home and Hospital. With 228 Illustrations in the Text. New York and London: D. Appleton and Company, 1906.

The plan of this book differs from that of most medical treatises in that it deals only with the purely practical aspects of disease, the etiology being merely alluded to in brief paragraphs and the pathological anatomy being practically ignored. Diagnosis and treatment, prophylactic and curative, are the subjects dealt with, and dealt with most thoroughly, by the author. The book is not adapted for the use of students, since it omits a consideration of the fundamentals of the study of disease, but for the practitioner, who is supposed to be grounded in the fundamentals and needs for immediate application reminders on the practical points of diagnosis and treatment, we know of no more generally satisfactory work. We wish the author were a little more hopeful in his therapeutics and had not confined himself quite so rigidly to a consideration of the measures which he personally regards as efficacious. In the treatment of disease there is a wide latitude of opinion, and the writer of a text-book should not ignore methods of treatment which other authorities have found serviceable, even though he cannot endorse them himself. A lecturer before a class of students or post-graduates naturally and properly expounds his own views, but the writer of a text-book cannot, or should not, ignore the work of other therapeutists. The reader expects to find a résumé of all that is known on the subject, even if certain methods are mentioned only to be condemned. For this reason we cannot recommend this work as all-sufficient for the young practitioner, but this is not to say that we do not recommend it at all. On the contrary, it is a book that should be in every physician's library, for the part dealing with diagnosis is superlatively good, and that treating of therapeutics bears the stamp of originality and individuality which is most valuable, only—it must be supplemented with other works written by men with other views of treatment. The reviewer, it is needless to say, is a therapeutic optimist, and he does not like to see methods which he has found, or thinks he has found, useful, entirely ignored in a work put forth as an authoritative guide in the treatment of disease. He may be an enthusiast, but in the vital subject of the saving of life he would have the floating oars charted as well as the life-boats and rafts. With this reservation, Dr. Caillé's book can be commended as a thoroughly practical and useful guide to the young practitioner.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held March 1, 1906.

THE VICE-PRESIDENT, DR. W. GILMAN THOMPSON, IN THE CHAIR.

Resolutions Relative to the Smoke Nuisance.—A resolution was offered and passed that a public hearing be given by the Department of Health, in order that those who have complained of the smoke nuisance might be heard; and also that what had been received by the Council concerning the abatement of it be referred to the Board of Health, with the recommendation that the Health Department renew the agitation for a stricter enforcement of the law governing the smoke nuisance.

The scientific business of the evening was devoted to a consideration of the upper air tract as affected by influenza, and was held under the auspices of the Section on Laryngology and Rhinology.

Lantern Slides of Sections of the Nose and Accessory Sinuses.—Dr. LEWIS A. COFFIN gave this lantern slide demonstration.

Etiology and Bacteriology of Influenza.—Dr. WILLIAM H. PARK presented this paper, which was read by Dr. Field. He described influenza as we understood it at present, and said that in years following a pandemic the cases became less characteristic and more difficult to separate from other infections. At first it would seem an easy matter to find a bacillus now known to be so abundant in the bronchial secretions, but in view of the fact that it required hemoglobin, or some derivative of it, for growth, it was easy to account for the failure. Therefore on the usual culture media it did not grow, while the pneumococci and streptococci in the throat did grow, and thus led to confusion. The influenza bacilli were, as a rule, in great numbers in the characteristic tenacious, yellowish-green expectoration of those suffering from influenza. The first sputum coughed in the morning was apt to be the best for bacteriological examination. If a little of this was smeared on a cover glass and stained with weak carbolfuchsin, 1 part in 10 solution, there would be seen, if the case were one of true influenza, great numbers of tiny bacilli arranged in characteristic groups or lying in or between the pus cells. The smears were stained for five minutes. The cases in which the nostrils, rather than the bronchi, were attacked, were less easy to study by smear examinations, as many other bacteria were apt to confuse the picture. The background of the field appeared a pale red, from which stood out the red nuclei of cells and the bright, tiny bunches of influenza bacilli. Other bacteria, when present, were usually less deeply stained. The influenza bacilli were decolorized by Gram's method. No spores were ever developed. Although the smear examination gave a probable identification, it was not absolute; only a pure culture made identification possible. There was still a difference of opinion among bacteriologists as to whether certain bacilli were those of influenza or not. Rabbit, pigeon, sheep, horse, and human blood were used to furnish the hemoglobin necessary for the development of the bacilli. The influenza group comprised both the influenza and the pseudoinfluenza bacilli. The latter contained the Koch-Weeks bacillus, the pseudoinfluenza bacillus, the *Bacillus catarrhalis*, the bacillus of whooping-cough, the trachoma bacillus, and others. At present there were but few cases of characteristic pure influenza, but this bacillus or some closely allied form was still frequently met with as associated with other bacteria. For instance, for about one month last winter there was a very fatal form of bronchopneumonia following laryngeal diphtheria. In nearly every case cultures from autopsies showed nearly half, or more than half, the bacteria in the lung to be influenza bacilli. In measles, scarlet fever, whooping-cough, bronchitis, and other inflammations of the respiratory tract, this part was at certain seasons frequently the seat of infection with the influenza bacillus. At other times few were found. Tuberculous cavities in the lung were especially the seat of influenza bacilli. In times of pandemics the majority of cases considered to be influenza clinically, prove so bacteriologically. Several years after an epidemic, when the cases became milder, it was practically impossible to say whether most cases of so-called grip were due to influenza bacilli or to the pneumococcus or other organisms. The autopsies in fatal influenza cases often showed many tiny cavities containing pus. Many severe cases that recovered suggested the same conditions, as the patients coughed up large amounts of sputum containing purulent masses. These cases might persist for months and years with influenza bacilli. A large percentage of advanced consumptives were found to be infected with the influenza bacilli. Influenza bacilli from cultures or in sputum when dried rarely lived forty-eight hours. It seems impossible that they ever lived over one or at most two weeks. It was impossible to produce influenza in animals except in the higher monkeys. There was a moderate immunity which lasted for some months after a true infection with the influenza bacillus. Prophylaxis seemed almost impossible; the expectoration, however, should be carefully attended to so as not to reach others in any way. The intervals between the great epidemics were too long to attribute them wholly to the lack of suitable persons for infection.

Symptoms and Treatment of Influenza.—Dr. CLARENCE C. RICE read this paper. He said that while influenza manifested itself by many points of attack and by most varied clinical phenomena, we ought not in our zeal for difficult diagnosis to attribute simple catarrhal processes to the special infection which alone could produce influenza. He reviewed the history of this affection from the fourteenth century. In discussing the clinical phenomena he called attention to the three or four days of mental and physical depression which often preceded the nasal and pharyngeal outbreak as being peculiarly significant of influenza, although this incubation was not nearly as apt to be present when the disease was epidemic and virulent. The symptoms were those of a severe nasal and pharyngeal catarrh, and within twenty-four hours the infection usually reached the pharynx. There was no characteristic regularity of temperature in the nose and throat cases of influenza. The temperature was apt to be remittent in character, after the first outbreak of fever, which ran from 101° to 104° F. The nasal passages were more or less occluded by soft tissue swelling. The congestion was observed by Dr. Jonathan Wright to be more bluish in tone than in acute coryza. In influenza there was no regularity in the amount or kind of secretion. The rhinitis did not, from the standpoint of discharge, run the course of a simple coryza. The matter of relapse was an important differential point. The most experienced physician could not state positively when the catarrhal symptoms were at an end, for even if there was no lasting lesion the infection might perhaps attack a sinus, the post-nasal space, or the ear, and again there might be symptoms of general depression and muscular weakness, so that recovery was slow and discouraging. If such secondary inflammation had not taken place by the end of the third or fourth day, danger of such complication was usually over, though these complications had followed after the patient was up and about. An attempt to classify the rhinitis of influenza into the catarrhal, the hemorrhagic, and the purulent stages was not very correct clinically, but was useful for purposes of description. In regard to the hemorrhagic variety, it was undoubtedly true that epistaxis was more apt to occur in an influenza than in simple rhinitis. It was also true that bleeding occurred frequently in cases where there was a preexisting ulceration of the cartilaginous septum, but the hemorrhagic variety could hardly be

called a distinct type. Blood might be found present in ordinarily severe cases where there was not more than the usual degree of nasal congestion, or it might be found where there was a hemorrhagic diathesis. The hemorrhagic rhinitis commenced with the same catarrhal symptoms as did the more common variety, and the bloody discharge did not usually appear until the third or fourth day, although in virulent cases the blood might appear at the onset of the disease. The blood came as frequently from the middle turbinated region, where there were no ulcerations, as from the preexisting erosions on the nasal septum. The diagnostic value of the ecchymotic spots which were occasionally seen on the soft palate and uvula was considered by Franke as very great in doubtful or chronic cases. Dr. Rice had also noted such localized areas of congestion, and one should bear in mind their importance in differential diagnosis. Permanency of congestion of the anterior pillar could be explained by the strong tendency to chronic congestion of the tonsils, this long-continued hyperemia of the tonsils leaking through into the anterior pillars. Submucous hemorrhagic infiltration in the larynx had been observed, and a hemorrhage into one vocal band was not an uncommon occurrence. In speaking of purulent discharges, it might be said that some degree of admixture of pus might be present at any time, even if there was no special symptom of sinusitis. When the discharge remained almost entirely purulent there was strong probability that the sinuses were involved in the acute process. Purulent inflammation of the sinuses occurred much oftener in the course of influenza than in a simple catarrh, and was much more apt to become chronic, because the nasal tissues remained congested and thickened for so long a time and drainage was so greatly interfered with. All writers were agreed that sinus disease was much more frequently a complication of grip than of any other form of rhinitis. In the minority of cases grip attacked the pharynx before it did the nasal passages, and developed some grade of tonsillar inflammation and general catarrhal pharyngitis before it ascended to the post-nasal cavity and nose. What had been said of nasal swelling was true also of the pharynx. The congestion was greater in simple catarrhal tonsillitis, but in influenza it was firmer, lasted longer, and recovery to normal size took longer. Swallowing was not so painful as in acute follicular tonsillitis. Exceptionally influenza attacked the larynx first and later extended downward into the bronchi. In these rare cases the nasal and pharyngeal symptoms were slight in nearly all cases. Cough, hoarseness, and partial loss of the voice were prominent symptoms, though the congestion and swelling were not very pronounced. The recovery of the voice was characteristically slow. Among extraordinary manifestations of influenza might be classed the hemorrhagic type, sinus disease, and that condition graphically described as septic edema of the upper air passages. Deviations from the normal in the nasal passages did not predispose to influenza, as was supposed by many, but enlarged tonsils might furnish vulnerable foci for infection. No specific therapeutical agent was known whereby influenza could be quickly aborted or controlled. The indications for treatment were to support the strength, to control the fever and the pain, and by judicious care to prevent such complications as chronic catarrh of the nose and pharynx, suppuration of the sinuses, middle-ear disease, dangerous inflammation of the larynx and bronchi, and to ward off pneumonia. Disastrous results could be avoided by resting in bed longer than was usual, and remaining in a warm and even temperature. Since there was no great general prostration, cathartics should be sparingly used. Sedatives were indispensable in controlling pains in the head and body. Ice packs applied to the forehead, nose, eyes, neck, and throat during the early stages were useful. Bloodletting in the nose and tonsils had served a useful purpose in plethoric subjects. He did not recommend sprays of cocaine and adrenalin. A sedative and protective powder, like the compound stearate of zinc, to which less than one-half of one per cent. of cocaine had been added, with perhaps a small amount of menthol and camphor, was preferable. Nasal washes should be alkaline and used by means of a douche cup. He did not think well of the spray for the anterior nares.

Dr. Henry L. Swain of New Haven, Conn., opened the discussion. He said that when changes in the upper air tract showed themselves in influenza, two distinct pictures occurred to him, which he contrasted. It had been shown that the germ of influenza was with us, and might remain in the system for two years, in the cavities of the lungs, for instance. Therefore it might be stated that the germ did not exist there without, under certain conditions, producing some effect. The contrast pictures were made from the experience of a rhinologist and otologist. At a European clinic some time ago a bleb upon the drum was shown as the rarest of clinical experiences. At New Haven he saw twelve such cases, and every year seemed to bring its quota of vesicles upon the drum. Again, abroad he saw two rare cases of acute pharyngeal sinusitis; yet in his comparatively small practice in New Haven he saw sixteen similar cases. Every year he saw cases of grip in a modified course, and the range of symptomatology must now be shown to have altered. Among the possible causes for this he mentioned the depression caused by the germ, the use of the coal-tar derivatives, and the tremendous speed in which we lived. In grip the germs gained access to the system in a different manner than other germs did; the integrity of the epithelium was broken, which permitted the entrance of the germs. The prevention of grip depended upon cell integrity. It was the ciliated epithelium cells which were the easiest affected by the grip germ; if this was denuded, then the grip germs may gain an entrance and give rise to the active manifestations of the disease.

Dr. C. G. Coakley said that the reports made upon smears from the nasal cavity in cases of influenza gave a mixed infection; seldom, if ever, was a pure culture obtained. Since 1890 many cases of chronic sinusitis had been attributed to influenza, and he thought this was wrong. To-day we were better able to diagnose these cases than we were in 1890; the methods of diagnosis were to-day almost perfect, and, therefore, more cases were diagnosed to-day than formerly, thus making it appear as though there were more cases. Pain was a symptom that often was ascribed to neuralgia; yet it might be found in many cases that the accessory sinuses were occluded, producing an obstructive headache, and not a neuralgia. So far as treatment was concerned, it should consist in establishing drainage when the accessory sinuses were involved. Anything which would open up the nose and contract the mucous membrane, and allowed the secretions in these cavities to get down and out, would be efficacious. Solutions of adrenalin, if judiciously used, were of value. Laryngeal hemorrhage was partly due to the condition of intense enlargement of the blood-vessels and the spasmodic cough which accompanied the disease; it was, in fact, a traumatic hemorrhage.

Dr. James E. Newcomb continued the discussion, speaking of the relation of influenza to the trachea. In looking up the subject he found that there were twenty or more cases recorded in which the particular symptom had been hemorrhage from the tracheal walls, and in more than one-half of these there had been given histories of a previous attack of grip; in practically all of these there was a history of more than one attack. Most of the patients were young adults. The sexes suffered alike. The youngest patient was sixteen years old. He thought such attacks of tracheal hemorrhage were more numerous than the published reports led us to believe. Every physician had had cases of hemoptysis without apparent cause; tuberculosis

had been suspected but did not develop, and the patients had been dismissed and the source of the hemorrhage remained a mystery. If such cases were followed a sufficient length of time, they might be enabled to make a classification of them. There was in each case a history of influenza. In such cases the most prominent symptom was the tickling and cough, some elevation of temperature if influenza was present, but none otherwise. The chest would show nothing in particular, and no bacilli would be found in the expectoration. The peculiar thing about it was that on examination of the upper trachea with the laryngeal mirror there would be found a varicose condition of the tracheal vessels. Blood in some cases had been seen to trickle down the clean tracheal wall. Dr. Newcomb believed the best treatment to be rest in bed, opiates, and spraying of the upper part of the trachea; astringent sprays could be used without ill effects. The important thing to consider in these cases was whether or not these were manifestations of tuberculosis, or did they belong to a class by themselves. Were these cases of incipient tuberculosis, with one expression of hyperemia? Many of these cases had been followed, but tuberculosis had not developed. This region was very vascular and it bore the brunt of the impact when the patient coughed. If there was an impaired local vitality, bearing in mind the fact that this was one region in which the influenza bacilli primarily attacked individuals, it was not at all uncommon, or impossible to believe that the influenza bacilli were responsible for the development of the varicose condition of the tracheal veins.

Dr. Emil Mayer said a question of much import was whether one was dealing with an ordinary catarrhal condition or with influenza, and too much stress could not be laid upon this. When one considered the greater amount of temperature which appeared as a rule in influenza, when one considered the wonderful amount of depression, when one considered that many members of the same family had a similar complaint, all seemed to him to be sufficient for the diagnosis of influenza, made without the necessity for expert knowledge. He agreed with Dr. Rice that cases of accessory sinus disease were more often associated with influenza than any other form of rhinitis. A great deal of discomfort was caused by this congestion of the nasal mucous membrane closing the nose, but he never used cocaine in such cases because of its dangers, and because it gave only a temporary relief. Adrenalin was his sheet anchor, if properly used; adrenalin in strengths from 1-5,000 or 1-10,000 should be used, with a small amount of sodium chloride added, which contributed greatly to the patient's comfort. Irrigations in some acute cases was of great value. Although it seemed impossible to drain the antrum of Highmore properly, yet by washing out this antrum great comfort was afforded these patients.

Dr. Robert C. Myles said that he had made a study in the anatomical rooms, for eight or ten years, of the nose and accessory sinuses, and he learned as much during the last year as during the first. After referring to the possible methods of prevention by isolation, disinfection, etc., he said that in the treatment of these cases he advocated the use of vapors of various antiseptics. Inspiring medicated air was beneficial. In the chronic cases one had a tremendous amount of work to do in the accessory sinuses, the disease conditions being kept up because of the lack of proper drainage. In cases in which the trachea and bronchi were involved the best results were obtained by tracheal injections, the medicament being dropped between the vocal cords, not introducing any instrument into the trachea. His favorite drug in such cases was iodoform.

A Modern Mummy.—The body of M. Markoff, the great Siberian railway contractor, says the St. *James's Gazette*, has been stuffed by his widow, fitted with glass eyes, and garbed in dress clothes, and it now inhabits a richly inlaid cabinet in a corner of Mme. Markoff's drawing room.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, March 2, 1906.

The President, Dr. T. Mitchell Prudden, in the Chair.

A Case for Diagnosis.—Dr. W. Gilman Thompson showed a man, forty-two years old, formerly a sailor and now a painter and paperhanger, who until two years ago had enjoyed good health. He then began to suffer from slight gastric distress after eating. Subsequently to this, he noticed that he became short of breath and blue in the face upon even slight exertion, or with any change of posture, such as stooping or lying down. There was evidently some obstruction to the circulation in the head and neck. On lying down his face became intensely congested, and dyspnea developed. Raising his arms above his head produced the same symptoms. A beginning aneurysm was suspected, but no other symptoms of it, other than the above, could be made out. Physical examination was absolutely negative, and the *x*-ray showed nothing.

Dr. Edward G. Janeway said there was evidently some pressure on the veins of the neck, and while an aneurysm was the most likely assumption, its presence could not be proven at this time. Future developments would have to be awaited. He drew attention to the paradoxical arterial pulse and venous flow.

Dr. Beverley Robinson said that aneurysmal tumors at times gave rise to very queer symptoms, particularly when associated with abnormalities of the heart or large vessels. The postural symptoms in this case might be due to congestion of the veins, or possibly to pressure on the larynx, which was a very sensitive organ. He suggested an examination of the larynx.

A Case for Diagnosis.—Presented by Dr. W. Gilman Thompson. The patient was a man, thirty-four years old, a motorman, who had a large mass in the left hypochondrium which had given rise to no symptoms whatsoever excepting a certain amount of gastric pain, coming on about one hour after taking food. There had never been any vomiting. The tumor had existed about nine months; it was a mass four or five inches in diameter, very hard and somewhat nodular, and the exact nature of it seemed doubtful. There had been some loss of weight, but with a carcinoma of that size more rapid emaciation would be expected. There was no history of injury. There was marked enlargement of the iliac glands on both sides. The possibility of Hodgkins' disease beginning in the abdominal glands had been considered, and also of pancreatic disease. There was no secondary anemia; no syphilitic or alcoholic history; the blood and urine were normal.

Dr. Janeway suggested inflation of the stomach and of the colon, in order to see the relation of the growth with these organs.

Dr. Robert Abbe thought the growth had more of a cystic than a solid feel, and he suggested that the case was possibly one of cyst of the tail of the pancreas, with some little induration of its surface. In reply to the question as to whether he would advise an exploratory operation in a case of this kind, he said that he saw no objections to an exploratory operation.

Dr. Walter B. James said he had never seen a case of Hodgkins' disease in which such an extensive glandular development in the abdomen was not accompanied by some enlargement of the glands in the neck. The case rather impressed him as being one of tumor of the tail of the pancreas, or possibly an irregular enlargement of a displaced spleen. As to whether an exploratory operation should be undertaken, that would depend, he thought, on whether the patient was growing worse or not.

Some Points of Discussion Relating to the Prevention and treatment of Pneumonia.—By Dr. Beverley Robinson. (See page 529.)

Dr. James said he was so enthusiastic in regard to the value of fresh and clean air in pneumonia that he would

hesitate to dilute it even with creosote. He had tried creosote some years ago—not as thoroughly or persistently, however, as had Dr. Robinson—and his results, both by the inhalation and internal use of the drug, were no better than they were in cases where it was omitted.

Dr. Edward G. Janeway said he felt about as Dr. James did in regard to the value of fresh air in pneumonia, and he generally aimed to have the patient kept in an airy, well-ventilated room. In some cases creosote seemed to do good, but it was difficult to say how much good. It was not so very long ago that blood-letting was regarded as the only rational method of treating pneumonia, and the same was practically true of the tartar emetic treatment. There was a time when no one thought of using strychnine in pneumonia; now the patients were not expected to get well without it. Dr. Janeway said he liked to divide his pneumonia cases into two classes: Those that required medicine, and those that in all human probability would get well without it. He could recall cases where one entire lung was involved, which recovered without medicine; the temperature did not demand it, the heart did not demand it, the lung did not demand it, and, above all, the patient and his family did not demand it. Again, he had seen cases of pneumonia recover under various methods of treatment; one physician pinned his faith to morphine, another to whiskey, another to digitalis, and a fourth, perhaps, to strychnine. Some physicians believed in withholding cardiac stimulants until the heart appeared actually to demand them, while another class seemed to think it advisable to spur on the heart from the very beginning. In speaking of the value of carbonate of creosote in pneumonia, Dr. Janeway said he had seen cases in which it was given early with unsatisfactory results. At times, he thought that oxygen inhalations were undoubtedly of value, and he recalled cases in which there was marked cyanosis of the lips and fingers, and the patients were seemingly *in extremis*, which were apparently successfully tided over by the use of oxygen. Rather free cardiac stimulation was also beneficial at times, and for that purpose he favored digitalis in some form, or a combination of strychnine, digitalis, and nitroglycerin. The hypodermic use of camphor oil might occasionally cause abscesses, yet was much used. The solution in sterilized sweet almond oil was better than in olive oil, because of its running more readily through the needle. As the remarks were not intended for publication, the subject was not fully developed, nor the question of alcoholic stimulation carefully considered.

Dr. W. Gilman Thompson said he wished to emphasize the value of a leucocyte count in pneumonia, to which Dr. Robinson had referred, and the importance of having it done by an expert. Otherwise, especially in cases in which cyanosis was marked, the result might be very misleading. In regard to the value of creosote in pneumonia, given either internally or by inhalation, Dr. Thompson said that a very thorough trial of the drug, extending over a period of a number of years, had convinced him that it was utterly worthless. Furthermore, he was convinced that the treatment of pneumonia by any method of inhalation was without value and had no physiological or pathological basis. The late Dr. J. West Roosevelt, in a paper read before this Society some years ago, had emphasized the fact, already known, that the depth to which a substance could penetrate the lung by inhalation was very limited. The physiology of respiration showed that only one-tenth of the air of the lungs was mechanically exchanged in each act of respiration, the rest of the process being due to the diffusion of gases. In pneumonia, the respiration was very shallow, much more so than in health, and the involved lung was absolutely solid, so far as the penetration of air was concerned. It was utterly irrational to conclude that any inhalation could reach the deep-seated portions of the affected lung, or modify the growth or development of the bacteria or their toxins. The pneumococcus was a fairly hardy microorganism, and it was not justifiable to presume that its destruction would be accomplished by inhalations of creosote or chloroform. In catarrhal conditions of the upper air passages, the inhalation of certain medicinal substances was no doubt beneficial, but their effect probably did not extend below the trachea, or larger bronchi. The fresh-air treatment of pneumonia, which had recently achieved considerable newspaper notoriety, was a very old one. In his own experience with this method of treatment at Bellevue Hospital, the results had been beneficial. After being kept out of doors for a number of hours during the day, it was found that the patients slept better, and the course of the disease seemed to be favorably affected. He had recently collected a series of cases of pneumonia in which recovery took place without any medical treatment whatsoever, the essentials of the treatment having been fresh air, rest in bed, and good nursing. Pneumonia patients were very easily exhausted, and one of the most important factors in the treatment was that they should receive a sufficient amount of rest. For that reason all meddlesome interference or over-solicitude by friends or nurses and the too frequent disturbance of the patient for the purpose of giving hypodermic injections, or food, or inhalations, should not be permitted. This, of course, did not refer to the administration of the necessary drugs and nourishment. In the very severe type of cases, in which the toxic symptoms were marked, saline irrigations or infusions were indicated. The speaker said he had seen a number of such cases, practically moribund, where a resort to these measures strengthened the circulation and produced a certain degree of improvement, tiding the patient over to the crisis, which was not far distant.

Dr. Lewis A. Conner said he had had no experience with inhalations of creosote in pneumonia, but about three or four years ago, when creosote carbonate was being advocated for that disease, experiments were begun with it at the Hudson Street Hospital, and these had been continued up to the present time. Every second pneumonia patient treated in that institution during the past three or four years had been given carbonate of creosote in addition to the routine treatment. Some 500 or more cases had been treated during this time, and while the results of the two series had not yet been compared statistically, he felt justified in making the general statement that there was no appreciable difference in the behavior of those treated with the creosote and those in whom it had been omitted. It did not give rise to any disagreeable symptoms nor disturb the stomach, but, on the other hand, it was apparently of no benefit. Alcohol, in any form, was now rarely given in pneumonia at the Hudson Street Hospital, and apparently its withdrawal had proven beneficial to the patients.

Dr. Andrew H. Smith said that while we were constantly hearing about the presence of the pneumococci in the mouth and upper air passages, there was very little said about their presence in the smaller bronchial tubes. Some years ago, with the idea of investigating this subject, he had quite a number of observations made in the dead-house on subjects who had died of other causes than pneumonia, and in those cases it was of frequent occurrence to find the pneumococci in the secretions of even the smallest bronchi into which a loop could be introduced. This proved that the microorganism was not confined to the mouth and upper air passages, but its behavior on those mucous surfaces was very different from that which it assumed on a serous surface. On the former it was comparatively innocuous, and it might even be disseminated throughout the bronchial tree without doing any harm, but when once it invaded the infundibula and air cells, and reached the pavement epithelium of those organs, we were apt to hear from it.

In reply to Dr. Thompson's objections to the value of inhalations, Dr. Smith said that if we accepted them it would be difficult to account for the well-known action of

anesthetics. The vapor of chloroform and ether certainly found its way pretty well down into the lung structure and into the system, and the blood that was charged with those drugs reached the air cells, even if they could not get through the bronchial tubes. It was through the medium of the blood that the results of inhalation were obtained. The speaker said that from his experience he believed that certain drugs, such as the carbonate of creosote and sodium salicylate had a decided effect on the pneumonic process, and that as the result of their administration the defervescense, instead of being by crisis, as it ordinarily was, usually took place by lysis. These substances seemed to possess some property which changed one of the essential phenomena of pneumonia, and reversed the ratio usually observed. They should not, of course, be used to the exclusion of other remedies. Dr. Smith said he did not agree with Dr. Thompson that the pneumococcus was a fairly hardy microorganism. It was probably the most vulnerable coccus with which we were familiar. Besides, its actual destruction was not necessary, and there was the widest difference in the world between *inhibiting* the action of a microorganism and *killing* it. In his opinion, the assumption that the pneumococcus reached the air cell by way of the lymphatics instead of through the air passages was gratuitous.

Dr. T. Mitchell Prudden said that inferences as to the presence of the pneumococcus in the deeper recesses of the lungs, which were based upon their alleged presence at autopsies, should, he thought, be accepted with considerable reserve. The researches of Norris and Pappenheimer, recently made under the auspices of the Pneumonia Commission of the Health Department, had shown that after death the exudates from the mouth and upper air passages, together with the bacteria which they contain, might find their way into the deeper portions of the lungs. It should further be remembered, he thought, that many of the earlier supposed identifications of the pneumococcus were not to be considered as altogether positive, in the light of the more recent and more subtle technique through which the absolute identification of this organism must be made. Finally, it was always to be remembered, in framing hypotheses based upon the presence of bacteria in the lungs, that in these organs the mechanism for the destruction of bacteria was under normal conditions extremely effective.

Dr. Prudden thought the practitioner might wisely hold in mind that pneumonia, like all other infectious diseases, was a process of adaptation of the body on the one hand, and of the microorganism on the other, to a new environment. Successful adaptation of the body to the microbe and its poisons in pneumonia, whether it be marked by crisis or not, was the result of a series of extremely complex and subtle processes which should not at least be interfered with by the treatment of the physician, and for which, so far as we knew, there was no substitute. The physician could apparently be useful in just so far as he was able to keep the body in such a condition that it could effect its own cure, but cure must be effected in the body's way, and by the body's mechanism, and not in any other fashion.

Dr. Thompson, in reply to Dr. Smith, said it was not at all necessary, for the purpose of producing anesthesia, to have the ether or chloroform penetrate deeply into the lung. The same effect had been produced by introducing ether into the rectum. Ether was an exceedingly diffusible vapor, much more so than creosote, and the same was true of chloroform. The point he wished to emphasize was that when the lung was solid with a pneumonic exudate, it was scarcely rational to believe that the germs that were producing that exudate could be reached by inhalation.

Dr. Beverley Robinson, in closing, said he did not believe that creosote, by inhalation, penetrated consolidated lung tissue, but he did claim that the inhalation of the drug in pneumonia had a beneficial effect on the course of the disease. His faith in the efficacy of the drug was based upon clinical experience. While he was not in a position to refute the statements made by Dr. Thompson in regard to the penetrability of certain drugs by inhalation, he could not accept as final the results of the experiments made by the late Dr. Roosevelt.

College of Physicians of Philadelphia: Section on General Medicine.

At a stated meeting held January 8, Dr. George Dock read a paper entitled "Clinical Observations on Exophthalmic Goiter (Graves' Disease), with Special Reference to Complete and Incomplete Forms, the Clinical Course and the Treatment." The paper dealt at length with the various phases of the question, and was based on an experience with thirty-two cases. Dr. James Tyson read a paper on "The Medical Treatment of Exophthalmic Goiter." Rest, with freedom from excitement was a most important therapeutic measure. Bromides were often useful. Strophanthus would aid in the control of the rapid heart-action; an ice-bag applied over the precordium was a useful adjunct for the same purpose. Thyroid extract was an uncertain remedy for exophthalmic goiter. Thymus extract had been used by some clinicians with success. Adrenalin should be a physiological antidote. Dr. W. G. McCallum of Baltimore presented a communication entitled "The Pathogenesis of Exophthalmic Goiter." In a study of the tissue obtained by removal of the enlarged thyroid gland in a considerable number of cases of exophthalmia he had found anatomical conditions indicative of compensatory hypertrophy. The colloid was diminished; the vascular supply was rich. The walls of the veins were friable and the connective tissue contained a good deal of lymphoid tissue having a nodular arrangement. Dr. Joseph C. Bloodgood read a paper entitled "The Surgical Treatment of Exophthalmic Goiter." The operation consumed much time and was likely to be attended with considerable shock. Therefore local anesthesia was to be preferred. Only a part of the enlarged gland was to be removed. Death might occur during or in succession upon the operation. The immediate relief afforded was most striking. Sometimes, however, the symptoms returned and the gland became again enlarged, so that secondary operation might be required.

Philadelphia County Medical Society.

At a stated meeting held February 15 Dr. Joseph Walsh read a paper entitled "Prognosis in Tuberculosis." He pointed out that a judgment as to the course and outcome in a case of pulmonary tuberculosis must be based upon the size, character, and number of the lesions, individual peculiarities, temperature, appetite, food, environment, social position, and a variety of other factors. Dr. Charles Lester Leonard presented a communication entitled "The Treatment of Some Superficial Benign Lesions with the Roentgen Ray." Among the affections thus successfully treated have been lupus, acne, glandular enlargements, simple goiter, exophthalmic goiter. Drs. George E. Pfahler and M. C. Thrush read a paper entitled "A Case of Exophthalmic Goiter Apparently Cured by the *X*-rays." The patient was a young woman presenting enlargement of the thyroid gland, exophthalmos and tachycardia, and amelioration of all of the symptoms ensued upon systematic application of the *x*-rays. Dr. W. Reynolds Wilson read a paper entitled "The Use of Calomel in the Treatment of Eclampsia." He pointed out the depurative, cholagogue, and antiseptic effect of calomel and its influence in the elimination of the toxic substances upon whose activity the eclamptic state is thought to be due. When the attack is threatening doses of ten grains may be administered, but when the attack has begun even larger amounts may be employed.

Surgical Suggestions.

After-Treatment in Hemorrhoid Operations.—Sir Victor Horsley in this connection says that the most important consideration is adequate provision to protect the line of suture against the passage of the feces, and at the same time to save the patient from the intolerable pain caused by the old-fashioned plan of "locking up the bowels" as it is called, by administration of opiates. Such treatment, of course, results in the formation of hard and large lumps of feces which cause great pain in their passage, and the opiates upset the digestion and cause additional misery to the patient. The whole of this established routine is false in principle and practice. Instead of it he advises the following: On the third day (or fourth if there is no abdominal distention or discomfort) three or four drams of a sterilized soft bismuth ointment is gently injected into the bowel by a rectal ointment repositor and the ointment applied also to the anus. Later a large injection of warm olive oil is given. The evacuation that follows is usually painless and the thick coating of ointment prevents contamination of the sutures. This procedure repeated daily provides for the restoration of the function of the bowel without appreciable suffering to the patient.—*The Clinical Journal.*

Hemorrhage After Operations for Adenoids.—Krebs states that if this complication arises search should first be made to see if any shreds of tissue still remain, and if so, they should be removed. The patient should then be kept flat and absolutely quiet, with the shoulders elevated. Pellets of ice should be sucked, and in order to lessen the blood pressure in the superior vena cava deep inspirations should be taken through the nose, exhalation being gentle and performed through the mouth.—*Centralblatt für Kinderheilkunde.*

Separation of the Urine from the Two Kidneys.—Giordono and Nicolich, of Trieste, have devised the following method for obtaining the urine from either kidney without the use of a ureteral catheter. Giordono observed during a nephrectomy that the urine in the manipulated kidney was pressed out, so that the first urine passed after the operation contained morbid products. Following this hint it occurred to him that the urine might be expressed for diagnostic purposes by massage. The procedure followed by these observers is very simple. The bladder is first emptied, and then one of the kidneys and its ureter is massaged through the lumbar and abdominal regions. The resulting urine in the bladder is withdrawn, the bladder again carefully washed, and the same process applied to the remaining kidney. A number of diagnoses arrived at by this procedure were later confirmed by nephrectomy. The simplicity of this method will commend it to physicians owing to the fact that to catheterize a ureter, especially in the male, requires special skill, and it is a question of grave importance whether or not a catheter after passing through an infected bladder ought to be inserted into a healthy ureter.—*Medical Age.*

A Lubricant for Urethral Instruments.—Strauss recmends the following: 1.5 parts of tragacanth are rubbed up with 50 parts of water, and 50 parts of glycerin are added. The mixture is then sterilized by heat and one-fifth of a part of oxycyanide of mercury is added. The mixture is thick, non-irritating, does not attack the instruments, and makes them very slippery.—*Pharmazeutische Zentralblatt.*

Moist Gauze Dressing.—Experiments by Dr. Noetzels have demonstrated what is well known to surgeons—that the secretions of a wound are drawn up into a moist dressing better than into a dry one. In Dr. Noetzel's experiments virulent anthrax bacilli placed upon an artificial wound in rabbits were absorbed into moist dressings and the infection of the animals was prevented. While both moist and dry dressings were effective in the destruction of germ life, the germs were drawn up into the outer layers of moist gauze, while they were found only in the layers closest to the wound in the dry dressings.—*Indian Medical Record.*

Emergency Treatment of Glaucoma.—Maitland Ramin *The Lancet* says that the practitioner, deprived of expert help, in dealing with a case of glaucoma, ought at once to instill eserine, put leeches to the temples, and apply hot fomentations to the eye. If in a few hours the pain has not subsided, means must be taken to reduce the intraocular tension by opening the eyeball, so as to relieve the strangulation of the corneo-iridic angle. If the practitioner cannot obtain assistance he ought not to wait, but should at once puncture the sclerotic with a narrow knife, and allow some of the vitreous to escape. If he observes strict antiseptic precautions this can be done without danger, and will give relief till the services of a specialist can be obtained. The all-important thing is that the case be taken in time.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cas and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 31, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	387	198
Diphtheria	357	52
Measles	1941	62
Scarlet Fever	220	11
Smallpox	2	.....
Varicella	166	.....
Typhoid Fever	20	8
Whooping Cough	28	4
Cerebrospinal Meningitis	32	19
Malarial Fever	.....	.....
Totals	3,153	354

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending March 31, 1906.

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
California, Los Angeles	Mar.	3–17	3	..
San Francisco	Mar.	10–17	7	1
Colorado, Idaho Springs	Feb.	7–28	1	..
South Canon	Feb.	1–28	1	..
Florida, Jacksonville	Mar.	17–24	4	..
Illinois, Chicago	Mar.	17–24	1	..
Kansas, General	Jan.	1–31	125	1
Kentucky, Covington	Mar.	17–24	2	..
Louisiana, New Orleans	Mar.	17–24	7	..
Maryland, Baltimore	Mar.	17–24	3	..
Michigan, Ann Arbor	Mar.	17–24	1	..
Detroit	Mar.	17–24	1	..
Mississippi, Gulfport	Mar.	19–20	1	..
Natchez	Mar.	10–17	1	..
Missouri, St. Louis	Mar.	17–24	7	..
New York, New York	Mar.	17–24	1	..
Ohio, Cincinnati	Mar.	16–23	5	..
Pennsylvania, Pittsburg	Mar.	17–24	1	..
Tennessee, Memphis	Mar.	17–24	14	..
Utah, General	Feb.	1–28	232	..
Salt Lake City	Mar.	3–17	39	..
Virginia, Petersburg	Mar.	1–26	21	..
Washington, Spokane	Mar.	10–17	1	..
West Virginia, Wheeling	Mar.	17–24	5	..
Wisconsin, Appleton	Mar.	17–24	2	..
Beloit	Mar.	10–24	2	..

SMALLPOX—INSULAR.

Hawaii, Honolulu	Mar.	12	1	On S.S.
Philippine Islands, Manila	Feb.	3–10	2	*Coptic*

SMALLPOX—FOREIGN.

Africa, Cape Town	Feb.	3–17	7	..
Brazil, Pernambuco	Feb.	1–15	..	21
Canada, Toronto	Feb.	24–Mar. 3	1	..
China, Hongkong	Jan.	26–Feb. 3	9	7
Shanghai	Feb.	10–17	2	3
France, Paris	Feb.	24–Mar. 10	21	..
Gibraltar	Feb.	25–Mar. 11	11	4
Great Britain, Glasgow	Mar.	9–16	..	2
Liverpool	Mar.	3–10	3	..
London	Mar.	3–10	1	..
Greece, Athens	Feb.	20–27	..	3
India, Calcutta	Feb.	10–17	..	118
Bombay	Feb.	20–27	..	7
Karachi	Feb.	18–25	52	13
Rangoon	Feb.	10–17	..	103
Madras	Feb.	17–23	..	20
Spain, Barcelona	Mar.	1–10	..	5

YELLOW FEVER.

Mexico, Merida	Mar.	4–10	3	..
Nicaragua, Managua	Feb.	10–24	..	2

CHOLERA—INSULAR.

Philippine Islands, Manila	Jan.	26–Feb. 10	7	8
Provinces	Feb.	3–10	195	165

CHOLERA—FOREIGN.

India, Bombay	Feb.	20–27	..	1
Calcutta	Feb.	10–17	..	79
Rangoon	Feb.	10–17	..	5

PLAGUE—INSULAR.

Philippine Islands, Manila	Jan.	27–Feb. 10	2	2

PLAGUE—FOREIGN.

Brazil, Bahia	Feb.	22	..	Present
China, Hongkong	Feb.	3–10	6	6
India, Bombay	Feb.	20–27	..	229
Calcutta	Feb.	10–17	..	32
Karachi	Feb.	17–25	12	11
Madras	Feb.	17–23	..	1
Rangoon	Feb.	10–17	..	33
Paraguay, Asuncion	Mar.	28	..	Present
Peru, Callao	Feb.	13–26	1	..
Lambayeque	Feb.	13–26	3	1
Lima	Feb.	13–26	1	..
Mollendo	Feb.	13–26	3	2
Paita	Feb.	13–26	5	2
Trujillo	Feb.	13–26	31	11

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69. No. 15.
Whole No. 1849.

New York, April 14, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

A BIOGRAPHIC CLINIC ON GUSTAVE FLAUBERT.

By GEORGE M. GOULD, M.D.,

PHILADELPHIA.

He was a writer of rare talent; had it not been for the nervous disease which seized him at the outset of life, he would have become a man of genius.—Maxime Du Camp.

Writing in their diary in 1863 the brothers Goncourt say that Flaubert told them that when a child he became so absorbed in his reading that he would bite his tongue, twist a lock of hair in his fingers, and sometimes he would fall to the floor. Once he fell against a library window and cut his nose. Both the fact and its significance have been overlooked by the many who have written on Flaubert.

When Flaubert came to Paris to study law, he was 21 years of age, and of "heroic beauty." Many have enthusiastically described the perfection of his skin, head, his "enormous eyes," his hair, shoulders, whiskers, stature, eyebrows; his "trumpet-like voice," his gestures, his laugh; his abounding health, impetuosity, impatience, dominating character, etc. "Gustave was a giant." So physically strong was he that Du Camp says the excesses of his Paris student days knew no limits; he would study all night, run about the whole day, squander energy like a madman, careless of sleep, reckless of every law of moderation or health.

He did not like law, and so little did he care for it that two years later, even with his all-absorbing intellect and splendid memory, he was blackballed by his examiners and he returned, in August, 1843, to his home at Rouen. His irrepressible energy of body and mind, and the inviting opportunities to give it rein in Paris, had saved him from injuring his health, and if his life had been rightly ordered, he might have lived a long, happy, and healthy life. His friend Du Camp says of him that had it not been for the nervous disease which seized him at the outset of life he would have become a man of genius.

In October, two months after Flaubert's return to Rouen, he had what is called his first attack of "epilepsy;" his biographers forget his swoonings, or faintings and fallings, years before and while a child. And they also ignore Flaubert's own testimony as to a nocturnal attack, a month before he left Paris and while studying hard for his final examinations. He remembered that he awoke one morning in a condition of extraordinary lassitude which lasted for a week, and he was sure that this, his "first," had taken place during sleep. Du Camp holds that he was probably right, "because these nocturnal attacks were frequent." "These nocturnal attacks," he continues, "affected him less than the others, bringing on decided fits of misanthropy. Once when he was seized in the neighborhood of Sotteville he secluded himself for several months without going out." There was thus no sudden onset of the disease, as one would believe from the reports, but a beginning in childhood, induced always by excessive reading or study. The frequently described "first" seizure occurred two months after his return to Rouen, while riding in the night with his brother, a practising physician, in a carriage. It was very dark, and in passing a wagon the light flashed in Flaubert's face,* and he fell, unconscious, we gather, and immediately, according to medical custom, was bled by his brother.† Fourteen attacks followed in the next two weeks, probably encouraged by the anemia produced by the terrible bleedings to which parental solicitude and science subjected him. "Excess of plethora, too much energy, and force" said the father, and there was a forbidding of alcohol, of wine, of coffee, of food, and of tobacco. He was stuffed with valerian, indigo, and castoreum. He gulped down the drugs with resignation, ate a little white meat, did not smoke, drank decoctions of orange leaves, smiled, and said Sauterne would taste better. Then he read the books in his father's library on nervous diseases, and said, "I am lost!" Not forgetting the reading, one does not wonder that the treatment kept up the seizures. Du Camp describes a typical example:

"Suddenly, without apparent cause, Gustave raised his head and became very pale; he had felt the aura, the mysterious breath which passes over the face like the flitting of a ghost; his expression was that of anguish, and he raised his shoulders with a gesture of distressing discouragement. He said, *There is a flame in my left eye;* then in a few seconds: *The flame is in the right eye, everything is colored yellow.*‡ Sometimes this peculiar condition lasted for several minutes. It was evident that he hoped the warning would pass without an attack. Then his face would grow still more bloodless, and take on an expression of despair; rapidly he would then walk, or run, to his bed, stretch himself out upon it, gloomy and dejected, as if alive in his shroud, and cry out: *I hold the reins, there is the wagon, I hear the bell,—ah, I see the lantern of the inn!* There followed a harrowing moan the vivid tone of which still vibrates in my ear, and the convulsion followed. This paroxysm into which his whole being entered with fear, was invariably succeeded by profound sleep, and great lassitude for several days."

Dr. Dumesnil, one of Flaubert's many biographers and critics, has written a literary or semimedical clinic, in which he seeks to show that his patient did not have "typical" epilepsy, but that his disease should be called, "Hystero-Neurasthenia." The word raises a smile, and we may pardon the Frenchman's turn for systematization, bringing everything

*Another sign of the ocular origin of Flaubert's seizures is this fact of the influence of light as an incidental cause. In the two attacks, described for us in detail, it was light suddenly flashing upon the eyes and further arousing the irritated surcharged optical centers.

†The poor man seems to have been bled nearly to death, by his father, in every subsequent attack. Once when no blood could be got, his father scalded the patient's hand, inadvertently, of course, in the attempt to arouse circulation and get more blood. The wound was long in healing, and Flaubert carried the scars all his life.

‡If there is any value in the theory of the indication of the seat of the lesion in epilepsy from the peripheral organ first affected, then the ocular nature of the aura in Flaubert's case deserves consideration.

into a *cadre*, or deftly forcing clinical facts into a rigid theoretic pattern. The distinction does not aid us at all to understand either the disease, or its etiology, does not even help us in the simple matter of symptomatology. It is indeed the prototype of a very modern morbid habit among physicians of a certain cast of mind, who cry "atypical" when the particular clinical figure cannot be made to fit into the nosologic puzzle. The more shrewd observer knows that with rare exceptions every case is individual; not even those called infectious and organic are identical in their histories, and when it is a question of functional and psychic diseases, all theories and typicalities end in thin air and ludicrousness. The epileptic seizure in many chronic cases is so uniform that the word typical has been applied to it, but even here there are infinite variations chronicled, while in the early stages, the life-clinic, and the petit-mal types of the disease, there are as many types as there are cases, and there are a thousand atypical examples to one that is properly or foolishly denominated "typical."

Beyond question, Flaubert's seizures will not fit into the crude, "classic," and outworn framework of those lost in the impasse of nominalism, and theory-worshipping. The aura lasted too long, "several minutes," leaving time for speech, gestures, acts, walking, etc. Then there were sentences repeated before the paroxysm. There was no frothing, no biting the tongue. There was long slumber afterwards. There was no mental deterioration, properly speaking, and the disease was at an end in a few years.

So far as we may be certain, there were never any true attacks after those of 1843, except one in 1846. Du Camp spent a part of the summer of 1846 with his friend at Croisset, and nothing is said as to seizures. In May, 1847, the two friends set out from Paris for a walking tour in Brittany, and on the fourth day there was a "crise nerveuse." The famous Dr. Brettonneau was sent for. "He confessed his ignorance and said: Our science is but a series of desiderata, and we have only reached the point of asking what is Migraine?"

This is the first time that this wonderful word has been heard applied to Flaubert's disease.

Du Camp proceeds to say that Brettonneau ordered such huge doses of quinine that even Du Camp objected. To which the physician replied: "Sulphate of quinine is good for nothing if it does not produce in the organism the effect of the shooting a cannon." Whether it was due to the cannon shot or to the ocular rest and the open air active life, there were no further attacks, either of "epilepsy," "hysteroneurasthenia," or even of "migraine," during the four months' tour. We read that the walkers carried on their backs thirty volumes of books!

"When I arrived in Rouen," says Du Camp, "Flaubert's father was bearing a burden of which the effects were seen in his face. One read there of humiliation, despair, and a sort of resignation before a power which he could not conquer. His science was paralyzed before an incurable disease, and his paternal affection suffered because of the powerlessness of his art. The sacred disease, the great neurosis, what Paracelsus calls man's earthquake, had struck Gustave, and brought him to the ground. The poor giant bore the disaster as philosophically as he could. He tried to laugh, or be witty, and to reassure those about him: but he forgot his role, his head fell, and it was easy to see with what his thoughts were busy."

"His nervous malady threw a veil, as it were, over his whole life," and from this time, as he told George Sand, he was "afraid of life." For three years he never went out without a medical attendant, and indeed during his whole life he kept somebody near him. From this cause he hardly ever walked, preferring a carriage, and his fear degenerated into a strange rule of hygiene that walking itself was hurtful. He retreated not only into solitude, but into himself, and, with the exception of the noise he himself made, his mother's care was to envelop him in an atmosphere of perfect calm. She watched over him all her life, looking for the slightest symptom of ill-health, and at every unusual noise or silence she would run to the door.

To the trained oculist who has cured a number of epileptic patients, it matters not what name is tacked upon the clinical facts; and to one who seeks the single cause of the individual case of disease, or the pathogenesis of the affection generally, such meticulous foibles provoke either mirth or disgust, possibly both.

All such puerilities are, or should be, forgotten in Flaubert's case, because of the tragedy that followed the first attacks. Instead of a joyous, expansive, energetic, exuberant healthfulness of mind, there was gloom, silence, self-repression—a most morbid psychosis. Previous to this time he had played the dilettante with the poison of pessimism: he had tasted and tested it in jocular mood; he now fed upon it, and it bit into every cell of his body, and attended every stirring of his psyche.

> This disease shattered his life, rendering him solitary and unsociable. He did not speak of it willingly, but in strict confidence he did so freely. Never was he known to mention the true name of his affliction, but alluded only to his "attack of nerves." (Du Camp.)
>
> I have had two distinct lives * * * my active, emotional, passionate life, filled with somersaults, contradictions, and manifold sensations, came to an end at the age of twenty-two. (25.)

Even among physicians few were better equipped as regards medical science than Flaubert. It is therefore of interest to see how he looked upon his own case. The following excerpts are illustrative:

> You ask me how I cured myself of the nervous hallucinations from which I formerly suffered? In two ways: (1) By studying them scientifically, that is to say, by trying to understand them; and (2) by force of will. I have often felt insanity coming upon me. There was a whirl of ideas and images in my poor brain, in which my consciousness, my *me*, seemed to founder like a ship beneath a storm. But I clung desperately to my reason. It prevailed over everything though besieged and beaten upon. At other times I used to try, by means of imagination, to give myself these horrible sufferings factitiously. I have played with madness and fantasy like Mithridates with the poisons. I was sustained by a mighty pride, and I conquered the mischief by wrestling with it. (36.)
>
> He spoke correctly when he said, "I am the Victim of Physiology." (Du Camp.)
>
> There are only two or three years (from 17 to 19) in which I have lived in full. * * * Since then I have deteriorated furiously; some mornings I am frightened at myself, I am so wrinkled and used up. * * * But I do not regret my youth. I was atrociously weary, I dreamed of suicide! I was devoured with every kind of melancholy. My nervous malady has done me good, for it brought all this down to the physical basis and left my head cooler, besides making me acquainted with curious psychologic phenomena of which no one has any idea or rather has never felt. (32.)
>
> In my youth I was horribly wearied, I dreamed of suicide, I consumed myself in all possible kinds of melancholy; my nervous malady did me good, it diverted all that to the physical element, and left my head cooler, and then it introduced me to curious psychological phenomena, of which no one has any idea or rather which no one has felt. I will take my revenge some day, I will utilize them in a book (referring to *St. Anthony*), but as it is a subject which frightens me, speaking from the point of view of

health, I must wait in order to be able to give these impressions to myself artificially, ideally, and so without danger to myself or my work. (32.)

My nervous disease was the froth of these little intellectual facetiæ. Each attack was a kind of hemorrhage of innervation, seminal losses of the picturesque powers of the brain, a hundred thousand images springing at once like fire works. There was an actrocious tearing of the soul from the body (I was many times convinced I was dead), but my personality, the essential, rational being held out to the end; without this suffering I would have been worthless because I should have been purely passive, and I always retained consciousness even when I was unable to speak. (32.)

I also had my nervous period, my sentimental epoch, and like a galley slave I have its scar on my neck. With my burned hand I have the right now to write concerning the nature of fire. (31.)

But the old secret appears at times, the old misery of which no one knows, the profound wound always concealed. (33.)

Add to this my attacks of the nerves which are only involuntary declivities of ideas and images. (31.)

I have had a great deal of experience with neuroses. All treatment ordered in these conditions only makes the evil worse. I have never met a single physician intelligent in these things—no, not one. This is consoling. One must study himself scientifically and experiment as to what is the best thing to do. (50.)

When he told me that I had "a disease of the spinal cord, a softening of the brain," it made me laugh. 1853.

If I had had a sounder brain, I should not have made myself ill over reading law, and wearying myself. The vexation instead of staying in my head, passed into my limbs, and made them writhe with convulsions. It was a deviation. (31.)

In the last quotation we see an acuteness of observation and a soundness of judgment which no physician of that day could have equaled. There is a flashing glimpse into the physiology of epilepsy. If some of our modern epileptic specialists had either the desire or the ability to look at the disease in such a physiological and rational way, we should be much nearer a solution of the terrible problem. To the irritation of reading he ascribes the source of his ill—in a half-blind way, of course, and yet clearly, and his *deviation* is a good statement of the explanation of the storm of derouted reflex irritation submerging the lower centers.

In 1851, at the age of 30, when Flaubert's solicitude and fright as regards epilepsy had somewhat subsided, he wrote the following remarkable sentence:

The secret of everything which surprises you in me, dear friend, is in this part of my private life which no one knows. The single confident which it had was interred four years ago.

Five years before this, and while he was still under the terrifying influence of the shock, he was compelled to go to Paris on some business connected with the death of his father. A medical attendant accompanied him every instant. His friend, Du Camp, says of him during this visit, that he passed rapidly and without apparent cause from a state of excitement or exaltation to that of depression, that of normal health being almost unknown. He either walked so swiftly that his friends could not keep up with him, or he slept so soundly that it was almost impossible to awaken him.

This description appears to me to have a significance which is simply amazing. And it is quite as astonishing that a multitude of writers, medical and literary, have wholly neglected it. Writing four years previously he says that his "secret" was known to only one person who died "four years ago." There is but one explanation of these things, and of many such mysteries one need not recount, and especially of the character of *St. Anthony* of the "second style" or making, etc. There is no clinical explanation of all these facts, except upon the supposition that since the "earthquake" of 1843, Flaubert was constantly under the influence of opium. In 1853 Flaubert wrote that he had often heard his father credited with a comprehension or diagnosis of diseases without understanding the reasons whereby he reached his conclusions. One cannot be sure that Flaubert's mother did or did not, also know the "secret." There is no reason why the world should not know it, and one may hope that documentary proof may sometime transform my theory into history. It certainly throws a flood of light into a hundred puzzling mysteries, and solves many of the enigmas of his character, life, and literary workmanship in a most gratifying manner.

And especially as to the choice of subject, method of out-working, etc., of the morbid piece of literature, the second *Saint Anthony*, which he composed during the years preceding the journey to the Orient. A study of that book will make more clear Du Camp's correct observation, that "Flaubert's faults were especially the consequences of his nervous ailment, without which his talent, his habits, his character remain inexplicable."

"At the age of twenty," writes Du Camp, "Flaubert had an exceptional intellectual development; he was very peculiar, highly original, open to the world and appropriating everything with extraordinary rapidity. His reading had been extensive, and his memory was well-stocked. He worked with ease, and he was naturally fruitful, like a good tree planted in fat soil and grafted with a master hand. * * * But now Flaubert stopped. He explained his loss of memory as due to the abuse of quinine with which he had been stuffed. His former large curiosity was stifled, he narrowed his field of action, and limited himself to the revery of the moment. For months he never read a journal, and would not allow any one to speak of the external world. Real life was put out of his thought, and he seemed to float in a continuous dream from which he was aroused only with effort."

When the plan of an oriental journey had been agreed upon Flaubert delayed it until he should be able to complete the *Saint Anthony* upon which he had been working with great zeal for several years. At last it was ready, and the decision as to the worth of the great enterprise was to be left to his two best friends. So sure was Flaubert of their opinion that before he began the reading to them he waved the pages above his head and cried out: "Now, if you do not howl with enthusiasm, nothing is capable of moving you." The patient friends listened in silence for four days, eight hours a day, thirty-two hours in all! What could the poor judges answer the eager questioner?

"Phrases, phrases, beautiful, expertly constructed, harmonious, often redundant, made of grandiose fancies and of peculiar metaphors,—but only phrases, which might be mixed and transposed, without changing the book as a whole."

"Useless work! We could neither comprehend, nor guess whither it all tended, and in fact it arrived nowhere. Three years of labor without result! * * * We judged that the thing should be thrown into the fire and never spoken of again. Flaubert leaped up and uttered a cry of horror."

"You are perhaps right;" he said to us: "by absorption in my subject I have been fascinated by it and have not seen clearly. I admit the faults you speak of, but they are inherent in my nature; what is the remedy?" The renunciation, we said, of such vague subjects, the renunciation of lyricism, and the choice of a subject in which lyricism will be ridiculous.

He often said to Du Camp: "I was diseased with the cancer of lyricism; you operated upon me. It was high time, but I shrieked with the pain."* Later Flaubert frankly confessed that in *Saint An-*

*This, be it noted, was the *Saint Anthony* of the second overworking. If that of the third revision long after the "operation" is now recognized as so worthless, what must have been the quality of that of the "second style!"

thony he was "himself the Saint, and I forgot it." And the Apostle of the objective in art voices piteously his fall in the mud of disappointment. In 1853 he writes:

"I feel more and more funereal. My novel gives me cold sweats; sixty-five pages in five months! Oh, the joyful times of *St. Anthony*, where are you? I then wrote with my whole being!" (32.)

"I know those masked balls of the imagination, back from which one returns with death in the heart, exhausted, tired out, having seen only falsity, and indulged only in follies." (32.)

"*St. Anthony* was an experiment. It was a subject in which I was entirely free, as regards lyricism, movements, extravagances. I was writing according to my nature, and had only to go straight on. I shall never again find those recklessnesses of style such as I experienced during those eighteen months as I joyously chose the pearls of my necklace. I forgot but one thing, the cord."

In one word, *The Temptation of St. Anthony* was a prolonged opium dream. His reason, the instrument of differentiation, precision and limitation, was in abeyance, was submerged in hypnotic paralysis, and his exuberant imagination was allowed unrestricted play in a realm of fancy, tradition, myth, and metaphysical moonshine. From this he returned to the common world, freed, at least in part, from the drug habit. He then seems to have acted upon the advice of his friend and chosen a subject in which lyricism would be both impossible and ridiculous. *Mme. Bovary* was the pattern and ideal of the "realistic novel." He had no creative ability, and so this work is a sort of microscopic photograph in which there is little of value except the polishing of language, perfection of phrase, and the consecration of style. The tremendous contrast between the exuberance of all that preceded *Bovary* and all the pitiful, petty misery that followed after *St. Anthony*, an irritating puzzle to his biographers and critics, did not escape the attention of Flaubert himself:

A bad week, work would not budge; I reached a point where I knew not what to say. Everything was nuances and refinements in which all was black, and it is impossible to make clear by words what is obscure in the thought. I have sketched, bungled, floundered about, groped. I may find myself at last. What a scamp is style! You have no idea of this worthless book. As much as I have been open-breasted in my other books, by so much have I in this sought to be tight-buttoned and to follow a straight geometric line—no lyricism, no reflections, the author's personality not to be found. (31.)

There are in me, speaking in a literary sense, two distinct fellows, one who is smitten with *gueulades*, lyricism, the eagle flight, all the sonorities of rhetoric and the summits of the idea; the other who fathoms and excavates truth to the extent of his ability, who arraigns the tiny fact as relentlessly as the great one, who would make you realize almost *materially* the things he produces. (31.)

In my youth I had great belief in myself, superb leaps of the spirit, impetuosity in my whole being. I dreamed of love, of glory, of the beautiful. My heart was as large as the world, and I breathed all the winds of heaven. Then, little by little I hardened and shriveled up, worn out, withered. (36.)

There are times when I believe that I am wrong in trying to write a rational book, and not abandon myself to all the lyric extremes, violences, philosophies, fantastic eccentricities that come into my head. (30.)

Even at the age of 18 he correctly describes his natural proclivities:

I incline to facetiousness, to intemperance, to extravagances, the pell-mell of rummaging, without order, without style, etc. (18.)

And in the heart of the *Bovary* period his sighs are still heard:

I love the trenchant and demoniac geniuses; one does not accomplish great things without fanaticism. (32.)

Exuberance—that is what charms me. (34.)

But exuberance was impossible after the opium-years of *Anthony*, and as creative ability had been denied the writer, there could remain only a wearying, ruinous, and impossible striving after perfection of style, elaboration of phrase, ending in a pessimism which is absolutely unrivaled.

Some one has said of Flaubert that "he had a sort of impossibility of happiness," but that superficially cynical criticism needs to be placed over against the pathetic groan of the sufferer toward the end of his life. *How is it possible to be not sick?* Much, indeed all, should be forgiven those who have much suffered. Early his pain began, it was, with few and short exceptions, continuous, and its ingravescence ended with an early death:

Why this happiness? What is it afflicts me? (18.)

A man sick half of the time, and so depressed the other half that he has neither the power nor the intellect to write even the most commonplace letters. (23.)

My nerves leave me little rest. (23.)

By dint of expanding itself to suffering, the soul attains to a prodigious capacity for it. (25.)

Men like me are sick in vain because they cannot die. (25.)

It is the road of death, and I want to live still to make three or four other books. (32.)

My weariness cannot be greater. (32.)

Laxatives, purgatives, derivatives, leeches, fever, diarrhea, three sleepless nights, outrageous stupidity of the bourgeois, etc., etc.,—such has been my week. (33.)

I am profoundly sick without any being knowing how. I cough, and spout continuously like a whale. Add a depression that is unconquerable. I am melancholic, etc. (47.)

My head is very much fatigued. It is useless for me to try to work; the thing will not go. Everything irritates and wounds me, and although I am able to control myself before people, I have from time to time fits of weeping in which it seems as if I should break down. And now I have an entirely new symptom—the approach of old age. (40.)

How tired I am! I would like to go away where I should hear nothing spoken of. (50.)

Flaubert was so irascible, biting, etc., that it seemed as if he must be attacked with the morbid irritability of all the nervous diseases in their germ. (*Goncourts.*) (51.)

What have I not endured for four months! I do not know what has been going on within me, but it is certain that I have been very sick. (52.)

In the depths of pain in every part of my old machine. (53.)

For six months I do not know what ails me, but I feel profoundly ill without being able to say in exactly what way. (54.)

Flaubert not here; sick in bed. (*Goncourts.*) (54.)

It grows worse and worse with me. I have no idea what is the matter, and no one knows. The word neurosis expresses a group of varied phenomena plus the ignorance of the physicians. I am advised to rest; but how? To take things easy, to avoid solitude, etc., all of which are impracticable. There is only one remedy—time. If after a month's rest I do not feel better, I will try the remedy of Charles XII., and remain in bed for six months. (56.)

I am hurrying; I shake myself so as not to lose a minute. Even my bones are tired. (59.)

There are times when it is difficult for me even to lift a penholder. (59.)

The dependence of suffering upon use of the eyes is capitally illustrated in Flaubert's case. I might have made hundreds of excerpts besides the following:

I have no heart to work at anything whatever. You know that we all have strange moments of weariness; life is so heavy that even those for whom the burden is least weighty often sink beneath it. A week ago I laid aside historical studies—and for what? I do not know. I have scarcely the heart to smoke, and I am filled with a great weariness. It is strange, for two weeks ago I was in the best of health. This change is perhaps the result of the kind of work I have been doing for some time. (17.)

I am not made to enjoy. (25.)

To think is to suffer. (25.)

Those excesses in the matter of work, which exhaust, and by reason of that fatigue which they entail, make you lose more time in the end than you have gained. (25.)

You must know that I am driven wild by writing; style, which is a thing that I take very much in earnest, agitates

my nerves horribly. I vex myself, I prey on myself, there are days I am quite ill from it, when I am feverish at night. (25.)

Sometimes one rejoices hugely at success in composition, but this pleasure is bought at the cost of how much discouragement and bitterness? (25.)

You were sick; do not work to excess which exhausts you because of the weariness; you finally lose time which you thought to save. (25.)

I am harassed by my writing; style shakes my nerves horribly. (26.)

My writing does not put me in a normal state. * * * I am furiously tired; sometimes there is a doubled lassitude just as after dinner one wants to vomit. (26.)

From April, 1848, to May, 1849, there is a gap in the correspondence. At this time Flaubert was working hard at the *St. Anthony,* and his health had failed again. (*Tarver.*) (28.)

I left you with laughter in my mouth and gaiety in my heart, and now I am frightfully despairing. What a difference in three days! I know that my happiness left me in returning to Rouen, and taking up the work of each day, the life of minutiæ, the writing table, etc. (29.)

For three months I have been writing every day from morning until evening. I am at my wits' end with the ceaseless irritation of the incessant impossibility of completing my task. (29.)

Who knows if I shall not become a Cretin in four years! (30.)

For the seven or eight days in which I have been busy at these corrections my nerves have been terribly on edge; I hurry, and such work must be done slowly. (31.)

This book tortures me to such a degree that sometimes I become physically sick. For three weeks I often have pain sufficient to make me swoon. At other times I am oppressed, or come near vomiting. I think I should have hanged myself to-day had not my pride prevented. If I cannot finish *Bovary* in fifteen days I shall stop work indefinitely and until I find again the desire to write. I am too irritated, irritating, sullen, etc. (32.)

After great excitement from long-continued writing I have great pain in my knees, my back, and my head, lassitude, etc. (32.)

My head is afire; and because I have written too long,—from noon until midnight. (32.)

I must love you or I could not write, because I am exhausted. I have an iron band about my head. I have written for twelve hours, etc. (32.)

How I suffer! It is a thing atrociously delicious to write and to torture oneself in this way. There is a mystery here which I do not understand. (32.)

To suffer and to think—are these the same thing? (32.)

The week has been bad; I have writhed with exhaustion and abundant disgust. This happens regularly when I have finished something and must go to work again. (32.)

I am overwhelmed. My brain dances in my head. From six o'clock yesterday evening until now, one o'clock, I have copied seventy-seven consecutive pages; it is brutalizing. I have crushed the branches of my cervical vertebræ from bending my head too long. (32.)

Writing brutalizes me. I feel toward literature the hatred of powerlessness. (34.)

I cling to my chimera of style, which wears me out body and soul. (34.)

Since Thursday I have been in a frightful state of weariness and weakness, the result of a paragraph which I could not finish. This book crushes me, and I use up the remainder of my youth in writing it. (35.)

I must have a herculean temperament to withstand the atrocious tortures to which my work condemns me. (36.)

The more expert I become in my art, the more this art becomes a torment. Imagination stands still and taste grows. (36.)

Few have suffered more than I for the sake of literature. (36.)

I work away stubbornly and then am unable to sleep for two days. At last I finish my unfinishable Chapter VII. (39.)

For a long time I have been training my nerves; sometimes they get angry, and then they disorder the whole machine. (40.)

My wretched book has exhausted even the marrow of my bones. I am used up. (43.)

I read your book for four and a half hours and then did not sleep that night, and I had the stomach trouble. You will cause much gastritis. What a frightful book! If I were not suffering so to-day I would write you a long letter. (44.)

I am working like thirty thousand niggers. * * * Some days I feel as if ground up. I can hardly stand, and intermitting suffocations stifle me. (47.)

It is always so when I set to work. Then I am wretched, wretched, wretched! But this time it is worse than ever before. (48.)

I have been much weakened all this week in which I have written nearly one page. (52.)

Strange things are taking place within me. My psychic weakness must have a secret origin. I feel old, discouraged, used up. Perhaps it is my work which makes me sick, for I have undertaken a senseless task. (54.)

For the last four months, in which I have endured infernal anguish, I have in all written four pages; and bad ones they are. My poor brain cannot withstand another such injury; this grows very clear to me. (54.)

Physical fatigue prevents me writing every day. (57). 1878.

My furious labor brought on what Dr. Trelet calls *la folie lucide.* (57.)

Lest one should carelessly repeat the careless error that mental labor may produce suffering even with healthy eyes, it need only be recalled that that foolishness has long ago been outlived. There are a number of answers to the "brain-fag" philosopher. There are few eyes without some refractive error, and even with least, an immense amount of labor, may produce great suffering. In Flaubert's case the disproof is perfect, because he found his mind worked well and painlessly when he lay down and closed his eyes.

Then there is the striking fact that when he was walking or journeying, all pain, and even all pessimism disappeared as if by magic:

My health, far from bettering, is worse, and I was compelled to consult Dr. Cloquet at Paris, who emphatically urged me to live in a warmer climate. I leave for Egypt in October. (27.)

He was not seasick, but for the eleven days of the sea-voyage he ate, smoked, joked, and was genial, with his stories, wit, good spirits, etc. (28.)

I have become enormously fat in the East. (29.)

As to health it is excellent. We are all getting fat. (29.)

In Egypt he says:—What we need, in writing, is the soul of the matter, the idea of the thing. * * * All our learning,—of what use is it? But the heart, the life, the sap? Whence to set out, and where to go? Oh, when I get back, I shall take up once more my old tranquil life at my writing table, etc. (29.)

Why was I so happy and healthy in Egypt? (32.)

Yesterday and to-day I slept like a drunken man all the afternon. I had the feeling as one has after drinking six bottles of brandy. I was stupid and dazed. But this evening, after dieting all day, strength has returned and I have written almost in a breath a whole page of close psychologic reasoning. (32.)

After the journey to Trouville, he writes: What a volume I could make this evening if expression were as easy as thinking! (32.)

I advise you to travel and you say your health does not permit. But it is precisely for your health that you should change your life. (36.)

In Africa: I sleep like a stone, eat like an ogre, and drink like a sponge. You have never seen me while traveling,—then everything goes well. (37.)

I have recovered from the frightful blow which *St. Anthony* gave me. I do not boast of not being a bit dizzy, but I am no longer sick. * * * Has there been some progress in me? From day to day I find myself more sensitive, more easily moved. (37.) (On his way back from the Orient.)

For five months I have been in a deplorable condition, and if I go on this way the work will not be ended in twenty years. I must positively take a journey in Africa. (37.)

It was high time. In the six months since returning from the Orient I have stifled. (37.)

My four weeks at Vichy were stupid, and I did nothing but sleep. Doubtless I needed it; it refreshed me. But my intellect is atrophied. (39.)

The excitement of bringing out *The Candidate* told severely on Flaubert's nerves, and he consulted a doctor, who recommended a Swiss town. (53.)

Did I tell you that I should go this summer and set up my nerves at St. Moritz? It is by the advice of Dr. Hardy, who calls me an hysterical old woman. (53.)

I shall soon spend a few weeks on the Righi to deneuropathize myself. (53.)

To Switzerland by my physician's orders. (53.)

At Kalt-Bad for 15 days, and bursting with ennui because I have brought no books or work with me. I am thinking of myself, and when one does this he will end by becoming really ill. (53.)

Righi, where I nearly died with ennui, did me much good. My troubles have lessened, and I am able to go upstairs like a young man. I shall now return and go at my novel, which will take me two or three years to complete. (53.)

As it is absolutely necessary for me to get out of this condition of agony, I shall in September go to Concarneau. (54.)

I have been at Concarneau for 15 days without being absurdly well. I am in a more calm condition. (54.)

Since I have tried hydrotherapy I find myself calmer and am going to work again without looking behind myself. (54.)

I have worked this winter in a most reckless way and reached Paris in an absolutely lamentable condition. I am a little better. (55.)

I am just back in the old house which I left last year, three-fourths dead with discouragement. Things are not indeed superb, but they are perhaps tolerable. I am re-equipped and I wish to write. (55.)

At first glance it might seem that Flaubert's complaints of ill health, pessimism, etc., began too early in life to be caused by eyestrain, and that they arose in some precedent or more fundamental morbidity of his nature. "I cried too much in my youth to sing now; my voice is hoarse," says the young man of 25. We must not forget that as a child he was so preoccupied in his reading, read so long and so intensely, that he frequently fell over in a swoon. The boy of 10 wrote "tragedies," and when he was just 9 years old he writes to a boy friend:

I will send you some of my political liberal speeches. I will also send you some of my comedies. If you wish us to join writing, I will write comedy, and you shall write your dreams, and as there is a lady who comes to our house, and who always talks silly things to us, I will write them.

And at 13 years the true note is struck:

As for us, let us concern ourselves with art, with art, that is greater than peoples, than crowns and kings, always there, floating on enthusiasm, with her heavenly diadem.

Observant and keen oculists have often noticed a common symptom in the stories of their patients. There are many ways of expressing it—"everything stops," they repeat; "while I am writing or reading, things stop," "I get blind spells," "I half lose myself," "I get dazed," "I seem stupid," "I can't see," "everything becomes blank," "I have to quit and go take a walk," "my mind won't work," "I sit like a fool," "things fade out," "I lose my place," "the letters blur up"—and a thousand such expressions. Carlyle would sit for hours staring at his paper in blank amazement and thoughtlessness. In the letters of nearly every great eyestrain sufferer we find this symptom constantly reappearing. It is illustrated with most striking insistence every day that Flaubert drove his baulking eyes to their savage work. It begins as early as 18 and is clearly stated in a thousand passages I have not transcribed. The following are examples:

Formerly I thought, reflected, and wrote, good and bad thrown recklessly upon paper, so uncontrolled was my fervor; now I no not hink, meditation has gone, and I write nothing. My thoughts are confused, I am incapable of any imaginative labor, and everything that I write is dry, painful, forced, and extracted with suffering. I began a recondite work a couple of months ago, and all I have done is absurd, without the least idea in it, and I had to stop. (18.)

The further I go the less capable I find myself of expressing the idea.

Two execrable days. It is impossible for me to write a line. How I have sworn, spoiled paper, stamped with rage.

I always am frightened when I go to write. In beginning a work, do you also experience a sort of religious terror, an apprehension in commencing the dream? (25.)

Sick, irritated, the prey a thousand times a day of an atrocious agony. It was not like this formerly. (25.)

Already my imagination dies down, my power weakens, and my phrase disgusts me, and if I keep what I write it is because I love to surround myself with memories just as I do not sell my old clothes. (25.)

If you knew all the invisible bands of inaction which are about my body, and all the fogs which obscure my brain! I often feel a deadly fatigue of ennui upon being compelled to do the simplest thing, and it is only by great efforts that I am able to seize a clear idea. My youth steeped me in a sort of opium of weariness for my whole life. I hate life. It is torment to eat, to dress myself, to stand up. I have felt it everywhere and in everything and throughout everything—at college, at Paris, Rouen, the Nile, on the voyage. (30.)

I must keep the most complete immobility of life in order to write. I think better lying on my back and with my eyes closed. (31.)

I assure you I have fear now (of madness), but in seating myself at the table to write to you, the sight of the white paper has calmed me. (31.)

At work the whole week on *Bovary*, mad at not being able to make any progress. (31.)

I do not know if it is the Springtime Season, but I am in a frightfully bad humor, and my nerves are as irritable as wires. I am in a rage without knowing why. Perhaps it is all caused by my novel. It does not budge, will not go on; I am more weary than if I were rolling mountains. At times I almost break into tears. A superhuman will is demanded to write, and I am only a man. It seems occasionally as if I needed to sleep continuously for six months. I have written only 20 pages in a month, working at least seven hours a day, and the result of it all is bitterness, inner humiliation, my only reliance the ferocity of an unconquerable fantasy; but I grow old, and life is short. (31.)

Sometimes my arm almost falls with weariness, and my head is lost in vagueness. I live a bitter life, without external pleasures, and the only thing that keeps me up is a kind of continual raging, that weeps often because of powerlessness, but which never stops. I love my work with an unbridled and perverse zeal, like an ascetic. The hair-cloth scratches my body. Sometimes, when I find only inner vacuity, when expression is denied, when after long pages of scribbling I find I have not worked out a single phrase, I fall on my lounge and rest there, stupid and in a subjective desert of ennui. (31.)

I have succeeded in writing but one scene in four months. (32.)

For three days I have rolled among my furniture in attempting to find what to write. There are cruel moments in which the thread is broken and the reel unwound. * * * The end of my book is postponed, and it may prove the end of my own life. * * * Everything comes out of the head, and if that miscarries, it was at least good gymnastics. What is natural to me is unnatural to others, is extraordinary, fantastic, metaphysical howling, mythology. *St. Anthony* did not give me a quarter of the mental tension which *Bovary* causes. It was an outpouring; I had only pleasure in writing during the eighteen months of its composition. Its five hundred pages were the most profoundly voluptuous of my life. I now have to get within the skins of those antipathetic to me, and for six months I make platonic love while I am exalted as a Catholic at the call of the bells and want to go to the confessional. (32.)

My head whirls and my throat burns because I have hunted, chopped, dug, gone over again, rummaged, and howled, in a hundred thousand ways, a phrase which at last I have finished. (32.)

I am broken-hearted with weariness and humiliated with weakness. Ideas will not come; in vain I dig in my head, my heart, and my senses, nothing anywhere. The whole day has passed thus and I have been unable to write a line, not even think a thought, or find any activity. Utter emptiness and void. (32.)

My head swims with stupidity, discouragement, and fatigue. I spent four hours without achieving a single sentence. To-day I have not written a line. What atrocious labor, what exhaustion! O Art! Art! what is this mad chimera which eats the heart, and why? What a fool is one to give himself such suffering! (32.)

For four days I have had fever, and yesterday it was violent. (32.)

You do not know what it is to remain a whole day with your head in your two hands, trying to squeeze a word out of your wretched brain. (45.)

You understand nothing of my literary torment. I do not know how to go about it to write. (45.)

As for literature, I am incapable of any work. In about four months (during which I have been in hellish anxiety) I have written fourteen pages in all, and those bad ones. My poor brain will not stand such a blow. That seems to me quite clear. (54.)

In a strictly scientific and medical sense, we have here a capital example of what the physiologists call inhibition. A common function is prevented by some reflex which prevents its execution. A subconscious wisdom forefeels the hurt and shrinks from it. The sick lose the spur of action, even the desire for it. The wounded or weak animal feigns death; the hurt eyes notify the brain to stop, and the very effort required to overcome the strain checks mental activity and initiative. It is such a natural, common, and necessary protective method that we have overlooked it. But what vast significance it has for the welfare of the individual literary worker, and for literature itself. It is extremely frequently that in this simple inhibition of thought due to eyestrain lies the entire question of the quality of "inspiration" and of "inspiration" itself. Whipping oneself into "a white heat," as Carlyle and others did, or developing the aphorism-style of Nietzsche, with its morbid vagueness, excess, and disjointedness, give an altogether diseased character to the literary work .There is, indeed, often tragedy to the worker and to his literary art in not having a normal and physiologically acting ocular mechanism. Of all truths none is truer than that healthy and happy brain-action often depends upon spectacles which give health and ease to ocular function. Forcing inspiration defeats its own object and results in sterility. In the heart of his *Bovary* period Flaubert ground up his soul in agony and fury to overcome this inhibition. He is said to have hunted for one desired word for three weeks. "How tormenting is my *Bovary!* I want to cry sometimes, so much do I feel my lack of power. But I'd rather die than play the juggler with it." And so he stamped and walked, howled, sang, and declaimed, like a madman day and night for thirty years to lash himself into a fury and overcome the inhibitional effects of eyestrain. He could lie down, close his eyes, and his brain would work vividly, and he could go on travels and his mind at once became a fireworks of abundant energy. But sit at his table and write—that he could not do. *St. Anthony* drew its inspiration, as I believe, from opium, and the awful pain of the undeception resulting from that error was never for a moment forgotten by Flaubert. Creative ability was denied him by nature, and if there was any that slipped through the fingers of the Fates, it was paralyzed by disease and fear, or exhaled into dream by the hypnotic. What was left? The labor of days over a sentence, the desolate and empty beauty of cadenced prose, the "filing of the line" until it was a line—geometrically speaking—that is, without breadth or thickness. At its best only esthetic mysticism could result, at its worst, pessimism relentlessly and logically intermixing, what Gautier called the *triste amour du laid*, "the pitiable love of the unlovely." His own poor mother at last said to him, "The mania for phrases has dried up your heart." His own self-judgment was that he had no interest in the external, in useful things. "I have bid practical life an irrevocable adieu." Some of his rules of literary workmanship, or their consequences, are these:

The whole United States may perish rather than one principle. May I die like a dog rather than hurry a second the phrase which is not ripe.

His great principle now, was that the utmost weakness was to show one's personal feelings in the art work.

I have always forbidden myself to put anything of myself in my writings, but have nevertheless done so.

The idea exists only by virtue of its form.

The men of olden times had no diseases of the nerves such as I have.

Physically speaking, for my health's sake, I need to reinvigorate myself with good poetic phrases.

For fifteen long years I have labored like a mule. I have lived all my life in this maniacal obsession to the exclusion of my other passions, which I shut in cages and which I went to inspect occasionally to amuse myself.

If I have the power I have not the patience, and patience is everything.

What would be fine and desirable would be a book upon nothing at all, a book without exterior bonds, which would upbear itself by the internal force of its own style, like the earth without support in the air, a book almost without subject, or at least where the subject was almost invisible, if possible. The most beautiful works are those having the least of material; the more that expression comes near to being thought, the more the word adheres to it and disappears, the more beautiful it is. I believe the future of art is along this road.

Style is in itself and exclusively an absolute method of seeing things.

The moment a thing is true it is good.

Now what in the person, and in his art-work, and in his philosophy, was the conclusion of the whole matter? The latest and perhaps the best answer is, Zolaism. But the ideal is sought by thousands of other errant pseudoliterateurs that tell their wearisome story in every bookstall and "popular" magazine of the day. It is, strangely enough, a result of diametrically opposed and opposing tendencies, disease being the father of both—"Art for art's sake," and "form," empty and contentless; or Zolaism—the formless search for "truth"—the latter day alias of mud and filth, shortly, the yellow newspaper. Both vicious bastards have for their father Flaubert's monotonously repetitive "Art has no morality," leaving the "artists" to be impaled on either horn of the dilemma. They usually succeeded in being doubly gored. Already Flaubert recognized the fact in himself when he said, "The basis of my character, whatever is said, is the mountebank"; and in the further statements:

I hate what it is agreed to call *realism*, although I am made one of its pontiffs.

When Zola shall give me the definition of the term *Naturalism*, I shall perhaps be a Naturalist. But until then I do not know what it means.

They would use Mount Olympus for a potato patch. (1846.)

"I am the last of the Church Fathers," he said a few years before his death.

Du Camp, in allusion to his friend, says that the restless search for the exquisite finally ends in all sensation becoming almost pain. So dissatisfied was Flaubert with his (the greatest Master's) most excessive and most perfect work in "style," that he wished to buy up all the copies of *Bovary* and suppress the publication. *Anthony* had proved a hypnosis dream. Salambo, "an orgy of antiquarian erudition." How was it with the method itself?

I have suppressed phrases at the end of five or six pages which have cost me the work of entire days.

Sometimes one realizes that he needs to make himself suffer, to hate his own flesh, to throw mud in his face, so hideous does it seem. Without the love of form I should perhaps have been a great mystic.

This book, which is only style, has for its constant danger style itself. The phrase intoxicates me, and I lose sight of the idea.

The deplorable mania of analysis exhausts me. I doubt everything, and even my doubt. You thought me young, and I am old.

As I approach mastery, the art of writing appears in itself more impracticable and I am more and more disgusted with anything I produce.

The plastic art of style is not as large as the entire idea, I well know, but whose the fault? Language; we have too many things and not enough forms, whence the torture of the conscientious. (1853.)

After all the struggle and the "success" there is the most pitiful failure: *"Form is only an error of sense, and substance a fancy of your thought."* A faint and far forefeeling of a greater truth is dimly seen in his saying:

The blood of the Middle Ages still pulses in the veins of humanity, and it pants for the mighty air of future centuries, which only bring it storms.

In the score of clinical biographies I have collected it is a rule, almost absolute, that the general pessimistic view of a writer depends accurately upon the persistence and intensity of the suffering from eyestrain, and the most extreme and maddest expressions come from a special day or hour of ocular and nervous injury. This rule is admirably illustrated in Flaubert's case. The Goncourts say that Flaubert told them that it was indignation alone that kept him alive. Over his own tomb might have been erected Goya's monument, a skeleton crawling out of the grave and scrawling on the wall, *Nothing*. I choose a few lines:

There is left only weariness during life, a tomb after death, and rottenness for eternity. (18.)

Vice wearies me as much as virtue. (18.)

Let us spit on their heads, and then calmly continue our task. (21.)

The modern weariness that gnaws a man's entrails and turns an intelligent being into a walking shadow, a thinking apparition. (24.)

Real griefs stay in my heart, bitter and hard; they crystallize as they come. (25.)

There is no springtime in my heart.

If I had expected better things of life I should have cursed it. (25.)

I have never seen a child without thinking it will become aged, nor a cradle without seeing a grave. (25.)

You seem to be happy; that is sad. (25.)

The burden of great despair that nothing lightens. (25.)

I now see my maturity bordering on decay. (25.)

I have never had a sentiment that I have not tried to be done with it. (30.)

I mock at everything, even at those I love most. (31.)

I was born with a heap of vices which have never even looked out of the window. I love wine and do not drink. I am a gambler and have never touched a card. Debauchery attracts me, but I live like a monk. I am at bottom a mystic, but I have no faith. (31.)

Happiness is an invention of the devil in order to make the human race mad. (32.)

The love of humanity is as sorry a thing as the love of God. (32.)

If I ever achieve any success I shall greatly regret it. (32.)

Despair is my normal state. (36.)

What a city of the dead is the human heart. (36.)

Paganism, Christianity, Smuggery. These are the three great evolutions of humanity. It is not pleasant to find one's self in the last. (50.)

The odor of corpses disgusts me less than the miasm of egotism breathing from all mouths. (50.)

The mass, the number is always idiotic. (50.)

Do you know what is worse than all this? It is that one becomes habituated to it. (50.)

I will vomit upon my contemporaries the disgust with which they inspire me, even if I have to burst my breast to do it. (52.)

It seems to me I am traversing an endless solitude in order to go I do not know where. And I myself am the desert, the traveler, and the camel; all in one. (54.)

In the biographic clinics of private or of public patients, there is a constant repetition of the complaint of old age coming on prematurely, even in youth. Eyestrain suffering quickly etches in the face the indelible lines of the waste of life in conquering the insuperable and Sisyphian task. It is indeed an ever-recurrent and never-renounced Cadmean victory. In Flaubert's case, it, of course, began early. His "innocencies," "simplicities," etc., appeared in childhood, and his school days were miserable.

In my own eyes I seem immeasurably aged, older than an obelisk. (25.)

Alas, I am not as gay as formerly. I am growing old. I no longer have that magnificent *blague*, etc. (24.)

Ten years ago I was ruddy, all was perfume, and I exhaled life and love; now I see maturity near to withering. (25.)

For three days, although I work long (about ten hours a day), I am seized with an unparalleled sadness; I feel in my soul a mortal colic of bitterness. (25.)

Oh, how old I am growing, how old! (32.)

Sometimes I feel exhausted and tired to the marrow of my bones, and I think of death with longing as an end of all this anguish. (38.)

I have had hypochondria. Once at the height of my youthfulness I was thus seized for eighteen months, and I nearly succumbed. (38.)

I am submerged in a kind of black melancholy which appears with or without reason many times during the day. It passes and then it begins again. It is a long time since I have written. Nervous strength fails me. (49.)

As for myself, I am a used-up man; my brain will never again act normally. (49.)

His profound ennui, discouragement with everything, his wish for death, to be forever rid of his *moi*. (51.) (*Goncourts.*)

But I feel myself mortally wounded. To create a work of art one must not be burdened with care, and this is not true of myself. I am neither Christian nor Stoic. I shall soon be fifty-four years old, and at this time of life one does not change his habits or remake his life. The future has no good to offer me, and the past horrifies me. * * * Old age and decadence. As to literature, I do not believe any more in myself. I find myself empty—a discovery with little consolation in it. (54.)

I am seized with fits of prostration, when I feel as if annihilated or about to explode. (55.)

As for myself, I consider myself done for. My brain will not recover itself. One cannot write when one has lost one's self-esteem. I only ask for one thing, that is, to die and be quiet. (59.)

And this of a man of splendid natural health and endowment of vitality, normally exuberant, expansive, and life-loving. As in others, here, too, the depression and abnormality proceeds almost to insanity. At the age of 19 Mme. Lugier told the Goncourts that she feared he would lose his mind. There is a lurid suggestiveness in the story of Flaubert, told by himself, in reference to a poor, hysterical and weak-minded man who believed he had a tape-worm, and whose entire life and actions were dominated by the tyranny of this belief, so that it dictated his food, drink, his going and coming, etc. Flaubert was fascinated and ends the tale by, "I find it makes me giddy."

Louis Lambert of Balzac struck me like a thunderclap; it is the story of a man who became insane in thinking intangible things. This has stuck to me with a thousand hooks. (31.)

How close to insanity we sometimes feel ourselves, I especially. (31.)

After bordering on, "grazing" madness or suicide, I am now completely recovered. (49.)

In all the previous cases studied and in the vast majority of private patients suffering from eyestrain, the oculist finds an unconquerable driving and necessity of walking, journeying, hydropathizing, or some other form of eye-rest. In Flaubert's case there are illuminating and seemingly contradictory exceptions to the rule. But closely studied they not only "test," but they "prove" it. In the first place, Flaubert spent more time in travel and trips abroad than the "Monk of Croisset" is usually supposed to have done. There was the summer walking tour with Du Camp, and the two years' Oriental journeying; there was another trip to Africa, one to England, a coaching tour through several countries, many outings to Paris, etc. During these times there was a return of normality, happiness, gayety, while melancholy, pessimism, and ill health disappeared in an instant, and until the day of the return and resumption of literary labor. Then sickness and horror began. It is true that while at his work in his room he was seemingly the worst of hygienic sinners as regards exercise. But thereby hangs a tale! The beginning of the habit of staying in his room and not exercising was naturally and surely the shock and fear of having epileptic seizures while out-

side of the house. There was a reckless, ill-advised, but most determined resolve on that score. His mother had to torment him to make him walk in the garden. He never went beyond, he had no horse, no boat, etc. He would sit half a day in the same position. He worked at his literary task fourteen or fifteen hours every day, going to bed at 4 A. M., and often at it again as early as 9. This continued for some eighteen months. At the age of 32 he says he had not taken a walk or seen the country for two years. He finally came to contend that walking was hurtful to him or to anybody. He tried to "get even" with the still small voice by such outbursts as these:

Too much rowing, too much exercise! Yes, sir! The civilized man has not such a great need of locomotion as our friends, the doctors, insist. (57.)

I am now reading books on hygiene; how comical they are! What impertinence these physicians have! What asses, for the most part, they are! (53.)

I am reasonable. I go out every day. I take exercise and come back tired and even more stupid. This is what I get for it. (54.)

The overlooked solution of this sorry and puzzling contradiction is at hand: While at his work he walked, howled, stamped, declaimed, like a madman. Passers-by wondered and gossiped. This served a double purpose. It enabled him to get exercise of a sort, it is true, but real nevertheless, and it was his peculiar and logical method of whipping himself into excitement, "white heat," that is, of overcoming the inhibition of mental action due to his eyestrain.

My chamber walls remember still my frightful oaths, the stampings of my feet, and my cries of distress which I vented alone. (24.)

It is very late, and I am tired. My throat is raw from having yelled all the evening in writing, according to my exaggerated habit. (32.)

Let no one say that I take no exercise, for I carry on so that sometimes I walk several leagues a day in composing. (32.)

I howl! I sweat! It is glorious! It is sometimes decidedly more than delirium. (34.)

Howling from morning until evening almost to break my breast. (38.)

In the silence of my workroom I indulge in such howlings and fury that one would think it was a horse galloping, neighing, and kicking. (39.)

There is scarcely one eyestrain sufferer that is not a victim of insomnia. When the morbid reflexes are resisted by the brain, when one organ is not too persistently or violently harmed, when the struggle for health is obstinate, and its regaining has not become impossible, then sleep is possible and some measure of refreshment is usually secured. Flaubert's case again illustrates the clinical truth:

I have been two days without accomplishing anything and I am very tired, worked out, most sleepy. (31.)

For too many nights I have gone to bed late, rarely before three o'clock. It is a stupid way in which I exhaust myself, but I wished so much to be done with this novel. (32.)

I slept a good part of the afternoon, and took up my work again in the evening with great exhaustion. (32.)

I have the greatest need of sleep now for several days, and I prefer to lie completely fallow rather than half-work. (32.)

For two and one-half months my best night's sleep has been five hours. Finally, after three days, I slept my fill and am brutalized by it. (51.)

I sleep twelve hours a day; it rests my poor brain. (52.)

In the last eight days I have slept altogether ten hours. I keep up with cold water and coffee. (55.)

I have probably injured my brain severely, judging according to my sleep, because I sleep every night ten or twelve hours. Is it the beginning of softening? (56.)

That mysterious, protean, universal disease, called by the senseless name, "migraine," is surely 99 times out of 100 due to eyestrain, and just as certainly Flaubert was a lifelong sufferer from it. His naturally strong, and in all parts and organs equally strong, physique enabled his organismal wisdom to endure the assaults of the morbid reflexes upon each and every individual part with marvelous success. Only once, indeed, did one mechanism, the brain, fail to neutralize or cast off the ceaselessly incoming irritation or morbid reflex. But, thanks to its inherent vigor, and probably to opium, it was able to resist the epileptic storm, and the ship righted itself finally, and pursued its course. I shall briefly allude to some of the diseases which are now more or less well recognized as the results of eyestrain, the effects of the derouted reflexes, seeking a denied outlet for their excesses and morbidities of innervation.

It is remarkable how often eyestrain patients complain of ever-recurring colds, coryza, grippe, etc., and how free they become with proper glasses. I have one patient who gets a violent cold or coryza whenever his glasses are so ill-adjusted as to bring his astigmatic axis five degrees out of precision. Many such cases could be epitomized. Flaubert suggests a similar story.

My cold has perhaps purged my head, for I feel better. (32.)

For three days extremely stupefied with a violent coryza. (34.)

Grippe has seized me, of the most violent kind, with diseases of the stomach. (37.)

My grippe appears to be lightening. (46.)

Frightful colds and grippe, for six weeks. (52.)

An abominable attack of grippe. I cough, I blow my nose, I spit, I sneeze continuously, and I have fever at night. (53.)

"Rheumatism" and "neuralgia," etc., are frequently only meaningless names for eyestrain. At 26, Flaubert had "rheumatism" in the neck.

I write you with great difficulty, because since yesterday I have an attack of rheumatism which gets worse every hour. I suffer enormously and am most irritable. (31.)

My winter has been miserable. I have suffered from rheumatism and from violent neuralgia. (45.)

I was sick all last week; my throat was in a frightful condition. (51.)

I have had to have one of my last molars pulled out. Besides, I have lumbago, and moreover blepharitis. (57.)

Flaubert suffered frequently from boils and skin affections, and still more from "toothache," of which there are bitter complaints throughout much of his life. In private practice there are occasional examples demonstrating that the eyes are the causes of such affections.

Apparently that no organ should be exempt from the morbid reflex, the ears (as sometimes happens) became abnormally sensitive, and sometimes the hearing was so peracute as to become a real torment. Flaubert tells one of his correspondents that he has heard people speaking in a low voice through closed doors thirty yards away.

As was to be expected, there are few and unimportant complaints of the eyes themselves. Photographs show these to have remained exceptionally clear and healthy. There are a few complaints of styes, blepharitis, etc., and just before death he says that his "eyes begin to grow weary, for I have abused them more than ever." This is all in accord with recognized clinical experience. The more perfectly visual acuity and binocular vision are preserved, the more certainly the morbid reflex to the eyes is escaped, and the more certainly other organs must bear the brunt and the hurt. The more the complaints as to the eyes, the better the general health.

The irritability and sensitiveness resulting from all the unhygienic conditions, overwork, and disease, were natural and necessary. It is an old and daily-repeated story:

If having sensitive nerves were enough to make a poet, I should be a greater poet than Shakespeare, than Homer. (31.)

Mother came in at ten to say good-night, and I was so frightened that I shook with terror. * * * What a wretched machine is this body of ours, and all because a fellow was working at a phrase. (31.)

In order to write there must be the *impossibility* of being interrupted, even when I wish to be interrupted. (32.)

The bromide of potassium has calmed me. (54.)

Some writers and one of his physicians have charged Flaubert's excessive smoking as being the cause of some of his symptoms. He did smoke too much throughout his life. Once he speaks of having smoked fifteen pipes in one day. It is possible that his inflammation of the tongue in 1854 may have been caused by the habit. Flaubert did not believe in the theory.

In what vices I should indulge if I did not write! The pipe and the pen are the two safeguards of my morality, a virtue which is dissipated in smoke by the two tubes. (32.)

We cannot tell; we know nothing about the effects of small doses of tobacco (in chewing and smoking) habitually kept up for years. In an age when billions of money are expended in tobacco, the medical profession is, apparently, concerned not at all about this important drug-habit.

The two organs most commonly affected in eyestrain, the two almost constant symptoms of "migraine," are headache of some kind, and indigestion of any kind. As to headache, the "iron band about the head" is a symptom almost every day complained of in the oculist's office. Flaubert speaks of it, after writing twelve hours:

My mind is worse off—due to the leeches put on me yesterday, and which scratched my ears. (23.)

For several weeks I have had pain in my cerebellum so intense as to make me cry out, and Sunday the attacks began again. (32.)

Heavens! How my head aches! I must go to bed. My thumb is furrowed by the pen, and my neck wrenched! (32.)

Concerning the diseases of digestion, a great authority, a famous general physician, Professor Musser of Philadelphia, has lately publicly asked:

Who has not seen the correction of errors of refraction relieve so-called "bilious attacks," periodical vomiting, anorexia, indigestion, and other gastric symptoms? The cure of grave organic [should be *functional*] ocular defects relieves similar gastric conditions. The subject is familiar to all.

With proper reverence for Dr. Musser, it must be said that neither is the subject "familiar to all," nor is it scarcely ever acted upon. Every book on gastric and intestinal diseases, in the world, shows the utter, absolute and appalling unfamiliarity of "all," at least "all" the "experts." Poor Flaubert and all the rest of the Europeans could not suspect it, and at this present day they could not get a physician in all the continent to think of such an etiology nor of such a cure. This is how they suffered then, and still suffer:

After all, life is only a continual indigestion. (26.)

My viscera have been seen through my skin leaping and bounding. (31.)

All the evening I have had pain in my stomach and belly to make me faint if I were capable of fainting I think it is indigestion. I have also great headache; I am exhausted. (32.)

All this time I have been physically ill, with atrocious stomach troubles. I have had to go to bed with cramps in all my extremities, with pains in the back of my head. (38.)

[Back at Croisset.] I have suffered greatly this autumn: I have had frightful stomach disease. (38.)

When I wrote *Bovary* I had the taste of arsenic in my mouth so much, and was so poisoned myself, that I had two attacks of indigestion that I twice vomited up all my dinner. (47.)

One of his biographers adds that there is no exaggeration in this as when Flaubert gave way to his feelings he repeatedly became literally and physically sick at his stomach. A better observation would have noticed that it was not a powerful imagination in sympathy with his heroine that caused the stomachal malady, but that it was simply old-fashioned sick headache, "the disease whose nature is unknown" (Osler), but which is always due to eyestrain.*

When I am not hungry the only thing I am able to eat is dry bread. The most indigestible things, such as green apples and lard, lessen my stomachal distress. And so on. A man without common sense cannot live according to the rules of common sense. (48.)

Flaubert, like thousands of others suffering from "migraine," was struck by the quick recovery, and the equally quick return of the disease:

One thinks himself cured at times, and then awakes to find greater suffering than ever.

To epitomize: Flaubert from boyhood to the day of his death was the victim of unrecognized eyestrain. His epilepsy, typical or atypical, his "hysteroneurasthenia," his "migraine," or whatever name be given his symptoms, was the glaring consequence of abuse or overuse of slightly astigmatic or otherwise ametropic eyes. The mental and moral shock of the discovery led to the morbid seclusion, and unhygienic life, but every indication points to a control of epileptic tendency by means of opium. The character of his *Saint Anthony* (second style) and the Paris episode of morbid activity alternating with morbid slumber, corroborates this view. Denied creative ability, Flaubert's mind took refuge thereafter in the perfection of phrase and style, and a vast school of so-called literature, morbid in itself, and inartistic to death, sprang from the diseased example. Flaubert's success in this endeavor was self-confessedly a failure. The life of unhygiene, of systemic, and varied disease, was partly offset by the violent "exercise" he habitually took in his study, by means of howling, declaiming, stamping, walking, etc. The organismal wisdom thereby achieved three compensations: 1, ocular rest; 2, excitation of the emotions and mind to overcome the inhibition of eyestrain; 3, muscular exercise. The inhibition of normal cerebration due to his eyestrain is the second most striking fact both of his history and of his literary activity. For the rest, his diseases of the head and stomach, his colds, grippe, rheumatism, neuralgia, etc., were mostly and chiefly those now well recognized as exhibitions of "migraine," so-called, or more correctly called eyestrain. His pessimism was the inevitable result of eyestrain, plus the incidental conditions described.

Swift, Nietzsche, and Flaubert! None indulged in more reckless and unhygienic abuse of their bodies than these. They did not scorn their duties to this heroic friend and servant, they were utterly unconscious of duties to it; none more certainly outraged every common-sense rule of ocular hygiene; in none were the horrors of eyestrain more plainly manifest, in none its wrecking power on character, intellect, and will, more evident; and in none were the injustice and insults more patently avenged. And they were the world's arch pessimists and cynics, the three greatest haters of humanity which humanity can exhibit.

*How little Flaubert's stomach was an "irritable" or morbidly disposed organ is shown by the fact that in an eleven-day rough sea voyage he was not in the least seasick, but was the life of the whole company, full of joviality and wit.

SALINE BEVERAGES IN TYPHOID FEVER AND THEIR EFFECTS ON HEAT DISSIPATION.

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In typhoid fever the specific germ is first taken up by the intestinal lymphatics, and from these are carried by the lmph stream to the blood. The germ can be cultivated from the blood in a large percentage of cases before the Widal reaction can be obtained.[1] Coleman and Buxton[2] found in examinations made during the first week of the disease positive results were obtained in 93 per cent. They write: "It would appear from this that in typhoid fever the earliest and principal seat of infection is the blood, and that the disease may in truth be regarded as septicemia. If this be true, we may, in passing, call attention to the utter futility of attempting to control typhoid fever by the administration of intestinal antiseptics."

While the germs are distributed through the blood they have a tendency to congregate in the lymphatics and the intestinal lymphatics (Peyer's glands), which soon become impaired in their function by this invasion. Relating to this condition Thacher[3] writes: "The smaller lymph channels, more particularly in and around the nodules of lymphoid tissue, are especially sensitive to the infection. The tendency which typhoid bacilli show to lymphoid structures of the mucous membrane is not limited to the intestines; the intestinal lymphatics, by being also exposed to colon bacilli, may also become infected by them."[2]

The fact that the typhoid germ is taken up by the lymphatics and that the lymphatic system seems to be especially favorable to their multiplication, no doubt accounts for the want of leucocytosis in typhoid fever. Landois[4] says: "The leucocytes increase by division in part by mitosis, in part by amitosis, especially in their germ centers, that is, the lymphatic glands and adenoid tissues." Thus, when the lymph glands are invaded by the typhoid germ the leucocytes can no longer use these glands as germ centers, for multiplication and hypoleucocytosis is the result. While the leucocytes are diminished in the blood, there is an intense phagocytosis in the areas of infection, *i.e.* the lymph glands. This phagocytosis is most intense in those glands nearest the location of the primary infection, the small intestines, but occurs in diminished intensity in all lymphatic glands in direct proportion to their remoteness from the intestine—as spleen, liver, and heart.

The swelling of the lymph glands is due to the distention of the phagocytes with lymphoid and other cells which finally interferes with the capillary circulation: phagocytic degeneration occurs, fibrin is precipitated, and necrotic tissue is the result. This necrotic tissue may become resolved, or otherwise an ulcer is formed.

Mallory,[5] in conclusion of an exhaustive study, says: "These phagocytic cells are produced most abundantly along the line of absorption from the intestinal tract, both in the lymphatic apparatus and in the blood-vessels," and "that they are produced by the absorption of toxins eliminated from the blood-vessels. The necrosis of the intestinal lymphoid tissue is accidental in nature, and is caused by fibrinous thrombi, which owe their origin to degeneration of phagocytic cells beneath the lining endothelium of the vessels."

In treatment of typhoid fever there is universal agreement upon the value of milk diet, but in the further management there are three principal modes of practice. First, the various intestinal antiseptics, second, the plan of no medication, and, third, the plan of physiological elimination of bacteria and their toxins, and that of heat dissipation by saline beverages. To illustrate the three varieties of treatment, or better, management, I will briefly report seven cases:

Case I.—Mr. G., aged 51, admitted September 5; temperature 103.5°. Was given calomel and soda and put on a milk diet, 4 oz. every two and one-half hours and 15 minims chlorine water every four hours; broths were given as required. In twenty-one days he was convalescent. The average temperature for the time was 102.2° (the average temperature obtained from the maximum and minimum daily temperature) and the average urine was 25.76 oz.

Case II.—Mr. T. C., aged 25, admitted the third day of the disease with temperature of 104.1. He was given calomel and castor oil. Diet was 8 oz. of milk every four hours with lemonade and broth occasionally. Baths were given when the temperature was above 102.5. There was no medication. On the twenty-second day of the disease he was convalescent, average temperature was 100.97°, average urine, 35 oz.

Case III.—Mr. H., admitted the fifth day of the disease, with temperature 104°. This case was managed the same as number II, with no medication; the nineteenth day of the disease temperature was practically normal, and he was given soft egg and toast. There was a reinfection and temperature went up to 104° for three days; the original diet was resumed, and he was convalescent on the twenty-seventh day. The average urine, 39 oz., and temperature, 100.5°.

Case IV.—Mr. F., aged 27, had temperature of 103.4° on day of admission; was put on milk and lime water diet and given 15 minims chlorine water every four hours; after three days this was discontinued and he was given an antiseptic solution, 4 oz. every four hours; on the seventeenth day of admission he was convalescent, average temperature, 100.8°, average urine, 49.29 oz.

Case V.—Mr. F., aged 24, temperature on admission was 105°; his diet was two quarts of milk each day, and he was given two quarts of antiseptic solution per day. He was convalescent on the twenty-second day, average temperature, 102.25°, average urine, 77½ oz.

Case VI.—Mr. K. Temperature on admission, 103.8°; diet and treatment same as in Case V; convalescent on twenty-second day; average temperature, 101.3°; urine, 81 oz.

Case VII.—Mr. R., aged 36, had temperature of 104.8°; on first day was given castor oil and put on milk diet, two quarts per day, sponge bath several times a day; no medication, but was given three quarts of saline beverage per day. The following is the formula: Sodium chloride, 10 grains, potassium bicarbonate, 5 grains, in 8 ounces of water; add a teaspoonful of lemon juice; give every two hours. He also had 7½ grams of castor oil every four days. Castor oil is recognized as the best remedy in infantile diarrhea and cholera infantum; it cleans out the retained septic material, and is, in fact, a true intestinal antiseptic. Its use in conjunction with the saline beverages in typhoid fever keeps the mucous lining of the intestines clean and prevents the troublesome and exhausting diarrhea. After six days the evening temperature did not exceed 101° and the saline was reduced to five pints per day. The nineteenth day he was convalescent, the average temperature was 100.76°, and the average urine, 86.3 ounces. Tongue remained clean throughout the disease; no delirium and not much emaciation.

Case VIII.—Mr. H., aged 21, had temperature of 103.7° the first day. The case was managed the same as No. VI, and he was convalescent on the twenty-first day; average temperature, 101.5°. The nurse failed to accurately record the urine, tongue remained clean, and no unfavorable symptoms developed in the disease.*

In all these cases a positive Widal reaction was obtained, and in Cases II and III the germ was cultivated from the blood, and a positive diagnosis made several days before the Widal reaction could be obtained—in one case as early as the fourth day. At the first glance there does not seem to be much difference in these cases; they were all types of mild infection, or were rendered mild by their management.

A fever patient, with a temperature of 104.8° in a person weighing 140 pounds, has about 125,000 heat units in excess of the normal temperature. This represents Case No. VI, when the use of saline beverages was commenced. For the following three days the average temperature was 101.9° and the average daily urine, 97 ounces. In part this decline of temperature was due to washing out of the bacteria and their toxins. Simon,[1] in writing of the typhoid bacillus in the urine, says: "Often the bacilli are so numerous as to render cloudy a freshly voided specimen of urine;" and in part the decline was due to the germicidal power of the blood, being increased by the stimulating effect of the salines on the intestinal secretions,[6] and also in part it was due to *physiological* heat *dispersion* by diuresis, which in this instance amounted to 113,000 calories, each twenty-four hours.

In a normal person heat production is a continuous process estimated by Landois[7] at 100,000 calories per hour and exceeds heat dispersion; also a continuous process just enough to maintain the body at approximately 37° C. In febrile disease the bacteria and toxins act to increase heat production to a greater extent than dissipation, and an elevation of temperature results. In diabetes mellitus, on the other hand, heat dissipation by diuresis exceeds heat production and a subnormal temperature results. Tyson[8] mentions a lowering of 1 to 2½ degrees F. and Landois[7] states that a reduction of temperature below 86° has been observed in diabetes. This subnormal temperature is due in part to heat dissipation by diuresis. In cholera[9] also there is often a lowering of temperature from 1 to 10 degrees, due in part to the enormous discharge and vomit of rice water carrying the heat of the body with the serum. The following chart will show the relative heat dissipation in these cases:

Case No.	Days duration of disease	Average daily temperature C.	Average daily urine, ounces	Average daily heat dispersed in calories†	Treatment and diet
1	21	39.01	25.06	30324	Milk; chlorine water,
2	21	38.31	35	40531	Milk; no medication.
3	27	38.04	39	44845	Milk; no medication.
4	17	38.22	40.27	56944	Milk; chlorine water and antiseptic solution.
5	22	39.02	77.5	91410	Milk; antiseptic solution.
6	22	37.72	81	92357	Milk; antiseptic solution.
7	18	38.2	86.3	09651	Milk; saline beverage.

*For access to case records the writer wishes to acknowledge his indebtedness to Dr. H. E. Elsner of the Hospital of the Good Shepherd, Dr. J. L. Heffron of St. Joseph's Hospital in this city, and to Dr. C. L. Dana of Bellevue Hospital, New York.

†The heat unit, or calorie, is the amount of heat required to raise the temperature of 1 gram of water one degree; 1 fluid ounce of water weighs 29.5737 grains; on account of its salts 1 fluid ounce of urine sp. gr. 1012 would weigh 29.927 grains. The specific heat of urine would be greater than water. For want of definite information the writer assumed the specific heat of urine to be 101, which would give 30.228 grams calories in 1 ounce of urine. Thus, Case I, 25.76 ounces × 30.228 × 39.01 = 30.224 calories dissipated per day. The writer wishes to acknowledge his indebtedness to Dr. Albert P. Brubaker, professor of physiology and hygiene at Jefferson Medical College, Philadelphia, who has kindly gone over this work and who writes, "I have carefully gone over your method and calculations, and so far as I can see both are correct."

It would seem that the use of chemical substances like chlorine water are of slight value if not utterly futile, as Coleman and Buxton conclude,[2] when the blood is swarming with bacteria as early as the third and fourth day as has been observed by Dr. Buxton[1] and others.

We trust the evidence of the Widal reaction for the purpose of diagnosis without thinking that its action results from the fact that the blood has been swarming with typhoid bacteria for days, until the first crop—so to say—are dead and the agglutinins[2] therein contained are released into the blood stream as evidenced by the agglutination which we rely upon for positive diagnosis, and then we treat the case with antiseptics as one of local intestinal infection. Why is not one therapeutic belief in the facts of bacteriology as logical and strong as our confidence in it for the purpose of diagnosis?

Chlorine water is one of the most powerful oxidizers known and quickly combines with any organic substance, and to suppose that it will pass out of the stomach uncombined seems to be beyond the legitimate use of the imagination; experiments *in vitro* are hardly applicable to processes *in vitro*. The use of large quantities of acetozone water—one to two quarts per day—is of value in reducing the temperature by diuresis, at the same time washing out the toxins and bacteria, but the same amount of plain water would do as much. It is of doubtful value as an intestinal antiseptic. Its use is open to one great objection which overbalances any good that might come from its use. The diuresis produced soon exhausts the system of its salts, which are necessary to preserve the integrity of the blood plasma and for the function of leucocytes. The exhaustion of the salts from the blood tends to cardiac arrest, and, in a critical case, when the life nearly hangs in the balance, the little one way or the other will determine the result. A deficiency of inorganic salts will entail cardiac arrest, which would not occur if the blood had the required amount. This is well stated by Green[10] when he says, "Exhaustion as applied to the heart expresses states in which the inorganic salts necessary to the contraction of the heart are removed or disturbed." This criticism applies usually to Cases II and III, which were on an exclusive milk diet but no medication; the fatal defect is that the system is being exhausted of its salts and, as stated by Sajous,[6] are not replaced in the restricted diet. Hatcher and Sollman [11] made an exhaustive study of the so-called retention of chlorides in febrile diseases and demonstrated positively that it was salt starvation, and, recognizing this defect in a milk diet, they recommended the addition of fifteen grams of sodium chloride to the milk taken per day.

It is evident that the use of saline everages at the same time augmented the elimination of bacteria and toxins, also preserved the molecular constituents of the blood, and aided materially in reducing the temperature. A comparison of Cases I and VII illustrates this. In Case No. I the heat dissipation was only 30,324 calories per day, while in Case No.

VII treated with salines it was nearly 100,000 calories per day for the entire course of the disease.

Cases of excessively high temperature require sponge, or tub baths, but we should recollect that, as stated by Landois,[7] the secondary effect of cold baths is to stimulate heat production, and that a case of fever treated with cold baths shows a greater daily temperature variation, due, no doubt, to the secondary stimulating effect. Schafer[12] says that "the mean daily temperature and daily variations are very slightly or not at all affected by baths."

The saline beverages preserve the germicidal powers of the blood by acting upon the albuminates of the serum according to Buchner[13] or by increasing the alkalinity of the blood as Von Fodor[13] demonstrated, and in that measure increasing the activity of the white corpuscles. Vaughan and Novy[13] say, "It has been shown, beyond controversy, the blood serum owes its germicidal properties to the white corpuscles," but Sajous[6] has pointed out that it is a trypsin-like substance taken up by the white cells.

However, if there be a lack of agreement as to the identity of the germicidal powers of the blood, there is unanimity in the opinion of the necessity of the alkaline salts in the blood for its efficacy, and any treatment of febrile disease is defective if due regard is not paid to maintaining the alkalinity of the blood. Not only is leucocytic formation prevented in their germ centers, the lymph glands, but, according to the exhaustive study of Mallory,[5] they are actually destroyed by the phagocytic endothelium cells; these phagocytic cells take up and digest lymph cells, red blood cells, and everything that has become contaminated with typhoid toxin.

They are the defense of the system, for their activity and vigilance intercepts all sorts of intestinal bacteria and toxins that would otherwise find entrance into the blood through the lymph channels. In typhoid, the lymph cells evidently become saturated with toxins, and to destroy the toxin the cell must be destroyed, as we blow up a building to check a conflagration. In this fierce fight the physiological function of lymph glands, that of taking up and supplying the products of digestion for the use of the system is impaired or arrested, so that the patient lives off his own flesh.

The real defensive fight is during the *first week* of the disease; if the infection is of a mild character the phagocytic cells are able to digest and destroy the toxins without material injury to the lymph glands; and, on the other hand, if the infection is severe and effects of the phagocytic activity exhaust the salts and fluids of the body, upon which their functional life and activity depend, they become weakened, undergo degeneration, and fibrin is precipitated. This occludes the circulation and a necrotic center is formed; these foci may undergo resolution, or, in more severe cases, it may slough off and form an ulcer. In this connection we may note the effect of typhoid germs and toxin upon the motor cells of the spinal cord. Nichols[14] found extensive cell degeneration in a case that was fatal on the eleventh day. The degeneration changes found were similar to those produced by arsenic, strychnine, alcohol, etc.; he says: "No doubt in our typhoid cases, too, they may be attributed to the direct action of the typhoid toxin."

From a consideration of all of these facts which constitute the pathology of typhoid fever it is evident that the lymphatic system should receive our earliest attention in this disease. It is the phagocytic activity upon which depends the result. If a proper amount of fluids and alkaline salts are provided in the *earliest stage* of the disease their efforts are helpful, and, on the contrary, if these are withheld, then the efforts of the protective forces of the body are hampered, and the chances for an unfavorable issue in the case are increased.

The need and value of the *early* use of salines *in all febrile diseases* to preserve the antitoxic properties of the blood and cells was first pointed out by Sajous.[6] "Why not," says this investigator, "supply the system from the onset of a febrile disease, or, indeed, any other general disorder, with the constituents than preserve the mechanical freedom of all nutritional and protective functions, including those of the adrenal system itself?"

Following the publication of Vol. I of Sajous' "Internal Secretions," in 1903, the writer was impressed with the importance of the early and continuous use of salines in all febrile diseases, but could see no reason or justification for giving the fluid by hypodermoclysis, as had been done in pneumonia by F. P. Henry[15] or by enema. The first method is too surgical, and, besides, the system needs a continual supply, while the forcing into the tissues of 8 or 16 ounces at one time is not a physiological process to say the least. To use the solution by enema is to promote the absorption of intestinal bacteria and toxins. As stated by Landois,[4] "Sodium chloride solution is better absorbed than water," and "from the stomach are absorbed aqueous salt solutions within six minutes."

Believing the stomach to be the physiological organ fitted to absorb fluids according to the wants of the system, the writer began giving saline beverages, first in pneumonia,[16] afterwards using it in scarlet fever and in typhoid fever. The writer does not claim that this method of using saline beverages is the best treatment for very desperate cases, but if saline beverages are used *from the inception of the disease*, as emphasized by Sajous, the number of desperate cases will be very materially decreased. The demand of the system for a continuous supply of salines is imperative. Landois[4] states that an adult in moderate exercise consumes 32 grams of inorganic compounds (salts) per day, and Hatcher and Sollman state that a person on a milk diet should have 15 grams of salt; so that if the writer has erred it is in not using enough, for in taking, 10 grains of sodium chloride and 5 grains of potassium bicarbonate twelve times a day would only amount to about 15 grams in twenty-four hours.

In giving the saline beverages, 10 grains of sodium chloride and 5 grains of potassium bicarbonate are added to 8 ounces of water; a teaspoonful of lemon juice is added, which produces a mild effervescence and which renders the drink very palatable, so that it is gratefully taken. There is about two-thirds of a grain of free citric acid in each dose, which gives it a pleasant tartness and adds to its palatability.

The absolute need of the system for water need hardly be mentioned when we consider that entire life processes are enacted in the various body fluids, and also that heat dissipation is almost entirely accomplished by the elimination of water, through the lungs, skin, and by urine. In febrile diseases the demand for water is augmented by reason of the increased respiration as well as by the increased metabolism throughout the system, and, if not supplied in abundance, heat dissipation is lessened, cellular life hampered, and the toxins retained: the fibrin is more readily precipitated in the lymph glands to form a focus for necrosis.

There can be no objection to any additional treatment deemed necessary in conjunction with the use of saline beverages, and the writer urges the pro-

fession to give their use a trial in febrile diseases and to report their results, and at the same time to make records of heat dissipation by the urine, that we may accumulate facts regarding it in different diseases, for it is evident that we have neglected to observe this physiological phenomena as a factor in many diseases.

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THE DIAGNOSIS OF SURGICAL DISEASES OF THE KIDNEY.*

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The task of making a diagnosis usually rests upon the shoulders of the general practitioner. Difficult and onerous as the problem often is, it is, nevertheless, one that he gladly accepts, for its solution imparts interest to his routine work and affords him the basis of a rational method of therapeusis.

The recognition of those disease processes which are surgical in character is especially hard in their initial periods; in their fully developed stages, when all the classical symptoms have developed, the diagnosis is much simpler, but at such times the aid that can be afforded to the patient is materially curtailed and lessened. Close clinical observation, exploratory incision, experimental research, and laboratory study have enabled us to interpret the manifestations of these affections much earlier, and to apply our therapy more speedily and with more success.

Especially is this true of the surgical diseases of the kidney. With the accurate methods at our disposal for the examination of these organs and their secretion we are able to ascertain, not only whether they are healthy or diseased, but also, in most cases, the exact nature of the malady which is present; and, further, we are in a position to find out whether one or both organs are affected, and, if the latter is the case, which is the more extensively involved, and finally we can determine what the combined and individual functionating capacity of the two organs is.

To a consideration of these several facts this paper is to be devoted, my aim being to present to you the subjects of the diagnosis of kidney disease and the determination of kidney function in their modern conception, so that you should be ready and able to interpret the clinical phenomena which diseases of these organs present in their early stages and to use them as a guide for your counsel to the patient.

*Read before the Eastern Medical Society, January 12, 1906.

The health or disease of the kidneys is determined from a study of the anamnesis, from physical examination, from urinary analysis, from the appearance of the ureteral mouths as seen with the cystoscope and from *x*-ray examination. The question as to whether one or both organs are diseased is positively answered by examination of the urine, drawn from each kidney by means of the ureteral catheter; and the functionating capacity of the two organs is ascertained from the total amount of urea which is eliminated in the twenty-four hours, and from the cryoscopic index of the blood and urine, while that of the individual kidneys is determined from the percentage of urea in the separated urines, from the cryoscopic index of the individual urines, and from a comparison of the rapidity and amount of chromogen and sugar which each kidney eliminates after a hypodermic injection of methelene blue and phlorizin respectively.

The Anamnesis.—The importance and aid of a complete clinical history in making a diagnosis is not appreciated by all practitioners. Their manifold duties often forbid them from devoting the time that is necessary for extracting from the patient a detailed history of his complaint, and yet it is safe to say that without this no correct diagnosis can be made in the majority of cases. A great many practitioners rely upon their examination of the urine and upon the presence of an enlarged kidney for establishing a diagnosis of surgical disease of these organs, and this, in spite of the well-known facts that even with well-advanced renal diseases there may be nothing abnormal in the urine and no palpable tumor or swelling of the kidneys. If an early diagnosis of renal affection is to be made, all the data which it is possible to collect must be made use of, and among these the facts which are to be elicited in a carefully taken clinical history are of the utmost importance.

Most patients with surgical diseases of the kidneys suffer with disturbances, in the frequency of urination, or from abnormalities in the gross appearance and in the quantity of urine which is passed in the twenty-four hours; hence, in taking their clinical history it is essential to ascertain how often they have to urinate during the day and night, what the urine looks like, *i.e.* whether it is purulent or cloudy or bloody, and whether the pus or blood is uniformly distributed in the urine, or whether it is present only in the first or last urines, and, if bloody, whether the blood is bright red or smoky in color. All these details are of the utmost importance for diagnosis. Thus the only evidence of renal tuberculosis in its early stages may be frequent, painful micturition and cloudy urine. Again, pus or blood, which is present only in the first urine that is passed, is never renal in origin; from this source these abnormal constituents are always distributed uniformly in the urine; and again smoky urine is believed by Gomprecht to indicate the kidney as the source of the blood.

But while, as stated above, most patients have these urinary disturbances early in the course of their maladies, yet it is not at all infrequent to see those who have been afflicted with renal disorders for a long time, without having observed anything abnormal in the act of urination or in the urine. As only the intelligent are accustomed to watch the gross appearances of their urine, it is easy to understand how it is that even considerable grades of pyuria and hematuria pass unnoticed unless pain or frequency of urination direct attention to the urinary organs and their secretion. How often do we find the painless hematuria which accompanies

chronic granular nephritis, malignant disease of the kidneys, aseptic renal calculus, and some forms of renal tuberculosis pass entirely unnoticed by the patient! Such individuals often seek our advice for disturbances of their general health, such as anemia, gastric or intestinal disorders, and their thorough physical examination then reveals the existence of renal disease.

The family and personal history of the individual also afford data that are of value for the diagnosis of the nature and causation of the kidney affection. Thus the age of the patient, the duration of the symptoms, and the rapidity of their development are important points to consider in determining the character of the renal malady, for malignant tumors of the kidney occur with greatest frequency at the two extremes of life, *i.e.* in childhood and infancy, and in advanced years; tuberculosis is especially common in young adults; hypernephromata develop gradually, whereas cancer and sarcoma progress rapidly. A history of family or personal tuberculosis, of a previous gonorrhea or syphilis, of trauma to or operation upon the urinary organs, of past or present affliction with other acute or chronic diseases, such as infections, pyemia, eruptive diseases, hemophilia, or, in women, of pelvic inflammation, pregnancy and child-bearing, also furnish a strong suggestion as to the particular character and causation of the kidney disease. I remember three patients with large suppurating infarctions of the kidney following small, comparatively insignificant suppurations of the fingers and toes, and a recent case of perinephritic abscess secondary to a carbuncle of the neck.

I therefore make it an invariable rule to ask about and look for abrasions and suppurations of other parts of the body when I have to do with pyogenic affections of the kidney, and conversely I keep the kidneys constantly in mind when there are febrile movements accompanying these conditions that cannot be accounted for in other ways. I need only mention the frequency with which renal tuberculosis is secondary to tuberculosis of the lungs and other organs, the oft occurrence of pyelitis and pyelonephritis with pregnancy and child-bearing, of acute miliary abscesses of the kidney after trauma to and operations upon the urinary organs, to indicate how important it is to elicit all the details of the previous history in making a diagnosis of the nature and cause of a renal affection.

We must not expect, however, to be able to make a diagnosis from the data which the clinical history affords. This always rests upon the facts which we ascertain from examination of the patient and his urine. It would be carrying coals to Newcastle were I to enter here into a discussion of the methods of physical examination of the kidneys and urine. I may be permitted, however, to remind you that the kidneys are retroperitoneal organs, and consequently have no respiratory mobility, that they have a definite shape, that they occupy the loin, or can be replaced into the loin, and after replacement will maintain their position in the loin as long as the individual is recumbent, and that the colon lies in front and to their inner side. These characteristics, especially the colonic relations, are important in the differentiations of kidney tumors from neoplasms and swellings of other organs in the abdomen, and they should be determined in every abdominal tumor which occupies the kidney region. As has been just stated, the colon lies on either side, in front of and internal to the kidney, the ascending colon passing across the right one from below and to the right upward and to the left, and the descending colon crossing the left kidney from above and to the left, downward and to the right. The position of the colon is most readily determined after it has been distended. This is best done by inserting a rectal tube 10 to 12 inches into the lower bowel, and then either pumping air through it into the colon with the bulb of a Davidson syringe, or forcing CO_2 gas into it from the nozzle of an inverted bottle full of carbonated water.

The importance of careful urinary examination in the diagnosis of these diseases cannot be too forcibly stated. It is essential that we should know the total quantity of urine that is passed in twenty-four hours, its reaction, color, and specific gravity; whether it is clear or contains a sediment, and, if the latter, of what this is composed; whether the filtered urine contains albumen or sugar, and what its percentage of urea is; whether it contains crystals of uric acid, oxalate, triple phosphates, leucin or tyrosin, pus or red blood cells, casts, epithelial cells or microorganisms, especially tubercle bacilli streptococci, staphylococci, or colon bacilli. I cannot dwell too strongly upon the importance of examining the urine for the presence of microorganisms, and especially since it has been proposed and become the practice of many to treat in a surgical way these forms of chronic nephritis that are commonly classed as Bright's disease. We know that some varieties of chronic parenchymatous and interstitial nephritis are due to the pathogenic action of virulent bacteria, *e. g.* streptococci, staphylococci, and colon bacilli, which the kidneys strive to eliminate from the blood in conditions of systemic infection with these organisms. These varieties of chronic nephritis cannot be distinguished either clinically or histologically from the chronic nephritis due to other causes, and experience has already taught us that this class of cases are especially likely to be favorably influenced by decortication and nephrotomy. It is thus apparent to you that to help us to select the cases of chronic nephritis that are fit for surgical interference and also to aid us in making the prognosis, the bacteriological examination of the urine is a matter of the very greatest importance. It goes without saying that this examination demands that the urine be drawn by aseptic catheter after thorough cleansing of the meatus urinarius and anterior urethra, or by aseptic ureteral catheters from the individual kidneys.

It is hardly to be expected that the practitioner will himself have the time or the inclination or the requisite training to properly perform the tests and carry out the examination I have just briefly outlined. We are fortunate, in this large city, of having at our disposal several excellent laboratories where the work can be and is thoroughly well done. It is necessary, however, that you should indicate what you desire the examiner to specially look for, and it is also important to remember that only positive findings have a real diagnostic value; negative ones mean nothing unless confirmed by repeated and repeated examinations.

The clinical history and a careful urinary analysis will usually enable us to diagnosticate the presence and probable nature of a surgical renal affection; but they do not help us to ascertain which is the diseased kidney or whether one or both organs are affected. To answer these questions we have to rely on the signs afforded by physical and cystoscopic examination and on the evidence afforded by analysis of the urine drawn from each kidney by ureteral catheter.

If the diseased organ is palpably enlarged, then physical examination will at once enable us to de-

termine the site of the affection. It is an error to think, however, that every diseased kidney is enlarged, or that every enlargement of these organs can be palpated. The organs may be extensively diseased and yet not at all enlarged, and if they are situated high up under the last two ribs they may be considerably enlarged and yet not palpably so. It is important to remember, therefore, that while a palpable enlargement of the kidney is an indication of its disease, an absence of this is no evidence either of the health or disease of the organ.

Pain and tenderness of the kidney to palpation are often relied upon to decide which organ is diseased. These symptoms, however, are very misleading. Thus it is well known to every surgeon that in many instances the diseased kidney is never painful or tender, while its fellow organ, either because of the extra work which is placed upon it by the affection of the other kidney, or because of a urotoxic degeneration of its parenchyma which is induced by the disease of the other kidney, occasions considerable pain and annoyance. These signs are therefore never to be looked upon as positive evidence of the disease of these organs; they are simply suggestive and are to be considered in the light of confirmatory evidence of those signs of disease which are to be obtained by cystoscopic examination and ureteral catheterization.

It is to be regretted that these last-mentioned means of diagnosis of renal diseases are not employed as frequently as their worth demands. A great many practitioners still regard the cystoscope and ureteral catheter as pretty toys that give no information of the kidneys that is really of practical or material value, and, unfortunately, a great many surgeons think that the data which are to be obtained by the use of these instruments can be replaced by these which are arrived at by simpler methods of examination. Others, again, believe in the value of these methods of examination, but hesitate to employ them because of the danger of carrying infection to the urinary organs which their use exposes to. In answer to the first objection, the writer wishes to say that the experimental stage of the cystoscope and ureteral catheter has long since passed; to the second, that the facts that are to be gained by cystoscopy and ureteral catheterization cannot be obtained in any other way; and to the third, that aseptic methods of examination will protect the patient from the dangers of infection, and that care in the performance of ureteral catheterization will shield him from an infection in the bladder extending upward to the kidneys. At all events, the writer has had several hundred cases of cystoscopy and ureteral catheterization done in all sorts of diseases of the kidney and bladder, and thus far has not experienced a single instance of infection of the bladder or kidneys resulting from the use of the cystoscope or ureteral catheter. This is owing to the fact that thorough asepsis is observed, and that care is taken never to permit the ureteral catheter to scrape along the bladder wall before it enters the ureter, and to avoid all traumatism to the bladder or ureter.

So valuable and important are the data gained by cystoscopic examination and ureteral catheterization with the analysis of the separately drawn urines, that the writer believes no one is entitled at the present time to undertake the treatment of surgical diseases of the kidney unless he is prepared to make use of them.

It is not necessary here to describe the methods of performing cystoscopy and ureteral catheterization, nor is it essential to discuss the relative value of the different cystoscopes that are on the market to-day. These details are for the experts in cystoscopy and ureteral catheterization, and it is needless to say that such an one should be proficient in the manipulation of all the models that are in general use at the present time.

I wish to-night to state briefly the information that is obtained by cystoscopic examination and ureteral catheterization of the condition of the kidneys and their functionating capacity.

In performing cystoscopy for diagnosis of the health or disease of the kidneys, we are concerned in the appearance and position of the ureteral orifice, and in the condition of the vesical mucosa. The normal ureteral orifice is a faint flesh-colored slit or rounded hole, and lies in the lateral angle of the trigonum on a slightly elevated ridge. The margins of the orifice are sharply and clearly cut. From it there appears at more or less frequent intervals depending on the secretory activity of the kidney an efflux of clear fluid that resembles a wave of glycerin passing inward across the trigonum, and accompanying this efflux there is a distinct peristaltic wave of the ureteral orifice. Changes in the shape, size, contour, and position of the ureteral orifice, in the character of the efflux and in the intensity of the peristaltic wave are frequently amongst the earliest signs of renal disease, and often throw considerable light upon the character and extent of the kidney affection. In general terms we may say that the changes in shape, size, appearance, and position of the ureteral orifice corresponds to and indicates the changes of the renal pelvis and ureter. Thus atonic *dilatation of the kidney, pelvis,* and *ureter* is attended by similar dilatation of the ureteric orifice, which assumes an elongated and furrowed or golf-hole shape.

Pyelitis with acid urine is attended with some dilatation of the ureteral orifice; the efflux is turbid and the peristaltic wave may be increased in force and frequency; whereas in *pyelitis with alkaline urine* the ureteral orifice is somewhat dilated, its lips everted, and the seat of scald like erosions and surrounded by congested mucous membrane; the efflux is muddy. In the late stages of such a pyelitis the ureteral orifice is warped and contracted.

As the kidney, pelvis, and ureter are not much altered in the painless forms of hematuria dependent upon chronic granular nephritis, malignant tumor of the kidney, aseptic renal stone, and some of the cases of renal tuberculosis, the ureteral orifice in these affections does not show any constant or marked change. If the pelvis is dilated, the ureteral orifice is similarly enlarged and is elongated and furrowed or golf holed. The efflux is bloody, the amount of the blood depending altogether upon the severity of the renal bleeding.

In renal tuberculosis the appearance of the ureteral orifice varies. In the early stages of the malady, before the tuberculous foci have commenced to break down, and before the pelvis has become inflamed, there are no changes in the aspect of the ureteral orifice or in the efflux therefrom. With the breaking down of the caseous areas, however, the pelvis of the kidney becomes inflamed and dilated and the ureteral orifice correspondingly becomes elongated and furrowed or golf holed, and the discharge of the caseous material in the urine causes the efflux from the ureter to be cloudy. As the kidney pelvis becomes more and more involved in the tuberculous process, and as the softening and breaking down of the tuberculous tissue proceeds with the consequent discharge of pus and tubercle bacilli in the urine, the changes in the ureteral orifice become more and more marked and

characteristic. The mucous membrane surrounding the orifice becoms reddened and somewhat edematous, and on it a few sparsely scattered tubercles, and not infrequently one or more sharply cut, sloughing ulcers, are to be seen. The rest of the vesical mucosa may afford further evidences of the disease in the shape of red, extravasated areas with white necrotic flakes on them, or superficial erosions or worm-eaten ulcerations.

If the tuberculous pyelitis is very acute in its development, the ureteral orifice appears thickened, irregular, and choked or very edematous. In the late stages of the disease, when the pelvis and ureter are considerably thickened and ulcerated and the seat of marked tuberculous changes, the ureteral orifice and the corresponding part of the bladder wall are dragged out of their normal position and ulcerated, the opening is patulous and irregular and the efflux therefrom is a puriform trickle or pure pus. The rest of the vesical mucosa presnts ulcerations and extravasations.

These ureteral orificial changes are very characteristic and are the earliest positive evidences of renal tuberculosis. As Baumgarten and his pupils have almost conclusively shown that urinary tuberculosis is primary in the kidneys and descends from these organs to the other parts of the urinary tract, it is essential if we wish to radically cure our patients of this malady to detect its presence as soon as is possible and extirpate the affected organ.

As has been stated in another part of this paper, frequent and painful urination and inconstantly cloudy urine, and in some instances a painless hematuria are the very first indications of tuberculous disease of the kidney. Patients with these symptoms, and especially women in whom there is no gonorrhea, and no infection of the bladder from other causes such as instrumentation, trauma, etc., should be looked upon with great suspicion as being affected with renal tuberculosis, and should be repeatedly cystoscoped in order to detect the very first positive evidences of the disease in the changed appearance of the ureteral orifice. Repeated search for tubercle bacilli in the urine should also be made, several quarts of urine being sedimented or centrifuged for this purpose. Not only is the cystoscope of great value in these cases for making the diagnosis, but in the absence of kidney enlargement it is the only means we have for ascertaining which organ is the diseased one.

In renal stone the orificial appearances of the ureter are not at all characteristic. If the calculus is located in the kidney parenchyma or in its pelvis, and there is no pyelitis present, there is no change in the ureteral mouth. If there is a pyelitis with alkaline urine, the ureteral orifice looks congested and scalded, its lips are everted, and the whole trigonum is reddened and swollen, the efflux being cloudy and somewhat more forcible. When a calculus passes through the lower third of the ureter and nears the vesical end there may be punctate extravasations in the immediate neighborhood of the orifice and the corresponding side of the interureteric bar may be thick and swollen. As the stone approaches near the bladder the extravasations become more numerous, until finally the orifice and its immediate surroundings become uniformly red and appear to be bruised. Sometimes there is considerable edema. If the stone is arrested in the lower third of the ureter, the mucous membrane of the orifice is protruded and everted, sometimes roughened and again irregular. The efflux may be normal. If the stone is impacted in the vesical end of the ureter and protrudes into the bladder it is to be distinctly seen.

With renal neoplasm the ureteral orifice does not appear altered unless the pelvis is dilated, when the opening is furrowed and elongated or golf-holed.

In three cases of *ureteral stricture* I have not found any changes in the ureteral orifice.

The *character* of the *efflux* and the *peristaltic wave* character of the efflux and the peristaltic wave afford us valuable data as to the condition of the kidney. A too forcible or too frequently repeated efflux points to increased work on the part of the organ or irritation of the ureter, *e.g.* by a calculus or blood clot or plug or mucus and pus. A cloudy efflux points to pyelitis, a purulent trickle indicates a crippled, suppurating kidney, and a solid pus efflux means secretory death of the corresponding organ. A blood trickle points to a crippled kidney or to moderate hemorrhage with diminished secretion of urine by the affected organ, while a solid blood efflux denotes a profuse renal hemorrhage.

After a thorough study of the ureteral orifice and vesical mucosa, the writer is accustomed in every case of supposed renal disease to catheterize both ureters, introducing the catheters up to the renal pelvis. Some experts doubt the advisability of this latter procedure in suppurating conditions of the kidneys or bladder, on account of the danger of infecting the kidneys, but the writer is of the opinion that aseptic methods of technique and care in the introduction of the catheters will render such danger a very remote one; at all events, in his many cases no infection of the kidneys has been occasioned in this way.

The introduction of the catheter is of the utmost importance, for only in this way can we demonstrate the existence of a ureteral stricture, the symptoms of which resemble very much those which are occasioned by renal calculus or renal tuberculosis. Furthermore, it is the only means we have for determining the exact anatomical location of an impacted ureteral calculus, and lastly, but by far the most important of all, it enables us to draw the urine separately from each kidney and thus ascertain the health or disease of the latter and also its functionating capacity.

TURBINECTOMY.

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THE nasal chamber is divided into two parts by the septum, forming the right and left nasal cavity. The right chamber is naturally slightly larger than the left. On the outer side of each chamber are found the turbinated bones or bodies, three in number and in some cases four.

The inferior turbinated bone is the most developed and the most compact in structure and is the only one which is an independent bone. It varies in length from twenty-five to fifty millimeters and in breadth from five to fifteen millimeters. The turbinated bones divide each nasal cavity into three divisions or meatuses. The superior meatus communicates by means of a foramen with the posterior ethmoidal cells. The middle meatus, situated between the middle and inferior bones, communicates with the anterior ethmoidal cells and through the hiatus similunaris with the infundibulum, which communicates at its upper and anterior part with the frontal cells and at its lower and posterior part by the ostium maxillare with the antrum of Highmore. The orifice of the lacrymal duct is situated at the anterior part of the inferior meatus. In the nor-

mal nose these meatuses are well defined and large enough to serve their purpose, namely, of providing drainage. If these meatuses are impinged upon by some foreign growth, a bead, a bean, or a shoe button, there is a pressure and the character of the normal discharge is very much changed. The opening of the anterior and the posterior ethmoidal cells, the antrum and the lacrymal duct into each side of the nose, brings this organ prominently to the front as one of the chief drains or sewers of the body. A fact often lost track of on account of its other functions, namely those serving as a breathing channel and as the organ of smell.

A space should always exist in a normal nose between the turbinated bones and the septum. This space should be much larger between the inferior turbinated and the septum, than the space higher up. If this space is occluded by the inferior turbinated bone encroaching or impinging upon the septum, the case is one of hypertrophy of the turbinated body. The posterior portion of the inferior turbinated body is very rich in blood-vessels and in some cases, a hemorrhage from one of these vessels is liable to occur under moments of excitement. I had one patient, a man who would have a hemorrhage from his nose every time he cohabited. During study or in a sedentary life, these blood-vessels are apt to swell and produce complete stenosis of the nose, while if the nose is examined after a brisk walk, the normal lumen of the nasal cavity is restored. I saw this excellently illustrated in a medical student, who applied to me some years ago for stenosis of his nose. When he called at my office, I found the septoturbinated space large enough for nasal breathing. I tried each nostril separately and found that he could breathe freely through both the right and the left. He stated that after he had been confined to the house for a few hours, his nasal space would close and he would be compelled to breathe through his mouth. I tried every manner of procedure in this case, but the only remedy that gave him any relief was an operation on his inferior turbinated bone, and since then he has been entirely free from his old trouble of stenosis and bronchial attacks in the winter. I have found this hypertrophy of the turbinated bone more common in the cases in which the patient has led a sedentary life and in which the laws of nature in regard to fresh air in the bedroom have been neglected.

The discovery of cocaine by Koller did more for the specialty of the throat and nose than for any other branch of surgery, not only by its anesthetic effect on the mucous membrane, but also by its power of contracting the blood vessels and enabling the specialist to search every recess of this chamber. The discovery of the action of suprarenal extract on the mucous membrane, also helped, for this agent has the same effect on the blood-vessels as cocaine, namely the power of contracting, but not the anesthetic effect of the former.

The characteristics of a normal nose are, a straight septum dividing the nasal chamber into two cavities about equal in space, the right being a trifle the larger, a small space between each turbinated bone, or in other words the meatus well defined and a space between the turbinated bones and the septum large enough to act as a drain for the various sinuses that empty into this cavity, and to serve for the free ingress and egress of air to and from the lungs. If a two per cent. solution of cocaine be sprayed into the nostril and ten minutes allowed to elapse, the mucous membrane covering the turbinated bones will be found drawn tightly over them and a perfect skeleton of the anatomy is opened up to view. If the inferior turbinated bone now encroaches or presses upon the septum, we have a case of hypertrophy of the bone itself. This hypertrophy can be overcome by only one way, and that is an operation. The spray of an astringent solution will give a certain amount of relief to the patient, but when the medication has been suspended, the old symptoms will return. The cautery is useless and is apt to do great damage in these cases, in which the bone itself is enlarged. Its application will not reduce the bony enlargement, but in applying it the septum is liable to be touched at the same time and the result is an adhesion of the turbinate and the septum, producing a complete stenosis of the nostril. These are tedious cases to treat and will call into play all the time and ingenuity of the surgeon to correct the deformity. I have just finished operating upon a case of this nature, in which the patient had been operated upon seven times by different surgeons and then applied to me for treatment. He had complete stenosis of one nasal passage, produced by the uniting of the turbinate with the septum.

The snare is serviceable in cases of pedunculated growths such as polypi, enlargement of the middle or superior turbinated, or in the ragged enlargement of the inferior turbinated body, known as the grub worm appearance, but useless in hypertrophy of the inferior turbinated bone itself. The operation of removing the inferior turbinated bone is sometimes done by means of director and scissors with Carmalt Jones spokeshave or with Stipanitis chisel. If the director and scissors are used the director is first passed under the inferior turbinal, the probe end of the scissors slide along the director and the mucous membrane and the bone cut through. If the spokeshave is used, it should be passed along the inferior meatus and the ring knife fixed well behind the projecting posterior end of the inferior turbinal and then by a sharp pull made to cut its way forward through the bone. I have never used these methods as they seem to me too rough and unsurgical. Dr. Stipanitis removes the bone with a chisel. The chisel is applied to the anterior end, and with the aid of a mallet is made to cut its way through the bone and overlying tissue. In criticising these methods, I would be led to believe that a nose that was large enough in its interior to admit the passage of either a spokeshave or a chisel would be large enough for a patient to breathe through. I have operated upon cases in which the inferior turbinated bone was so jammed toward the septum and the nose so blocked up that I had difficulty in introducing even the smallest, thinnest probe in my possession, and after the operation was completed I had difficulty in removing the mass, that I had amputated on account of the part being so firmly packed in the nostril, even after it had been thoroughly severed.

I do not believe in complete turbinectomy; only so much of the bone should be removed as is necessary to restore the normal canal and to give back to nature the proper function of the nose. A complete turbinectomy is much easier than a partial turbinectomy. In the latter, judgment is required as to how much should be removed, the cut is longer, as it is through the center of the bone, and the parts need trimming. If the operation of partial turbinectomy as been properly performed, six weeks after the operation, an examination will fail to show any marks of a surgical procedure and

the only result patent is a normal nose and the proper amount of breathing space and a canal for drainage. The great objection to complete turbinectomy is that it makes the passage too large and removes something that belongs there and has a function to perform. Partial turbinectomy only restores the normal anatomy.

From a polypus or other growth or a deflected septum an enlarged turbinal may be diagnosed by the fact that it retains the general outline of the normal turbinated bone and in its locality. A polypus is generally attached to the middle turbinated bone and is markedly pedunculated; a deflected septum would have its origin from the center of the nose. A patient with this deformity may apply with any of the symptoms that are secondary to nasal stenosis.

If the patient is an actor or a singer, he will find his head tones very much impaired and will complain of attacks of bronchitis every winter, occurring generally about the same time. His voice will be heavy and muffled and the larynx prone to periods of hoarseness. All the symptoms of catarrh are present and possibly asthma, otitis, or at times hay fever, if the upper part of the nostril be at all involved. I have seen the hearing markedly benefited by an operation upon the inferior turbinate.

I had a case in which the patient came under my notice for asthma and after the operation of partial turbinectomy he turned to me one day and asked me if I had treated his ear. I asked him why, and he replied that the ear upon the side I had operated had been completely deaf, although he had had the ear treated for years without benefit, but after the operation he could hear his watch tick when held two feet from his ear. I had not even examined the ear, as the patient had never complained of it, but restoring the nasal passage brought back his hearing. I have seen this occur again and again in others, and to-day in a chosen case of deafness I always advise an operation upon the nose, if the same be indicated.

The nasopharynx should always be thoroughly examined before an operation upon the inferior turbinated bone. An obstruction here will give rise to an anterior stenosis, that will readily clear up, after the vault of the pharynx has been properly relieved of any obstruction that may occur in the locality, such as an adenoid, a posterior nasal polypus, or a fibroid tumor. A hypertrophy of the bone is seldom met with in children, although I have seen it and operated as early as the twelfth year.

Hemorrhages should always be considered in these cases and guarded against as much as possible, both before and after the operation. I will not perform this operation until the patient has been properly prepared and the mucous membrane relieved of all congestion and sign of any inflammatory condition corrected. Years ago I saw the cold snare used to remove only a small fragment of a hypertrophy placed and held in the patient's nose for hours, the loop being gradually shortened by turning the nut, to prevent any alarming hemorrhage. To-day I perform the operation, removing the redundant part of the obstruction and take only a few minutes in the procedure. I do this by preparing my patient for a week or ten days or even two weeks, if there is time, by giving two grains of quinine after each meal and ten grains at bedtime. With the ten grains at bedtime I give twenty grains of potassium bromide in solution. The medicine properly given will reduce the chance of a hemorrhage to a minimum. When the patient first applies for treatment, the turbinated will be found a dark red in color, very much swollen and the canal much narrowed by the swollen membrane encroaching on its lumen. An examination of the anatomy after a week's treatment with quinine and the bromides as directed above, will show the membrane much reduced in size and of a much healthier color. The landmarks of this region can now be distinctly seen. If the nose be still occluded another week's treatment is administered. "*Festina lente*" is a good adage in preparing these patients for the saw. To operate before the patient is properly prepared means a heavy plugging after the operation and the retention of the plug for a period longer than would otherwise be necessary. Then drugs will have very little if any effect on a case of a hemorrhagic diathesis.

These cases are few and far between, and can only be guarded against by going into the history and asking pointed questions before the operation has been commenced. If the mucous membrane fails to cling closely to the turbinated after a two week's treatment with the quinine and the bromides, look for some cause.

One patient who came under my care years ago had the membrane of the nose very much swollen and anemic in color and easily pitted with the probe. An examination of the urine showed a large quantity of albumen. This lasted for six months, when it disappeared and the patient has been free from it ever since. Since that time I have suspected Bright's disease by a nasal examination, and had my suspicion confirmed by an examination of the urine.

Have the mucous membrane as free from inflammation as possible, and the time spent in the purpose draws interest, either during or after the operation of turbinectomy. The local use of cocaine has made the operation perfectly painless; in fact it is as painless as cutting the nails with the scissors, if the cocaine has been applied properly. I first spray into the cavity upon which I am to operate a two per cent. solution of cocaine. I then apply by a probe a twenty per cent. solution of the same drug and allow it to remain on the membrane for about ten or fifteen minutes. This is about the proper time to obtain complete anesthesia in these cases. During this time I may have changed the probe once or twice or even three times, carrying the cocaine well back to the pharynx and well under the growth. I define pain and pressure to my patient. Pain I show him by touching his skin with my nail; pressure I explain by touching his hand and pressing on it with my finger. When the membrane to be cut fails to give any pain, or the scratching of the probe, it is ready for operation. I formerly used the suprerenal capsule or one of its preparations as a spray. It permitted an almost bloodless operation, but the patients were nearly certain to have a secondary hemorrhage after they had left my office. I found that I was often compelled to replug, and the hemorrhage coming on after the patient had left gave rise to fright and alarm on the part of the patient and of his friends, so that in the last few years I have abandoned the use of this drug entirely during operations on the nose. I prefer to see blood follow my knife, so that I can tell how much of a hemorrhage I have under consideration. The instruments that are necessary for a partial turbinectomy are a thin straight saw, one a little heavier than is used in septum work, a pair of strong forceps with a narrow short beak, a nasal snare, and a thin pair of scissors. The blade

or cutting part of the saw should be at least two inches in length. The turbinated bone may be slightly pedunculated or it may have a broad attachment. If the bone be pedunculated the saw is carried under the growth and the cut made from the back forward. After the back part of the growth has been severed, the sawing is done from the back to the front part of the turbinated bone. The sawing is done from below upwards; by using this method, the blood gravitates to the bottom and the part operated upon can be distinctly seen. By cutting from the back forwards there is no reason why the knife should come in contact with the septum, as wounding the part is liable to produce an adhesion later on, especially if the upper part of the wound impinges on the septum. Sometimes the cut part of the turbinated bone can be brought out with the saw after its last cut through the membrane. Blood will now flow freely from the front of the nose and possibly a little may find its way down the back pharynx. I have the patient bend his head over a cuspidor and allow the blood to flow until it shows some sign of diminishing. I now advise the patient to blow his nose to clear it as much as possible. The cut piece generally falls to the lower part of the canal, where it can be seized by a strong pair of forceps and removed. An examination will in some cases show the upper part of the wound too near to the septum; this can be either trimmed off by the snare or a fine pair of scissors. An examination of the nose now will show the turbinate septum space clear and that patency we sought to obtain is provided. Blood may at times ooze through the eye, finding its way there from the lacrymal duct and backing upward, the lacrymal duct opening into the inferior meatus, as I have before stated. The hemorrhage during this operation may be severe, but in the majority of cases not alarming. I now introduce my anterior plugging. I use a piece of absorbent or the plain antiseptic cotton, about six inches in length, the cotton running the length of its fiber. The end I double over slightly and compress it lightly together and mould it before I begin to introduce it into the nose by means of a thin pair of forceps. After I have placed it into the nostril to the space of about an inch, I introduce a smaller piece of cotton to act as a wedge, and I carry this well back to the pharynx, using all the cotton in the plugging.

The hemorrhage has ceased by this time. I examine the pharynx, by the use of the spatula to see if there is any postnasal hemorrhage. I now give the patient in my office ten grains of quinine and twenty grains of potassium bromide and direct him to go home and go to bed and take every three hours a pill containing two and a-half grains each of acetphenetidin and phenyl salicylate. I place him on a light diet of milk or soup and direct him to see me the next morning to remove the plug. A cloth wet with alcohol applied to the forehead after he reaches home is a good expedient. I am very seldom called upon on account of a secondary hemorrhage since I stopped the use of adrenalin, if the anterior plugging has been properly introduced. A posterior plugging of the pharynx is seldom necessary; in fact I do not recall five cases in which I was compelled to resort to this measure.

Upon the morrow when the patient presents himself for examination I begin to remove the plugging. I first draw out one to two inches of the string of cotton; this I cut off with a pair of scissors. If the blood flows freely, I wait a few moments. If the hemorrhage shows signs of lessening, I remove all the plugging. If the cotton is of a bright red color, showing that bleeding is still taking place, I allow it to remain until the following day. After the plug has been removed in its entirety I keep the patient in bed for the remainder of the day. The internal treatment of the quinine and the potassium bromide I continue for two or more weeks after the operation. Two days after the plug has been removed, I clean out the nasal chamber, either with a postnasal syringe or a spray, and direct the patient to let the nose alone as much as possible. Large crusts will collect in the nose, some as large as two inches in length; these will gradually lessen, and when the part has completely healed, which is usually in about six weeks, all crusts will have stopped forming and the normal secretions of the nose are reestablished.

If fresh air could be bottled up, sold at a drug store, and the patient advised to take a teaspoonful every hour, the sale would be enormous and the result most surpassing. The reestablished nasal breathing means a better nutrition, a better supply of oxygen. I have seen patients gain ten, twenty, and even eighty pounds within six months after the operation.

Patient A., female, aged twenty-eight, applied, complaining of asthma, which had developed four years previously. The asthma had been constant for three months, when it diminished, only to reoccur. When she applied for treatment the asthma had been almost daily. An examination of her nose showed the lumen of the turbinated septal space much lessened by the encroachment of the inferior turbinated bone. I advised an operation. Two months after the operation on both her turbinated bones her asthma stopped and she has now gone over two years without any serious attack. I have watched these patients for years after the operation of partial turbinectomy and have never seen any dryness of the pharynx or any condition like an atrophic rhinitis follow.

In treating nasal diseases, I deem it of the greatest importance that there should be in a nose an inferior meatus, unoccupied by foreign growths and capable of performing its function, namely of acting as a drain to the cavity and as a transmitter of air to the lungs. I consider this meatus of so much importance in the economy of the nose, as a drain, that when it is blocked, the secretions dam up the nostril and this state is a salient cause for the reappearance and recurrence of polypi and many headaches that we are called upon to treat. If polypi persist in recurring and the meatus and space are obstructed I operate to restore the space. I have seen a case of antrum disease cured by reestablishing this drain, after syringing through the alveolus process after the removal of a tooth had failed.

Where it has been found that the Politzer air bag or the catheter has given relief to a case of deafness, this operation has shown improvement beyond dispute. If I were to summon up all the various operations that are resorted to in order to correct a nasal obstruction, the one that will give the most permanent relief I would without hesitancy name partial turbinectomy.

I have operated so far on over ten thousand cases, and have still to see one in which the result was not most gratifying and the aim of the operation secured,—perfect nasal breathing and a drain for the nose and all the sinuses that empty into that most important canal, the nostril.

112 West Forty-fifth Street.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, April 14, 1906.

THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.

THE evolution of this service from a medical bureau in the Treasury Department, organized for the purpose of caring for the sick and injured sailors of the merchant marine, to what is practically the quarantine and public health department of the National Government offers an example of what can be done by hard work and conscientious fulfillment of duty. The surgeons of the service might, without an efficient executive head, have remained to this day what they were intended to be originally—simple hospital internes. How much more they are than this is made manifest in the thirty-fourth annual report, just received, of Surgeon-General Wyman to the Secretary of the Treasury.

That the original purpose of the Marine-Hospital Service is not neglected, in the multiplicity of other duties assumed by the personnel, is shown by the fact that medical relief was given to 57,013 seamen, 14,661 of whom were treated in the hospitals and 42,352 as out-patients. There are twenty-one hospitals officered by the surgeons of the service, and 120 other relief stations where seamen receive hospital and dispensary treatment; there is also a tuberculosis sanatorium at Fort Stanton, N. M., where 385 patients were cared for during the year. One hospital has just been completed at Savannah, Ga., and the plans for two others, at Buffalo, N. Y., and Pittsburg, Pa., are now in course of preparation. In addition to the medical relief work, upwards of 5,000 physical examinations were made of seamen and of candidates for employment in various services, such as the Revenue-Cutter, Light-House, Life-Saving, Philippine Islands, Isthmian Canal, etc. During the year 1,026,499 aliens were inspected by officers of the Service to determine their physical fitness for entry into the country. The work of the Hygienic Laboratory has been of the greatest importance, and its development during the past year has been notable. As now organized, the laboratory is prepared to investigate all public health problems from the standpoints of pathology, bacteriology, zoology, pharmacology, and chemistry. The scientists connected therewith have established a diphtheria antitoxin unit which is now the standard for this country; a specimen of every make of vaccine virus in the market is examined once a month for potency and purity, the result of which has been a marked improvement in the quality of this important prophylactic. The division of zoology has investigated the spotted fever of Bitter Root Valley, in Montana, and has studied ankylostomiasis in this country and, in collaboration with the Army Medical Department, in Porto Rico; it has also investigated the reported prevalence of the dwarf tapeworm (*Hymenolepis nana*). The division of pharmacology has made numerous experiments with the nitrites, alcohol, and a new quinine derivative, has analyzed all the drugs and chemicals purchased by the purveying bureau, and has made certain experiments on the pharmacological action of sulphur compounds, on the functions of the thyroid gland, and on the relation of carbohydrates to acetone intoxication and the cause of diabetes. In the division of pathology and bacteriology many important subjects were investigated. The division of chemistry was organized in June of last year and the workrooms are now being equipped to carry on this part of the work. The administration of national quarantine has been continued in Porto Rico, Hawaii, and the Philippines, and medical officers of the service are stationed at a number of Cuban, Central and South American ports, in the offices of the American Consulates in certain ports of Japan, China, and India, and in Naples. At the request of the authorities of several of the maritime States, their quarantine service has been taken over by the officials of the Public Health and Marine-Hospital Service. The excellent work in repression of the yellow-fever epidemic at New Orleans, done by Surgeon White and others of the service, is too fresh in the memory of all to call for detailed reference.

Space forbids further consideration of the great work of safeguarding the health of the country accomplished by Dr. Wyman and the trained corps of scientists constituting the Public Health and Marine-Hospital Service, but what has already been done suggests almost unlimited possibilities for the future. The act just passed by Congress, placing the service in charge of any future yellow-fever epidemics in the South, might well be amplified so as to raise the service from the subordinate position of a bureau of the Treasury Department to an independent Department of Public Health. If the supervision of proprietary medicines, recently assumed by the irresponsible Council on Pharmacy and Chemistry of the *Journal of the American Medical Association*, were entrusted to the division of pharmacology of the Public Health Service, it would at once command the respect of the entire medical profession of the country, for the suspicion of partiality which now blights the work would be removed.

This brief review of the work of the Marine-Hospital Service should be of special interest to the young men who are now being graduated from the medical colleges of the country and must soon decide what career within their chosen calling they will adopt. The service offers at this time unusual opportunities for the young physician whose ambition it is to do something more in the world than merely treat the sick—high and noble as such a career is. The highest and noblest of callings is undoubtedly that of the family physician—higher, even from the viewpoint of the man of earnest religious convictions, than that of the clergyman—but all cannot adopt the counsels of perfection. The pure scientist is needed in the world, as well as the minister to human suffering, and to the young medical man whose bent is in this direction the Public Health and

Marine-Hospital Service offers unusual advantages, its work embodying all forms of medical activity, from the practical therapeutics of the marine hospitals to the pure science of the laboratories. It also offers the opportunity of foreign travel in the West Indies, Asia, and Europe, including our own possessions, as well as that of an acquaintance with all parts of our own country, from Maine to California and from the Gulf of Mexico to the Great Lakes. Last, but not least in this practical world, admission to the service assures a comfortable living. The assistant surgeon, from the day of his appointment, receives a salary of $1,600 per annum, and after five years, if he has done good work enabling him to pass the examination for promotion to the grade of passed assistant surgeon, his pay is $2,000. From this time on promotions are made to higher grades, as vacancies occur, the salary increasing with the rank, up to $5,000; but independently of this increase of rank, all officers receive a 10 per cent. increase of pay with each five years of service. In addition to this, the officers are provided with comfortable quarters, or, when this fails, they are allowed commutation ranging from $30 to $90 per month, according to rank and station. The Marine-Hospital surgeon has an advantage over his colleagues in the Navy, in that he may marry with a reasonable assurance that his home will not be broken up by assignments to distant stations. Of course, he may be sent abroad or transferred to some other part of the country, but such assignments are usually for long periods, and he can therefore take his family with him; he receives a liberal allowance for traveling expenses, which he can make, with economy, cover much of the expense of transportation of his family and household effects. The recent graduate, to whom the work of the Marine-Hospital Service, as we have here outlined it, is attractive, will do well to secure this report of Surgeon-General Wyman and study it in order to learn more fully what his duties in the service would be, that he may decide, in the beginning of his career, whether or not he will take it up for his life work. He might do much worse, and yet, unless the work there outlined appeals to him strongly, he had better turn his attention to pure practice either in general medicine or in some specialty.

A NEW VIEW IN REGARD TO INFLAMMATION.

Teachers of pathology nowadays are usually at considerable pains to impress their pupils with a realization of what has been aptly termed the conservatism of inflammatory processes. The student is encouraged to believe that inflammatory changes do not of themselves constitute a primary state of disease, but rather that they are the consequence of an insult of one sort or another to the bodily machine and represent the effort of the organism to minimize the effects of the injury. While the sufferer from, say a furuncle, very naturally regards the local evidences of the disorder which are evident to his senses in the classical syndrome of pain, swelling, redness, and heat, as his chief cause of grievance against an unkind fate, the more perspicacious gaze of the pathologist views these manifestations as so many indices that the body is marshaling its resources in order to put to rout a horde of invading bacteria ensconced in some hair follicle or similar recess. In brief, to use the words of a well-known writer, inflammation is regarded as the local attempt at the repair of injury, and, though it may sometimes overshoot the mark and produce undesirable consequences, its purpose is on the whole beneficent and tends toward the welfare of the individual. That this point of view is a novel one, to the public at least, is shown by the astonishment evinced in the comments of the lay press on a recent address delivered by Sir Frederick Treves, in which the speaker dwelt upon the value of peritoneal or pleural adhesions, effusions in inflamed joints, etc., as means of facilitating the process of repair.

The principle involved in this view is a broad one and accords well with the demonstrations of morbid histology as well as theories of immunity, cytolysis, etc. A recent writer, however, Spiess (*Münchener medizinische Wochenschrift,* February 20, 1906), presents some suggestions on the subject of inflammation in which these beneficent attributes of the several phenomena involved receive scant courtesy. Starting with the clinical observation that in cases of operation on the nose or throat in which all pain both in the course of the procedure and during the period of healing was suppressed by the very free use of local anesthetics, no inflammatory reaction was noted, Spiess suggests that all manifestations of this nature are evoked purely by centripetal stimuli emanating from the point of injury, and if these are abolished no reaction can follow. In support of this belief he refers to the well-known immunity to inflammatory processes exhibited by patients with hysteria or anesthesia due to mental disorders. Laparotomy wounds in the insane heal without complications even though contaminated by the filthy hands of the patient; the Hindoo fakirs can perform their self-mutilations with impunity, and a patient of the author's with hysterical anesthesia could plunge the hand into boiling water without giving rise to the ordinary accompaniments of a burn if the act was performed during an access of anesthesia. If sensation had begun to return a scald was produced. Experiments on anesthetized animals led the author to the same conclusion; that is, that inflammation does not follow if it is possible to cut off all centripetal impulses from an injured part, and that already existing inflammations are caused to subside rapidly through anesthetization of the inflammatory focus. The method of anesthesia must affect only the sensory nerves, however, and should not interfere with the ordinary vasomotor mechanism. The success of Bier's method of treatment by hyperemia is attributed by the author solely to the relief of pain that is secured by the procedure.

POLLUTION OF THE TIDAL WATERS OF NEW YORK.

A movement has recently been inaugurated by a number of sanitarians and public-spirited citizens of this city to devise means for preventing the pollution of the waters of New York Bay and its estuaries. Up to the present time no concerted action has been taken for guarding these waters against pollution.

It is true that the emptying of garbage and other solid refuse within the harbor is restricted by the United States Government, but the object here is only to insure a proper depth of water for navigation.

The idea of establishing a Metropolitan Sewerage Commission is the outcome of preliminary investigations which have been carried on during the last three years by the New York Bay Pollution Commission. This commission has found that the upper bay and neighboring waters bear evidence of being seriously contaminated by sewage and that in some localities the pollution is so great as to give rise to an actual nuisance. Examples of such conditions are the Harlem River, Kill van Kull, mouth of the Bronx River, Newtown Creek, and Passaic River near Newark. The odors which arise from Gowanus Canal, in Brooklyn, are so offensive that extensive works are about to be constructed to purify this arm of the bay.

At the present time about 455,000,000 gallons of sewage are emptied into the tidal waters within a radius of twenty miles of the New York City Hall every day. The solid matter so contained is equivalent to over 1,500 tons of dry sludge, about one-half of which is decomposable organic matter. It is estimated that by the year 1930 there will probably be not less than 10,000,000 inhabitants in the metropolitan district, and with this increase in population will come a corresponding increase in the pollution of the tidal waters.

The desirability of keeping the waters of New York and vicinity in the purest condition practicable is made evident by a consideration of the peculiar situation of the city and the many uses to which these tidal waters are put. The number of passengers transported across the waters of the New York district in 1905 was nearly 200,000,000. The free floating baths maintained by the city along the water front are patronized by over 3,500,000 bathers every year. Floating hospitals carry 35,000 persons and give thousands of baths with water from the bay for the benefit of the sick every summer. Great numbers of people who live in the densely crowded sections of the city frequent at night the recreation piers along the water front; the number of visitors to one of these piers alone has been known to exceed 8,000 in a single evening. It is estimated that at least a million bushels of oysters are gathered annually from the tidal waters within a radius of twenty miles of the New York City Hall; the relation of typhoid fever to infected shellfish is now so well established that the oyster industry may eventually, and should be, driven from this vicinity if further pollution is not prevented.

In order to provide for the protection of the bay, it is proposed that a Metropolitan Sewerage Commission be appointed by the Governor. This Commission will be authorized to confer with a similar Commission from New Jersey, to the end that the two States may cooperate in bringing about the protective measures required. A bill providing for such a Commission has been drafted and has been endorsed by the Chamber of Commerce of the State of New York, the Merchants' Association, the Maritime Association, the Board of Trade and Transportation, and the Produce Exchange. The bill should also receive the endorsement of the New York Academy of Medicine and other representative medical societies of the five boroughs, and we are sure the physicians of Jersey City and Newark will take similar action in relation to a cooperative bill to be brought before the New Jersey Legislature.

Can the Cerebral Cortex be Stimulated Chemically?

It has been claimed that the application of certain substances—creatin, urinary sediments, etc.—directly to the surface of the brain may produce muscular contractions, and this fact has been employed as an explanation of eclampsia and similar states. S. S. Maxwell, in a recent communication (University of California Publications, Vol. 3, No. 3), claims that these experiments are open to objection as evidence of chemical stimulation of the cortex because a relatively long interval elapsed between the application of the chemicals and the production of the contractions, affording sufficient time for an osmotic action to take place by the abstraction of water from the tissues, and thus, by diffusion, permitting the dissolved substances to act upon the underlying white matter of the corona radiata instead of upon the cortex. The materials employed were also unsuitable for the purpose, as they did not belong to the class of substances now known as nerve stimulants. Maxwell made a series of experiments with substances whose anions precipitate calcium, as Loeb had shown that chemical stimulation was best accomplished by these, namely, the soluble citrates, oxalates, fluorides, oleates, etc. It was found, however, that no chemical stimulation of the cortex was obtained, but that a reaction was promptly elicited when the solutions were injected so deeply as to act directly upon the white matter. The response, in contrast to what had occurred in previous experiments, was almost instantaneous, and the movements were as definitely localized as in the case of electrical stimulation. The absence of irritability of the cortex to mechanical stimulation is well known through clinical and surgical experiences, and these observations show that the gray matter, or at least its outer portion, is equally insensitive to chemical stimulation. The question may now be raised whether electrical stimulation really occurs or whether the cortex is entirely devoid of irritability, for Loeb has claimed that that electrical stimulation acts through changes in the concentration of the ions, possibly the calcium precipitates, and hence is apparently of the same nature as chemical stimulation by the latter. The spreading of the lines of force, however, make it impossible to determine whether the excitation by the electrical current has occurred in the cortex or the underlying gray matter. Further researches on this topic are promised by the writer.

News of the Week.

Plans for a Filtration Plant.—The city water commissioner has submitted to the mayor preliminary details of a plan to build a filtration plant in conjunction with the Jerome Park reservoir. The plan is intended as an alternative one to that proposed by the Burr-Hering-Freeman commission. This body suggested the taking of a site two or three miles southeast of Tarrytown. It was estimated that a 250,000,000 gallon plant in this locality would cost $8,500,000 and that a 500,000,000 gallon plant would cost $15,000,000. According to the present proposal there is no

need for the purchase of new land, as part of the land bought by the city for the Jerome Park reservoir can be utilized. It is also stated that this plan would save much time and cost, and that the danger of contamination of filtered water during the passage from the more distant beds would be avoided. The project has been submitted to the Board of Estimate.

To End Shotgun Quarantines.—The House of Representatives on April 3 by a vote of 202 to 26 passed the National Quarantine bill which was slightly modified from the form in which it was passed by the Senate on the day before. The bill places the control of all quarantine stations, grounds, and anchorages under the Secretary of the Treasury, and directs that as soon as practicable after the approval of the act he shall select and designate such suitable places for them and establish the same at such points on or near the seacoast of the United States on the Mexican border as in his judgment are best suited for the same, in order to prevent the introduction of yellow fever into the United States. The bill further gives the Secretary of the Treasury the right to establish a quarantine station at the Dry Tortugas Islands, and at such other points at or near the seacoast (not to exceed four in the aggregate) as he deems necessary. The bill also provides that every common carrier engaged in inter-State commerce shall receive and carry through any State or Territory passengers, freight, and baggage which may have been discharged and properly certified in accordance with the regulations of the Public Health and Marine Hospital Service, and every person interfering with or obstructing such carrier or any passenger or any instrumentality of commerce in any such carriage or journey shall be guilty of a misdemeanor, and on conviction be punished by a fine not exceeding $300, or be imprisoned for a period not exceeding one year, or both, in the discretion of the court. The passage of the measure was bitterly opposed by the representatives of some of the Southern States on the ground that it interfered with State rights.

To Raise the Standard of Immigrants.—The House Committee on Immigration and Naturalization has agreed to a favorable report on the Gardner immigration bill. The measure raises the head tax from $2 to $5, and provides an educational test for immigrants, requiring every person above the age of sixteen years admitted to the United States to be able to read some language. It requires that every adult male immigrant shall have at least $25 in money at the time of landing and every female adult immigrant at least $15, but heads of families may be admitted with their entire families provided they have $50. It places in the excluded class imbeciles, the weak-minded, and manual laborers of poor physique, and gives the Department of Commerce and Labor discretion to admit or exclude immigrants under sixteen years of age coming to this country alone.

United States Civil Service Examinations.—The United States Civil Service Commission announces an examination on June 6 and 7, 1906, to secure eligibles from which to make certification to fill at least two vacancies, at $600 per annum each, with maintenance, in the position of medical interne, Government Hospital for the Insane, Washington, D. C., and vacancies as they may occur in any branch of the service requiring similar qualifications. The Department states that it reserves the right to continue or terminate appointment at the end of one year, or to promote the appointee at the expiration of that length of service. This examination is open to all citizens of the United States who are over twenty years of age, are graduates of reputable medical colleges, and comply with the requirements. Applicants should at once apply to the United States Civil Service Commission, Washington, D. C., for application form 1312.

The Sixteenth International Medical Congress.—The Hungarian government has authorized the Hungarian delegates to the Fifteenth International Medical Congress at Lisbon to extend an invitation to hold the Sixteenth Congress in 1909, in Budapest. The Hungarian government has allowed a sum of $25,000 for covering the expenses, and the same sum has been voted by the General Assembly of the city of Budapest. The invitation will be transmitted by the president of the Hungarian committee, Mr. L. de Toth, Counsellor in the Ministry of Education.

Institute for Tuberculosis Incorporated.—The Chicago Tuberculosis Institute was recently incorporated by Drs. Edward B. Bicknell, Arnold C. Klebs, and Henry B. Favill. It is the intention of the organization to establish a free dispensary, to collect statistics, and carry on an active educational campaign. Dr. Henry B. Favill has been elected Chairman of the Board of Trustees.

Gift to Newberry Library by Dr. Senn.—The working library of Professor Meissner on internal medicine, and a botanical library of three hundred or more volumes, consisting mainly of old and classical works on herbs, have been donated to the Newberry Library, Chicago, by Dr. Nicholas Senn.

Physicians Oppose Contract Work.—Physicians of Racine (Wisconsin) have pledged themselves not to take any more contract work, insurance, lodge, or otherwise, during this year. The opposition raised by certain lodges, factories, and insurance companies has now subsided, the local press having made it clear to the public that the people will be the gainers by doing away with medical contracts.

Dr. Henry Leffmann has been appointed a member of the Philadelphia Board of Health in succession to Dr. Charles B. Penrose resigned.

A Smallpox Patient was discovered in the Jersey City Hospital last week, and in consequence all the inmates of the institution were vaccinated.

Typhoid Fever in Pittsburg.—The epidemic of typhoid fever in Pittsburg has assumed very alarming proportions. Several hundred cases have already been reported, 56 having been discovered in one day. The outbreak is attributed to the swollen condition of the local rivers and it is expected that the situation will be difficult to control until the floods subside.

Health Conditions in the Canal Zone.—The effectiveness of the sanitary régime on the Isthmus is shown by the fact that in spite of the existence of yellow fever in neighboring ports on both the Caribbean and Pacific sides there are no cases of the disease along the canal route. The health report for February submitted by Col. Gorgas shows a sick rate of 20 for each 1,000 of the 23,000 canal employees. There were 56 deaths among canal employees, and of these 49 were negroes. The death rate among employees shows an annual rate of 30 to each 1,000 persons. The death rate among non-employees was 42 per 1,000.

Pneumonia and malarial fever were the chief causes of death.

A Bequest to St. Luke's Hospital.—St. Luke's Hospital in this city receives $15,000 by the will of Mrs. Sarah A. Sands who died at Lakewood, N. J., on March 30. Three beds are to be endowed in memory of the testator's husband, Abraham B. Sands.

A Peculiar Skin Affection.—Travelers to the Orient are not infrequently discommoded by a form of dermatitis ascribed to contact with freshly lacquered objects. From Cambridge, Mass., comes a description of an apparently somewhat similar affection occurring among the workmen in a local furniture factory. The men were at work on a large quantity of a peculiar wood termed tonquin, which had been imported from the Philippines. Those who inhaled the dust or handled the wood suffered from asthmatic attacks and an irritating rash on the exposed surfaces of the body. Twenty-eight employees were affected.

Jefferson Medical College.—Dr. Edward Anthony Spitzka who for two years has been a demonstrator of anatomy at the College of Physicians and Surgeons in this city, has been elected professor of general anatomy, and Dr. George McClellan professor of applied anatomy at the Jefferson Medical College, Philadelphia.

To Incorporate Institutions for the Relief of the Blind.—Two organizations are seeking articles of incorporation from the State Board of Charities in order to found a society for the relief of the crippled and the blind. They are the New York State Association for the Promotion of the Interests of the Blind and the Crippled Children's East Side Free School. It is stated that there are 865 blind persons in Manhattan and the Bronx, of whom 460 have expressed a desire to enter such an institution as it is proposed to establish.

Dr. J. H. White of the Public Health and Marine Hospital Service has been presented with a silver service by a large number of the citizens of New Orleans in recognition of his services to the city during the recent yellow fever epidemic.

Dr. Francis J. Quinlan of this city has received the Lætare Medal for this year of Notre Dame University of Indiana.

A New Montana Society.—A Tri-County Medical Association representing the counties of Custer, Rosebud, and Dawson, was formed at Miles City on March 18. The officers are as follows: *President,* Dr. Andrus; *Vice-President,* Dr. Hathaway; *Secretary and Treasurer,* Dr. Huene.

Iowa Tuberculosis Sanatorium.—The Iowa House of Representatives has passed a bill appropriating $50,000 for the establishment of a tuberculosis sanatorium, the site to be decided on later.

Oklahoma University.—The medical school of this university was admitted to membership in the American Association of Medical Colleges at the meeting recently held in Pittsburg.

Commencement Exercises.—At the graduation exercises of the Dartmouth Medical School held on March 31, the degree of M.D. was conferred upon ten candidates. The Atlanta College of Physicians and Surgeons at its fifty-second annual commencement on April 2 graduated a class of fifty-two, and the newly-organized Atlanta School of Medicine on April 3 conferred its degree on its first class, consisting of twenty-one students. The graduating class of the Medical Department of the University of Nashville, that held its commencement exercises on March 28 numbered forty-two.

Railway Transportation of the Sick in Germany.—The Prussian Minister of Railways has issued an edict concerning the transportation of the sick on railroad trains. Suitable stretchers are to be provided on which the patient may be carried without any transferring from his house to the train, and from the latter to his ultimate destination. The stretchers may be introduced only into third-class compartments. Two third-class fares are to be paid for the patient and stretcher, and one third-class fare for the attendant.

In Honor of Professor Nitze.—In order to commemorate the death of Dr. Max Nitze, the inventor of the cystoscope, which occurred on February 22, a memorial service attended by his friends and pupils was held in Berlin on April 1. An exposition has also been held to show the development of cystoscopy, making use of the material collected by Nitze.

The Prophylaxis of Venereal Diseases.—The German Society for the Prevention of Venereal Diseases has in the past two years distributed over a million copies of its circulars of warning and instruction. This has been effected through officials of various sorts, physicians, the dispensaries, sick lodges, and in the army, so that young men of all classes have been reached. It is now proposed to issue a second circular intended for the counsel of young women, working girls, servant maids, salesgirls, etc., who, through ignorance, are exposed to danger from this direction.

Waukegan (Illinois) Medical Association Organized.—At a meeting, held March 12, physicians and dentists of Waukegan and North Chicago organized an association with this name. The following officers were elected: *President,* Dr. Edward F. Gavin; *Vice-President,* Dr. Jacob F. Roemer; *Secretary,* Dr. Beatrice Pierce; *Treasurer,* Dr. Wm. S. Bellows, all of Waukegan, and *Executive Committee,* Drs. L. H. Tombaugh and Chas. E. Daniels, Waukegan, and Dr. Fuller, North Chicago.

Obituary Notes.—Dr. Andrew B. Stevens of Watertown, N. Y., died on April 7, at the age of sixty-six years. He was a veteran of the Civil War.

Dr. J. D. MacCallum of San Francisco died on April 6 at the age of thirty years after an illness due to nephritis extending over a period of three years. Dr. MacCallum was assistant to Dr. Jacques Loeb in the department of physiology of the University of California, and had left unfinished several important pieces of research which some of his colleagues expect to complete and publish.

Dr. J. A. Cronin of Boston, Mass., died on April 2, after a long illness. He was a graduate of the Bellevue Hospital Medical School.

Dr. A. J. Weathered of Waco, Tex., died suddenly in his office on March 27 at the age of fifty-four years. Dr. Weathered had practised in Osceola, Tex., for some years and came to Waco fourteen years ago.

Dr. Joseph Byron Kingsbury of Brocton, Mass., died on March 24 at the age of seventy-one years. Dr. Kingsbury was born at Braintree, Vt., and was a graduate of Dartmouth College and Medical School. He had practised in Braintree for thirty-two years, and during this time occupied many public positions.

Dr. A. C. M. Moir of Newton, Mass., died on March 29, at the age of thirty-one years. He had previously practised in Waban, Mass., removing to Newton in 1900.

Dr. W. H. K. King of Carthage, Mo., died on

March 22, at the age of sixty-two years. He was born in Pittsburg, Pa., and was graduated from Rush Medical College in Chicago.

Dr. A. S. Elwood of Denver, Col., died on March 31 at the age of seventy-nine years. Dr. Elwood enlisted in the 40th Iowa infantry in August, 1862, and was commissioned as assistant surgeon on the regimental staff, serving in that capacity until mustered out because of disability a year later.

Dr. Eugene J. B. DuGas of Roseburg, Ore., died on March 27, at the age of fifty-nine years, after a long illness from a gastric affection. Dr. DuGas was born in Augusta, Ga., and after graduating in medicine served in a professional capacity in the Confederate Army, enlisting with his father who was also a surgeon. Shortly after the close of the war Dr. DuGas moved to Oregon, and settled in Roseburg fourteen years ago.

Dr. Michael P. O'Neill died at Philadelphia of typhoid fever complicated by pneumonia on April 3 at the age of thirty years. He was graduated from the Medico-Chirurgical Hospital in the class of 1900. He was for several years Chief Resident Physician in St. Agnes Hospital and at the time of his death was a member of the visiting staff of the Hospital. He was also on the surgical staff of the Medico-Chirurgical Hospital.

Dr. Edwin G. Hawkes died at Philadelphia on April 6 at the age of forty years. He was graduated from Jefferson Medical College in the class of 1892.

Dr. Jefferson D. Christman died at Allentown, Pa., on March 30 at the age of fifty years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1876.

Correspondence.

THIRD ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(From Our Special Correspondent.)

ADDRESS OF WELCOME—SCARCITY OF MEDICAL PRACTITIONERS—THE CHOLERA—THE HEALTH AUTHORITIES OF THE ISLANDS—PRESIDENTIAL ADDRESS ON THE PROGRESS OF MEDICINE IN THE PHILIPPINES—ST. PAUL'S HOSPITAL, MANILA—THE LEPER COLONY—ADVANCES IN TROPICAL MEDICINE.

Manila, P. I., February 28, 1906.

The third annual meeting of the Philippine Islands Medical Association was begun this afternoon under most favorable auspices, at the library of the Bureau of Science, on Calle Herran. The House of Delegates met at 3 P. M., and a committee was appointed for the purpose of making recommendation as to whether it would be better to publish the proceedings of the association in the *Philippine Journal of Science*, or whether it could afford to make a separate publication of this matter. A committee on nominations was appointed for the purpose of selecting the names of persons to be submitted to the House of Delegates at its next session, for consideration in connection with the appointment of officers for the ensuing year. The patent and proprietary medicine evil, and the advisability of recommending legislation for the preventing of the refilling of prescriptions, and to make it an offense to sell impure or adulterated drugs was informally discussed. After the transaction of some other routine business the House of Delegates adjourned.

At 4 P. M. the first general meeting of the association was called to order by the president, Dr. Victor G. Heiser, after which the Reverend Bishop Charles H. Brent offered a prayer. The Governor-General then followed with some opening remarks, which were delivered in a particularly happy strain. In general, he congratulated the members of the association on the progress that had been made during the year, and remarked how dependent the people of the Philippine Islands were upon the medical profession. He stated that the white man could now live in comparative safety and comfort in tropical countries, owing to the many safeguards which were thrown around him by the ever-alert physicians. He also remarked the deplorable lack of medical men in the Philippine Islands, for combating the many diseases with which we are confronted, and expressed the hope that the new medical school, for which provision had been made by the Commission, would, in a few years, be able to supply this need.

The Governor-General was followed by the Secretary of the Interior, the Honorable Dean C. Worcester, who delivered an address, and stated that it was hardly possible to exaggerate the importance of medical work in the Philippine Islands; that we are constantly menaced with the introduction of dangerous epidemic diseases from the neighboring Asiatic coast, and must depend upon the quarantine service to protect us from them. He stated that we have, at present, in the islands, cholera, bubonic plague, and smallpox, and must look to the representatives of the medical profession to hold these diseases within the narrowest possible limits, and stamp them out within the shortest possible time. The medical profession is called upon to combat the various afflictions peculiar to, or aggravated in hot regions, which are commonly known as tropical diseases; that the people here were all too scarce; that while race suicide was by no means common, yet we were confronted with a horrible infant mortality, which made the increase in population painfully slow; that in combating the aforementioned conditions there are encountered at every turn ignorance and prejudice of the people, who, until recently, were wholly unaccustomed to modern sanitary measures, and as yet little appreciate their beneficent influence.

He stated that the number of medical practitioners, good, bad, and indifferent, was absurdly small. There was one physician to every 18,399 inhabitants, and that, outside of Manila, there was only one to each 50,455 inhabitants, and in a number of provinces there was no medical man of any description. A great many of the inhabitants of these islands die without medical attention, and a great many of them of curable diseases. He stated that meetings like the present one of the association have made it possible to foster cooperation between physicians and the interchange of knowledge born of experience. He stated that the Japanese had conferred incalculable benefit upon medical science by their practical demonstration of what could be done in combating epidemics and in protecting the health of soldiers in the field, and, from the day of the establishing of civil government in these islands, the relation between the medical officers of this Government and those of the Japanese Government had been of the friendliest and most helpful character; that in the early days serums and prophylactics were furnished by the Japanese; that representatives of the Bureau of Science who were sent to Japan to study their methods of serum manufacture, and to work in Government hospitals, had invariably been treated with great courtesy and consideration, and had been assisted in every possible way. He stated that it was therefore with special pleasure that he welcomed here to-day Dr. Shiga, one of the most distinguished among the many distinguished scientific investigators of Japan, and that to him we owed a special debt of gratitude for his prophylactics, which have now been long manufactured here and so successfully used in combating bubonic plague; that, owing to the outbreak of plague in Osaka, we had been deprived of the pleasure of welcoming Dr. Kitasato, another Japanese scientist of world-wide reputation, who would have been with us had not the call of duty detained him, but he had sent a valuable paper to be read before the association.

He said that we had representatives with us from the country where the newest efforts to apply modern methods were being made, and of the country where these methods have, in many particulars, reached their highest development, and only good could come of such a meeting.

In the early days of the present cholera outbreak the disease appeared in Bilibid Prison; that the physician in charge of that institution, aided by two other physicians assigned from the Bureau of Health, and by another especially employed to meet the emergency, made vigorous efforts to check the disease, but without success, they being compelled to work under the general control of the warden, a faithful and efficient officer, but who was without scientific experience in dealing with epidemics; that on September 1 he suggested to the Secretary of Commerce and Police the desirability of putting the Director of Health in direct control of the sanitary matters in Bilibid, which was done; that on September 2 the Director of Health thoroughly inspected the premises and ordered sanitary repairs, which were promptly carried out. The last case of cholera occurred on September 5, three days after he had taken charge; that this striking result led him to recommend to the Philippine Commission that the Director of Health be placed in permanent control of the sanitary matters of Bilibid, where conditions were far from satisfactory, the death rate having been 128 per thousand during June, 148 per thousand during July, 188 per thousand during August, and 242 per thousand during September. The recommendation was favorably acted upon, and the Director of Health

assumed control. The death rate for October was 124 per thousand; for November, 123; for December, 64; and for January, 46, as against 82 for January, 1905. He stated that he knew of no more effective demonstration of the value of the application of modern scientific methods in combating disease than the ones just mentioned. He stated that the work of the Director of Health and subordinates, in fighting against cholera in the city of Manila, and in the neighboring provinces, during the past year had been beyond praise. Marine quarantine had proven absolutely effective in preventing the spread of the disease to other islands. The early course of the disease was almost precisely similar to that of the epidemic of 1902. The first cases were very fatal and the number steadily increased. Profiting by past experience, no effort was made to establish a land quarantine, or to isolate contacts. The Bureau of Health concentrated its efforts upon securing the early discovery of all cases, and the prevention of the spread of contagion by most thorough disinfection of premises, clothing, etc., and by the removal to the cholera hospital of those attacked when they could not be safely taken care of at their homes.

Hardly was such a policy fairly established when the number of cases in the city of Manila began to decrease, and was soon reduced to one or two per day, which were usually to be anticipated long after the danger of a general epidemic was over. As the result of the wise policy pursued, fear of the hospital was minimized, relatively few cases were concealed, and the effective cooperation of the Spanish and Filipino physicians secured. Taking into consideration the limited number of medical men available, it was evident from the outset that it was necessary to depend upon an effective campaign of education to prevent the disastrous spread of the disease to the provinces. A set of instructions, explaining in simplest terms how even the poorest people might avail themselves of means always at their disposal effectively to protect themselves from cholera, were prepared, translated into Spanish and the more important native dialects, and circulated throughout the islands; that the public school system furnished the most effective means for distributing these directions. They were taught to the children, who were instructed to tell their parents what they had learned. His Grace, the Archbishop of Manila, not only caused these instructions to be distributed through the agencies at his command, but himself visited the cholera hospital, and directed the priests in Manila to call attention to the fact that this institution offered the best and wellnigh only hope of recovery to those attacked with the disease. The agents of the Bureau of Health visited the towns that were most severely stricken, and by tireless, patient, and persistent effort and rare tact persuaded the municipal officials and private citizens to do their duty; as the result of which cholera has been held in the closest check; that all this has been accomplished without entailing any appreciable or unusual expenditure.

The duties incident to safeguarding the public health of the islands were divided between the Bureau of Health and the Bureau of Science, the latter bureau being specially charged with the diagnosis, by laboratory methods, of those cases which presented the most obscure and difficult symptoms; also to the manufacture of sera and prophylactics required for the work of combating disease. He stated that on the first day of the last annual meeting of the association the machinery of the laboratory building was operated for practical purposes for the first time; that during the period which had elapsed enormous advantages had accrued from the improved facilities afforded by the modern laboratory building and the equipment installed therein; that although the medical men at the laboratory had been, at times, well-nigh overwhelmed with an enormous amount of routine work, nevertheless they had found time to carry on original investigations, and the results achieved attracted wide and favorable attention throughout the scientific world. Especially important had been the preparation, by the Director of the Biological Laboratory, of cholera vaccine, which had been proven to produce an extraordinarily high blood immunity against that disease, and which might be employed without causing any serious reaction. The vaccine had been used on a large number of prisoners in Bilibid, but, fortunately for them, and unfortunately for the cause of science, the Director of Health had stamped out cholera at that institution at the very time the vaccinations had been performed, so that there were no further cases there either among vaccinated or unvaccinated inmates. Recently it had been tried in a number of towns in the provinces, and it was hoped that some more definite and scientific data would shortly be available.

During the year the Bureau of Science had started a journal known as the *Philippine Journal of Science*, in which were published the results of investigations which had heretofore been published in special bulletins of the bureau.

The hospital question still remained a serious one. The Civil Hospital, which has recently been transferred to the Bureau of Health, still continued to occupy unsatisfactory quarters on a most unsatisfactory site, but it was hoped before this association would meet again that at least ground would be broken for a modern hospital. The situation here, however, had been relieved to a large extent by the opening of the St. Paul's Hospital.

The address of Mr. Worcester was followed by an address on "The Progress of Medicine in the Philippine Islands," by Dr. Victor G. Heiser, president of the association. He stated that the health of any community, or of any country, was its most valuable asset, and that the truth of this proposition applied with special force to the Philippine Islands, where so much had been lost, so much delayed, and so much was to be gained by health conditions. If cholera, rinderpest, and surra had not appeared, the historian in these islands would have had quite a different story to tell. These diseases were, in a large measure, responsible for the depression in business, the timidity of capital, and the spirit of unrest, of which too much had already been said. Medical science held the key to the prosperity of the Philippine Islands; that whatever might be the relative importance of the medical man in other parts of the world, he, and the profession he represented, stood first in this country; that to be without health was to be without earning capacity; that public health was an economic asset of the highest possible value, contributing to the economic strength of the people, furnishing the foundation upon which the entire superstructure of municipal life and credit was built. A strong people, relieved of unnecessary burdens caused by sickness and death, could bear other and larger burdens, which would advance them just that much over their competitors.

Medical progress in the Philippines might be divided into three parts, the first, beginning with the Spanish occupation and extending to 1876; the second period, from 1876 to 1898, and the third, beginning with the American occupation and extending to the present time. During the first period physicians were imported, to a large extent, under church or government control. They came and they went, each one contributing something to impress upon a mistrusting people the beneficent intentions of the most charitable and self-sacrificing profession the world has yet known; that modern quackery was scarcely known—and even to-day it might be said there were fewer irregular practitioners in the Philippines than almost any other country in the world. The second period began with the graduation, in 1876, of the first class from the medical department of the Santo Toma's University, the graduates of which held sway until 1898, when the American doctor appeared upon the scene; that, with the beginning of the present period, 1898, a new order of things was established. The microscope supplanted the sword, the martial spirit gave place to the research habit, and the status of social and political prominence, to self-sacrificing obscurity, until to-day, the medical man in the Philippines, like the medical man the world over, is struggling in the race of life, with no hope beyond that of being granted the sacred privilege of helping his fellow-man.

He stated that the last year had been of great importance in its relation to local medical progress. The passage of an act by the Philippine Commission, establishing a medical school and defining the manner in which it should be controlled and conducted was probably the most important; that the establishment of this school marked a new era in the progress of medicine in the Philippine Islands, and, in time, would prove to be the best investment that the Philippine Commission could possibly have made; that the Philippines, with an educated native doctor for every thousand inhabitants, would be a different country with a different history; that American, European, or other foreign physicians were not needed, but educated Filipino sanitarians.

He stated that the Philippines might well profit by the lesson offered by Japan in its recent war with Russia; that almost the entire success of the campaign rested upon the fact that every Japanese who fell must die upon the field of battle; that the Philippine Medical School would do for the Philippines what the Japanese schools had done for Japan, and would prove a blessing to the people, and should have the encouragement which its importance deserved.

That, since the last meeting, the cause of medicine in the Philippines had been greatly advanced by the establishment in the city of Manila of the St. Paul's Hospital; that during the year Bishop Brent, of the Episcopal Church, had completed the necessary arrangements for establishing a general hospital; the Methodists had opened a dispensary, and soon hoped to have a maternity hospital in operation; the navy had completed a modern hospital at Cañacao, in Cavite, and the army had completed another at Fort William McKinley. The Government maintains a sanatorium in the mountains of Benguet, and dispensaries were operated either by church organizations or by the Bureau of

Health, at Cebú, Dumaguete, Cervantes, Laoag, and many other places throughout the provinces; that $5,000 worth of medicines had been sent by the Bureau of Health to remote portions of the islands for the relief of the indigent poor; that dispensaries were now operated at seven health stations in the city of Manila; that St. Paul's Hospital had surgical, medical, and dental dispensaries, and various other church organizations gave out patient relief.

He stated that while it was true that the facilities above mentioned showed great progress, it was also true that Manila is still far behind other cities of the same size, and that a large hospital, with modern buildings and equipment, was urgently needed for the relief of the afflicted, and that if the new Philippine Medical School was to be started with any hope of success, a hospital with teaching facilities, where practical medicine might be learned, would be absolutely necessary; otherwise, theorists would be the graduates.

The Culion Leper Colony would soon be ready to receive patients, thus eliminating one of the most pressing and vexatious questions with which the Bureau of Health had to deal; that the San Lazaro hospitals, with leper, insane, cholera, smallpox, and plague departments, had added to its equipment and facilities, and was better prepared than ever to meet any emergency that might arise.

A few years ago the medical profession looked to its representatives in India for its research work on all tropical diseases, but that since the American occupation of these islands, a great change had taken place; that the names of our scientific men were frequently seen in American and European medical literature; that the medical world maintained an attitude of constant expectancy toward the medical men in the Philippine Islands—an expectancy which had not yet been disappointed; that, during the year, results had been achieved in the advancement of medical science which were not only of interest to the Philippines, but which were matters which had aroused interest and comment from medical men in all parts of the world; that among the foremost might be mentioned the experiments which had been conducted at the leper department of San Lazaro Hospital, in the treatment of leprosy with the *x*-ray. While the work had not been sufficiently extensive to justify a positive statement, yet it had been successful enough to offer a well-grounded hope that the medical profession could hold out some encouragement to sufferers from that loathsome disease, who, from remotest times, had made them exiles from society, and denied all earthly hope; that the results achieved at least demonstrated that it was possible to cure some cases of leprosy.

Another noteworthy achievement was the improvement, by Dr. R. P. Strong, in the preparation of cholera and plague vaccine. A paper by Dr. Wherry, on "Glanders and Its Prevention," had been pronounced in Europe to be the best that had yet appeared on that subject; and the paper on "Tropical Light," by Major Woodruff, of the United States Army, which had attracted so much attention in the medical and lay press, had first been read before the Manila Medical Society.

The American medical profession had been represented in these islands only about eight years; they had been strenuous years, full of discouragements and disappointments, but the record as written was one in which every American physician could take pride. Those who had not had the opportunity to compare results of the sanitary efforts in the cholera epidemic of 1902 with the present epidemic, results might not appear so real as to those who were brought into daily contact with those for whom they were working; that measures which provoked profound opposition in the former epidemic were accepted, and even asked for now.

In speaking of the association, he said that no organization was ever actuated by nobler motives or inspired by higher ideals; it only remained to live up to those principles. The people in the Philippines needed, more than they needed anything, the extension of medical knowledge and advancement of medical science; that the medical profession of the islands needed that elevation of standard, that aid promised by the enforcement of just medical laws, that promotion of friendly intercourse, and that guarding and protecting of material interests promised by the Constitution: the solution of the great problems of State medicine depended upon the enlightenment and direction of public opinion, to which the association had pledged itself; that it was their sacred duty to become more capable, more honorable, and more useful to the public in the cure of disease, and the prolonging and adding of comfort to life.

"Well might the code of ethics of the American Medical Association enjoin us to be mindful of the high character of our mission, and the responsibilities that the physician must incur in the discharge of his momentous duties. Well might that same code of ethics declare that every physician should identify himself with the organized body of his profession as represented in the community in which he resides, and strive to make his local organization an instrument for the cultivation of fellowship, the interchange of professional experience, and the advancement of medical knowledge and the maintenance of ethical standards the promotion of the welfare of the public. The field is large, the work is great, the duty imperative; therefore, in order that we might more fully meet our responsibilities, we should ignore differences of opinion, forget personalities, and all work together for the success of the cause to which we had dedicated our energies, our ambition, and our lives."

OUR LONDON LETTER.

(From Our Special Correspondent.)

OFFICIAL CONTROL OF CONSUMPTION—EPIDEMICS, VARIABILITY, AND PERSISTENCY—DOUBLE OVARIAN CANCER—PYOSALPINX—SUNDAY FUND—UNIVERSITY COLLEGE HOSPITAL—MOUNT VERNON HOSPITAL—DEATH OF DR. G. H. PEARCE.

London, March 23, 1906.

The Local Government Board for Scotland issued on the 10th inst. an important circular to the local authorities on the administrative control of consumption, and on the 20th this action of the board was strongly commended as an example for us at the annual meeting of the National Society for the prevention of phthisis. The Scottish Board opens its circular by asserting that pulmonary phthisis is an infectious disease within the meaning of the Public Health Act, and, accordingly, that the sections relating to other infectious diseases are equally applicable to consumption, which is spread almost entirely by matter coughed up and spat out by persons suffering from the active and developed form. The board therefore recommend that the local authorities should see that disinfection is thoroughly carried out at frequent intervals in the homes of patients, in workshops, or wherever consumptives are employed, the process of disinfection not being left to the friends or fellow-workmen. The local authorities are further recommended to endeavor to have such disinfection carried out in places of public resort and to deal with the practice of spitting by patients. The board deals with a number of other questions concerned with prevention, and even treatment, including sanatoriums, hospitals, dispensaries, medical examinations at these, condition and accommodation of homes of patients, laundry matters, distribution of printed information, arrangements, expert examinations of sputum, blood, discharges, etc.; in fact, all matters concerning the control of phthisis. The authorities are reminded, in conclusion, that all such direct measures must be supplemented by the most thorough general sanitation throughout their districts. An appendix to the board's circular consists of the address on completer organization against tuberculosis delivered at the Paris Congress by Dr. R. W. Philip. Altogether the circular is a remarkable public document, and many are hoping the English Board will follow suit.

Dr. W. H. Hamer took for the subject of his Milroy lectures at the College of Physicians "Epidemic Disease in England—the Evidence of Variability and of Persistency of Type." The three lectures abounded in suggestions and statements which will give rise to reconsideration of some points. In regard to unstable diseases he referred to the possibility that apparent change of type may result from interplay between the organism and its environment. As to disease species, where is the line to be drawn? In dealing with bacteria, are differences of color reaction, fermenting of sugars, clotting of milk, liquifying gelatin, and killing of animals to be regarded as specific? No organisms present more instructive phenomena than the colon group. At one end *Bacillus coli* and its relations, at the other, *Bacillus typhosus* with various "strains," and between the extremes the organisms of dysentery, hog cholera, paratyphoid fever, and bacilli associated with meat poisoning.

The differentiation of species has been carried to such a degree by some that the least variation has been held to mark a distinction, and Dr. Hamer evidently does not follow them. He pointed out the unsatisfactory nature of conclusions adopted under laboratory conditions. The distinction of bacilli by their behavior as "polysaccharine factors" has called up their endowment with various enzmes to the confusion of observers who have not followed the literature closely, and it is pretty clear that Dr. Hamer has felt dissatisfaction with views advanced rather positively and is able to subject them to wholesome criticism. He said that the bacteriologist who claims that the most minute differences distinguish species has to reckon with the fact that the more numerous the species, the greater must have the power to vary throughout long ages, and he would consider that the question is rather one as to the number of stable forms. It is possible a particular organism occupying the attention of a bacteriologist may be a mere subparasite, capable of living symbol-

ically with the parasite-in-chief. Why should not, for example, the influenza organism sometimes live with Pfeiffer's bacillus, at another with micrococcus catarrhalis, and so on? Dr. Hamer suggested that a particular organism might conceivably cause more than one disease by being introduced by different intermediary hosts; also distinct diseases might result when the organism was accompanied by different enzymes or subparasites. With the latter hypothesis the occurrence of mild cases of typhus or influenza during interepidemic periods would fit in. The lecturer suggested that we may have concentrated too much attention on particular links in the chain of parasitism—studied organisms under laboratory conditions, and held disease to be bound up with them, forgetting the parasite might be one of a series, and that it might be replaced in that series by another, and then, for the time being and in that locality, have no further concern with disease. In conclusion he said: "The records of epidemics suggest that some such explanation must be looked for to reconcile the extraordinary persistency of disease types with the no less remarkable variability of the organisms to which the bacteriologist attaches importance as causes of disease."

The Gynecological Society at a special meeting on the 8th determined to discontinue its examination of nurses in view of the probable amalgamation of London medical societies. An alteration of the articles of association was also confirmed as to the filling up of vacancies among the officials.

At the ordinary meeting Dr. Jellett showed specimens of (a) advanced carcinoma of both ovaries; (b) double pyosalpinx associated with the presence of a four months' extrauterine fetus. In the former on exploratory incision the mass previously felt was found to consist of two separate pelvic tumors. The opening was enlarged by a transverse incision through the left rectus to the left superior iliac spine. The left tumor did not give much trouble, but the right was removed with difficulty on account of adhesions. An abscess was found between the tumors and so much infiltration of the ligaments that the uterus was also removed. Four months after leaving hospital the patient returned. Then the rectum was surrounded by a hard mass. But she has since gained weight and seems well.

In the second case on opening the abdomen Dr. Jellett found the right tube enlarged to the size of a sausage, distended with pus, and bound up with the ovary. The skeleton of the fetus projected from the ampulla. Ovary and tube removed. The left tube was also distended with pus, and therefore removed. The patient left hospital in three weeks and three months later was well.

The propriety of operating in such advanced case was naturally referred to in the discussion, and all the speakers considered the operations justifiable. Indeed, the results seem to show that.

Dr. C. H. F. Routh said no one who understood his work could have done otherwise in the first case, which displayed the finest skill and technique. If a patient was certain to die without an operation, it should always be postponed. He had seen hopeless cases recover, one where five members of the hospital staff considered the case inoperable.

Dr. Macnaughton-Jones said no doubt operation was justifiable, and he showed specimens of cancerous ovaries he had removed in such circumstances. He added that many carcinomatous and sarcomatous ovaries gave so little pain that nothing serious was suspected until operation seemed called for, and sometimes malignancy was only discovered at the operation.

Dr. Ryall said the danger of peritoneal infection was not so great as supposed; much less breaking into malignant growths in other organs.

The President, Mr. Bowerman Jessett, said he knew several cases in which the patients were practically dying who had been operated on and lived for years afterwards. It was absurd not to give a patient *in extremis* the chances of life. Sixteen years ago, at the express desire of a patient, he removed the whole breast, the pectoral muscles, and cleaned out the axilla, and she is now alive and well.

Dr. Jellett, in reply, said the transverse incision was made after the exploratory; it was the only time he had found it necessary. He could not retract the walls enough to get round the tumor, so he thought the transverse best. It healed well, in spite of infection from the pus in the pelvis. He was glad to find the opinion unanimous that the operation was justifiable and advisable.

At a special meeting of the Council of the Hospital Sunday Fund it was resolved to apply for a Royal Charter. Though the fund has been working since 1872, it has no definite constitution. It has been acting so far on the rules framed thirty-four years ago. It has no legal power to make by-laws or to give votes to the most generous supporters, say to Mr. George Herring, who has been contributing some £12,000 a year. The fund has increased from £27,000 to £78,000, and it seems time a definite constitution should be provided.

Yesterday the annual meeting of University College Hospital was held, when the report stated that the new building erected through the munificence of the late Sir J. B. Maple was complete and in full working order, with the exception of only one ward of twenty-four beds, the total number of beds available now being 277. But the treasurer reported a considerable indebtedness, and that unless liberal support were forthcoming it might become necessary to close some of the wards. The rateable valuation had been raised from £323 to £1,500, and, though donations had increased, there was a falling off of subscriptions.

Mount Vernon Hospital's annual meeting was held yesterday. The committee's report spoke of disparity between income and expenditure. It appeared there were 110 empty beds and 300 accepted candidates waiting for admission, but the committee had not funds at their disposal to admit more than a fraction of them. It looks as if this committee, with their separate hospitals at Hampstead and Northwood, had undertaken more than they can accomplish. It is not so long since they were in difficulties about meeting their rates. That should have been a warning not to launch out into too great expenditure.

Dr. George Heneage Pearce, aged 42, assistant medical officer of Humberstone Asylum, met with his death on Saturday when riding a motor bicycle. Evidence was given at the inquest that as he approached a farmer's cart he suddenly looked behind him, whereupon his machine swerved and came into collision with the cart, the shaft of which struck the doctor in the chest, and he died before reaching hospital. Death was attributed to shock. It was said that had he not looked behind the cycle would not have swerved, which statement seems to accentuate the perils of cycling.

PROFESSIONAL TREATMENT FOR INSOMNIA.

To the Editor of the Medical Record:

Sir:—Dr. John V. Shoemaker gives the readers of a recent issue of the *Saturday Evening Post* some good suggestions as to "how to get to sleep." He sees fit, however, to give the medical profession a resounding slap. Twice in the article referred to he warns his readers of the sad results of consulting a physician for insomnia. In the first instance the medical man has nothing to suggest but "a little whiskey before retiring"; in the other he gives the patient "one sleep-producing drug or another."

A considerable knowledge of the drug business leads me to the belief that the general use of drugs by sufferers from sleeplessness is usually due to a *failure* to consult the medical attendant. If the medical profession is sometimes guilty of prescribing sleep-producing drugs where other measures would be more appropriate it would be nice in Dr. Shoemaker to lecture his medical brothers on the subject rather than the public. George S. Wright, M.D.

Friday Harbor, Wash.

Progress of Medical Science.

Boston Medical and Surgical Journal, April 5, 1906.

The Mental Symptoms of Cerebral Tumor.—P. C. Knapp analyzes the histories of 104 cases with reference to this point. Mental disturbances sufficient to attract attention were present in seventy-nine. For various reasons the author excludes fifteen of these and considers only sixty-four cases, in which mental symptoms were found in fifty-eight. Slight changes in this respect may naturally escape observation. Grouping the cases according to the nature of the symptoms, it is noted that thirty-one presented the recognized type of mental failure and dullness in varying degree. In seven there was noticeable mental confusion, lack of memory, irrelevant speech, somnolence, stupidity, etc. In fifteen the mental impairment went on to actual delirium, three becoming wildly maniacal and several others requiring restraint. Actual hallucinations were occasionally noted. Neurasthenic and hysterical states were occasionally observed in the earlier stages of the disease. In two cases there were definite hallucinations of persecution. There were no striking differences as to the period of the disease at which the different types of mental disturbance developed. Five of the six cases of the frontal lobe exhibited mental disturbance. Of four tumors in the Rolandic region, two were mentally dull early, one later, and the fourth developed delusions of persecution. Of two parietal cases one presented early neurasthenic symptoms and the other became dull and stupid toward the close. Of six temporal cases, two

were dull, two confused, one delirious, and one presented an appearance typical of general paralysis. Of three collosal growths, all were confused, delirious, violent, and demented. Of nine cases of growth in the optico-striate region, seven were dull. Two cases of growth in the corpora quadrigemina were dull early, while a third showed early mental impairment with delusions of persecution. A case of tumor of the pons was dull. Five out of seven cerebellar tumors were mentally dull, but only one showed this mental failure early. The sixth was delirious. In the seventh case no mental symptoms were noted, but she had headaches with intense vertigo, aggravated by any effort, so that mental symptoms may well have been overlooked. One tumor of the hypophysis showed mental confusion early in the disease. The second was delirious toward the close. Of the seven tumors at the base of the brain, five were in the anterior fossa. Of these, one became dull early, three showed mental confusion later in the disease, and a fifth was delirious, showing mental disturbances early. One tumor in the middle fossa became delirious later in the disease. In only one case of a tumor in the posterior fossa, a growth of the cerebellopontine angle, not involving the brain deeply, there were no noteworthy mental symptoms.

The Operation for Cataract.—F. E. Cheney describes his method of operating, going into full details, which cannot be given here. For a local anesthetic he prefers a 1 per cent. solution of holocaine to cocaine. He admits that as to asepsis the ophthalmic surgeon labors under decided disadvantages. The normal salt solution undoubtedly goes farther than the usual germicides so far as safety is concerned. Great stress is laid upon the sterilization of instruments, which should be used with the greatest care when we are passing them into the anterior chamber, so that they come as little as possible in contact with the outer surface of the globe. For the same reason the fewer instruments that enter the anterior chamber, the less chance of infection. To remove and reenter an instrument is always to be avoided unless absolutely necessary. He notes that a source of infection in certain cases is probably the fluids, aqueous, lacrymal, etc., collecting in the lower culde-sac after they have washed the conjunctiva pretty thoroughly and are likely to be well laden with bacteria. Unless such fluid is removed by occasional sponging, the ends of the corneal wound are sometimes well bathed in it when the eye is rotated downward. Especially is it important to see that this space is well dried before removing the speculum, as the closing of the lids may force this collection over the entire length of the incision. He always uses atropine after operating. It does not seem, according to his experience, to increase the danger of prolapse, and he regards it as certainly an advantage to obtain mydriasis as early as possible.

New York Medical Journal, March 31, 1906.

The Prognosis of Postoperative Femoral Phlebitis.—B. R. Schenck reviews the statistics on this question as illustrated by the personal reports of various operators. He has previously reported forty-eight personal cases and has been able to obtain the later histories of twenty-nine of these patients. These twenty-nine he divides into three groups: (1) Those having symptoms for a period of four months or less and subsequently no trouble, of whom there were eight; (2) those having symptoms for about a year and thereafter no disturbance, of whom there were two; (3) those who have had symptoms ever since the attack, of whom there were nineteen. In none of these cases are the symptoms so severe as to cause any very marked disability. Practically all of the patients state that the swelling is slight and the pain present only after walking or being on the feet more than usual. The author concludes: (1) That all patients have symptoms for a period varying from two to four months; (2) that, if the symptoms persist longer than six months (by which time the collateral circulation is probably as completely established as it ever will be), there is small chance that they will ever disappear; (3) that in about 65 per cent. of all cases there is never complete freedom from attacks of pain and swelling.

Conjugate Lateral Deviation to the Left.—One case is reported by J. H. Claiborne. The patient was a German of 57 years, with a syphilitic history. The salient features of the case, as stated by the author, were the conjugate lateral paralysis with deviation to the left, fugacious left hemianesthesia and hemiplegia, the location by exclusion of the lesion at the nucleus of the right sixth nerve, the absence of hemianopsia, the obvious predominance of the paralysis of the external rectus as opposed to the internal rectus, and the retention of normal convergence.

Myelitis Complicating Pregnancy.—After some observations on this complication as reflected in the teachings of various writers on obstetrics, J. T. Schell gives the history of a woman in her second pregnancy, with whom all went well up to near the end of term, when after a day of unusual exertion in very inclement weather she had the impression of having "taken cold." She had a slight chill and general muscular soreness, especially in the lumbar region and down the thigh. Temperature at this time was 102°. Next day she was better, but on the day following, when attempting to get out of bed, found she had lost control of her left leg and in about twelve hours of the right also. Knee jerk was completely lost on both sides. Sensation to touch was normal, with no anesthesia. Incontinence of urine was present and lasted two days. Bowels were not affected. The fever fell to normal on the sixth day, tenderness in the back and legs rapidly disappeared but the paraplegia remained as before. She was delivered at full term without incident. At time of writing she had regained slight motion in the right leg, but was still unable to stand. The diagnosis of myelitis was agreed to by the consultant, who regarded the attack as due rather to exposure than to the toxemia of pregnancy.

The Chemical Composition of Medicinal Plants.—E. C. Hill gives some interesting facts about the chemistry of the plants commonly used in medical practice. According to his count, there are indexed in the eighth decennial revision of the Pharmacopœia of the United States 157 medicinal plants. Although the present revision shows a commendable reduction in the total number of titles, this elision might be carried, he thinks, much further with benefit to all concerned. For example, he finds herein 16 plants which owe practically all their value to contained tannic acid. Why should we not restrict these preparations to a much smaller number, or use tannin itself? Given with milk, it is tasteless, and is liberated in the intestines, where its action is desired in most instances. By using fewer drugs we should learn to employ them with the confidence and certainty with which the surgeon manipulates his instruments.

Journal of the American Medical Association, April 7, 1905.

Gastric Cancer.—William J. Mayo points out that there is no medical side to cancer of the stomach, and reviews the literature, showing what enormous strides have been taken in gastric surgery of late years. He reviews the statistics of several leading surgeons as well as his own, and shows that not only in the direct mortality of the operation, but also in its later results, it compares favorably with the surgery of cancer of other parts of the body. The only way in which an early diagnosis can be made is by exploratory incision, but clinical symptoms, especially if associated with a history of old or recent ulceration, may arouse suspicion and justify exploration. He gives in detail his steps in performing the radical operation for cancer of the stomach, and remarks that the results of palliative operations are relatively unsatisfactory, the mortality being comparatively high and the average prolongation of life not very great. In 140 of his cases of gastroenterostomy the mortality was 15 per cent., and the average prolongation of life so far as known was less than five months. The figures given by Kronlein and Mikulicz are even worse. The operation merely prolongs a chronic invalidism by a few hopeless, weary months. For cancerous obstruction of the cardiac orifice, however, gastrostomy is the only resource, and is frequently demanded by the patient. He has had eighteen cases with three deaths, a mortality of 16 per cent. The duration of life was about the same as after gastroenterostomy. Of explorations with discovery of hopeless gastric cancer he had seventy-two, with one death in the hospital. The average stay of such patients in the hospital is less than five days, the deep wounds being closed with catgut, and the strong aponeurotic structures braced with buried mattress sutures of linen, silk, or silver. The patients are thus enabled to get about at once and spend the remainder of their lives with their families. In conclusion, Mayo urges on the profession the merits of the radical operation in suitable cases of gastric cancer. The article is elaborately illustrated, showing the steps of the operation.

Appendicitis.—The reasons why early operation will never become the universal practice—the unlikeliness of sufficiently prompt diagnosis and the necessity of gaining consent—are pointed out by O. B. Campbell, and the

importance of proper preliminary medical treatment is emphasized. He objects to the use of purgatives and believes the best results will follow measures directed to the arrest of peristalsis by abstinence from food and drink, rest in bed, the only nourishment being given by the rectum, administration of morphine to allay pain, and the placing of the patient in the improved Fowler position, that is, with the head and left side of the bed elevated. In abscess cases he prefers an incision at the outer border of the right rectus to one immediately over the abscess, and advises closing the abdominal wound and securing drainage through a flank incision. In case of beginning diffuse peritonitis he thinks the Ochsner treatment is generally best. His views are summed up in substance as follows: In incipient appendicitis, before the patient is in the surgeon's hands, all food and drink, except by the rectum, should be withheld. Every patient should be informed of the advantages of early operation. Removal of the appendix or closure of an opening in the cecum should be done in abscess cases when possible without additional risk to life. Mere drainage in every abscess case is to be condemned as non-surgical. Operation during a progressive diffuse peritonitis will be attended with a higher mortality than the procedure here recommended. If the internist could direct his treatment toward the protection of the peritoneum in appendicitis until he can transfer the case to the surgeon, the mortality, Campbell thinks, would be greatly lessened. The adoption of the more rational (Ochsner) method of dealing with diffuse peritonitis will convert a large percentage of these cases into cases of circumscribed peritonitis, when they can be rightly classed as large abscess cases and have the same mortality rate as such.

An Operation for Pyosalpinx.—W. D. Kelly describes the operation for pyosalpinx, which he has performed for a number of years, as follows: The patient is placed in the Trendelenburg position; the bowels, relieved from adhesions if necessary, are pushed back, and the field of operation is walled off with one or two large strips of gauze. Bleeding, if any, should be sought for, and the finger is invaginated between the ligament and the mass and the tube partially freed at the distal end. The index finger is then forced between the broad ligament and the tumor. A cutting needle, half curved, with No. 3 pyoktanin catgut, is passed between the mass and the broad ligament on to the finger, and the broad ligament is tied off. Scissors are used to sever the tissue between the broad ligament and tube. The finger is still further advanced and an overthrow provisional suture, which usually includes the ovarian artery, is taken in the broad ligament. The mass is further separated by advancement of the finger; application of another provisional suture, and the severing of the mass from the broad ligament with the scissors, a little at a time. Immediately on severing the tissue the provisional overthrow suture is tightened, thus preventing hemorrhage. In most cases it is well to put in the provisional Billroth suture before severing the artery. The finger is still further advanced toward the uterus, and the broad ligament is severed as before described, following the provisional suture until the horn of the uterus is reached. The provisional suture is placed in the uterus, an elliptical incision is made, and the tube is removed from the uterus and the suture tightened. Another suture, if necessary, is imbedded in the uterus and tied. The uterus is then grasped with the hand and elevated, if possible. If this elevation is not possible, an attempt is made to separate the adhesions directly behind the uterus, and in this way gradually to shell out the mass from before backward. It may be necessary to tie off some omentum or bands of adhesion. Kelly claims that this operation is almost bloodless and can be performed without the use of ligatures or artery forceps. Drainage is almost never necessary and no counter openings should be made.

The Blood Plates.—G. T. Kemp, H. Calhoun, and C. E. Harris give the results of their enumeration of the blood plates in various conditions of altitude, disease, etc. The various methods and fluids that have been employed are thoroughly discussed and criticised, the one employed by the authors being a solution of formalin in a 1 per cent. solution of sodium chloride, in the proportion of 1 to 15, and colored as desired with methyl green or violet. The ratios determined by them in winter in human blood were almost invariably higher and more constant than those obtained in summer. The same is true of those at high altitudes, but here the red cells were also increased. They review the results of various authorities in pathological conditions, and from the mass of evidence believe that three important generalizations can be culled. The first relates to acute infectious fevers; during their course the number of the blood plates is usually subnormal or normal, but if the fever breaks by crisis it is accompanied by a rapid and striking rise in the number of blood plates. Most observers agree to this, and without exception in the case of typhoid. The second generalization concerns the anemias. There is a remarkable agreement in the belief that the plates are not diminished in the secondary anemias; indeed, they are reported increased in most cases. In pernicious anemia, on the other hand, they are always greatly diminished, and their count is, therefore, of great importance in the diagnosis and prognosis of the case. Lastly, in purpura hemorrhagica the blood plates are enormously diminished in number, and the few that are found are often of large size. This scarcity of the blood plates and slowness of the blood to clot are given by Hayem as the pathognomonic and constant signs of the disease. The authors believe that further investigations of the blood plates, in fevers especially, would lead to valuable results, besides being of use for the diagnosis and prognosis of the cases under observation.

The Lancet, March 24, 1906.

Mycosis Fungoides Successfully Treated by the X-Rays.—The patient of G. G. Taylor was a man of forty-seven years, with numerous tumors scattered over his back, the largest the size of a duck's egg. Large areas of the adjacent skin showed the premycotic condition, which in this case was of the erythematous type, one large disk being very distinct. One of the smaller nodules was removed for the purposes of histological examination. On cutting into the tumor it appeared to the naked eye as a round mass, much denser and firmer than the surrounding tissue and sharply defined from it. Microscopical examination showed a round mass of densely packed cells in the corium. The cells consisted of connective-tissue cells of various shapes, numerous small round cells, and a few plasma cells. No mast cells were found. In some parts the cells were less deeply stained and were crenated in appearance; granular débris was scattered between them. In some parts of the specimen, especially around the periphery, the cells were arranged in columns. Outside the main mass foci of cells were scattered through the corium. The epidermis was thinned and its interpapillary processes flattened out; there was intercellular edema. Exposures of ten minutes' duration each were employed twice a week at a distance of nine inches from the anticathode, 0.5 Holzknecht's units being administered at each sitting with rays of penetration 7 on Benoist's scale. In all fifteen exposures were given. The facility with which the tumors yielded to the treatment was remarkable, since improvement was noticed after the third sitting, and they were completely level with the skin before the hair fell from the adjacent parts of the back.

The Therapeutic Effects of Mercury in a Case of Tuberculous Meningitis; Recovery.—The patient of Whitcombe-Brown was a girl one year old. The usual symptoms of tuberculous meningitis developed. On the fourth day inunctions of the Ung. Hydrargyri were commenced, while the perchloride and the iodide and bromide of potassium was given by the mouth. The symptoms continued for four days, when a marked improvement was noted. From this time convalescence was slow but steady, and in six weeks from the first appearance of symptoms all of the nervous and muscular disturbances were at an end. The report of the case was made at this time. The inunctions were being continued, applied at the nape of the neck or between the shoulders, a piece as large as a filbert nut being rubbed in once a day. For the first fortnight this was applied twice a day. A mixture, two and a half minims of perchloride of mercury, one grain of iodide of potassium, and two grains of bromide of potassium, with syrup and water every four hours, was alternated with the syrup of iodide of iron. The patient was on a full milk diet with beef tea and cod-liver oil emulsion. Lumbar puncture was impossible, as the parents would not consent. As there were difficulties in connection with obtaining an opsonic curve, tuberculin was not tried. There seems, however, little doubt that this was a case of tuberculous meningitis. Three medical men, each without previous knowledge of the opinion expressed by the others, at once gave the same diagnosis.

Post-Traumatic Hemorrhage from the Superior Longitudinal Sinus Without Fracture of the Skull.—An interesting case is reported by E. F. Buzzard and J. Cunning. The patient, a man of twenty-five years, fell on the back of his head, inflicting a scalp wound. Two weeks later he reported that he had had increasing headache since the accident. It was not localized, no eye

symptoms were present, and no paralysis. The abdominal reflex on the left side was absent, the left knee jerk was more brisk than the right, and an extensor response followed stimulation of the sole of the left foot. A tentative diagnosis of intracranial abscess was made and the patient urged to enter the hospital. He did not come for two days, having had meantime some vomiting and some paresis of the left hand and left leg. On admission, symptoms of intracranial lesion were much more pronounced, and two days later he showed left hemiplegia, hemianesthesia, and hemianopsia, but no optic neuritis. Trephining was done over the posterior portion of the fissure of Rolando and a large clot was found beneath the dura. A portion of the clot gave evidence of having been present for several days. The middle meningeal artery was suspected as the source of the bleeding, but the progress of the operation seemed to point to the superior longitudinal fissure as the source of the fresh blood which appeared. The superior longitudinal sinus was exposed and found to be bleeding freely into the subdural cavity. The dura was split up to the bleeding point, forceps applied, and gauze packed around them. The patient's bad condition made saline infusion necessary. Next day the patient was conscious but had considerable pain. Other symptoms were as before. A day or two later the forceps and gauze plugs were removed without incident. Two weeks after operation the patient was allowed up, and two weeks later went to a convalescent home. He exhibited at the time slight weakness and clumsiness in the left arm and hand. Complete recovery ensued. The authors have not been able to find the records of any similar case of hemorrhage from the superior longitudinal sinus in the absence of skull fracture.

British Medical Journal, March 24, 1906.

Intracranial Hemorrhage in the Newborn.—One case is reported by J. C. Turnbull. The child was delivered by forceps under very moderate traction. It cried well and presented only a slight ecchymosis over the left eyebrow. At the end of twenty-four hours it gave a peculiar cry and soon went into tonic convulsions, somewhat controlled by cold to the head, but proving fatal in forty-five hours after birth. Autopsy showed a hemorrhage into the subdural space, probably from rupture of vessels in the pia over the lower aspect of the left hemisphere. The pressure of the effused blood on the veins of Galer and the cranial sinuses had produced edema of the brain and internal hydrocephalus. The author believes that the hemorrhage cannot be accounted for by direct injury to the head from either forceps or pelvic bones. In his opinion the high cerebral blood pressure which must result from rigid contraction of the uterus on the placenta and soft parts is a much more important factor and indicates delivery before the uterus is fatigued, as a prophylactic measure. He believes it would be extremely difficult to locate and ligature a ruptured vessel if craniotomy were performed, as has been suggested.

Ascaris Lumbricoides and Appendicitis.—F. E. Anley summarizes a series of cases which have come under his notice in which patients have been attacked with the usual symptoms of an appendicitis, the same subsiding with the passage of a round worm. The author observes that the habit of the ascaris of inserting itself into apertures and ring-like bodies is well known, and it has seemed to him that an inflammation may be set up by the worm attempting to enter the appendix, sufficient to cause blocking of the lumen, leading to a resultant catarrhal appendicitis; or the worm may actually obtain a partial entrance if not more.

Traumatic Pneumonia.—H. L. E. Wilks calls attention to the fact that much damage may be done to lung tissue without any cutaneous bruising, instancing the case of a boy brought to the hospital with symptoms of internal hemorrhage. No positive history of an accident could be obtained, though he was found in the road and it was possible that a wheel had passed over him. The boy died and autopsy showed a severe laceration of one lung, a large piece of pulmonary tissue lying free in the pleural cavity. There was no fractured rib and hardly any external bruising was visible. He refers to another case—that of a man who had been upset from an automobile. He had local tenderness over one rib, a distinct pleural friction sound, but no pyrexia and no extension of the trouble. The author considers that under such conditions the pneumococcus does not take on its growth in the affected area.

Lumbar Puncture in Puerperal Eclampsia.—Two case histories are given by F. Proud. The seizures in such cases may be due to either toxemia or pressure on the cerebral centers. Acting on the latter theory, puncture was done in both the cases referred to. In Case 1 the usual remedies had been tried without avail, so a puncture was made in the third lumbar interspace and fluid allowed to drop rapidly for some minutes. Recovery ensued. A similar happy result occurred in Case 2. Here the fluid gushed from the needle, it evidently being under pressure. About half an ounce escaped.

Berliner klinische Wochenschrift, March 19, 1906.

The Occurrence and Etiology of Unilateral Clubbed Fingers.—Bernhardt reports a case which is similar to those recently published by Berent and Grödel. The patient was a man of sixty-two years who had had syphilis thirty-eight years previously. On *x*-ray examination he was found to have an aneurysm of the ascending aorta and arch of the aorta, the condition being accompanied by more or less typical symptoms of pain and loss of function. While the right upper arm and forearm were smaller than the corresponding portions of the left arm, the right wrist and entire hand were considerably larger, the finges were clubbed, and presented well-marked claw nails. The author agrees with Berent that the changes in these osteoarthropathies are the result of neuritic processes rather than of simple congestion or the action of toxins produced through congestive or catarrhal processes in the lungs.

An Improvement in Mett's Method of Determining the Digestive Power of Fluids.—Meier, in discussing this method of estimating the digestive power of gastric juice and similar secretions, points out several sources of error in the technique usually employed. The procedure consists in drawing egg albumen into capillary tubes which are heated until coagulation of the albumen takes place. The tubes are then cut into short pieces and one of these is placed in a test tube of the fluid whose digestive power is to be estimated. At the end of twenty-four or more hours the activity of the digestive process is shown by the length of the column of albumen which has been digested out of the capillary tube. Meier says that in preparing the tubes it is difficult to avoid the occurrence of minute air bubbles in the column of albumen, and that these, if present, give rise to a very considerable source of error in the digestion. Again, in cutting the tubes into short lengths all of those must be discarded in which the line of fracture is not clean cut and at right angles to the long axis. Tubes which are not completely filled with albumen, or from which a small portion of albumen projects, also yield inaccurate results. The measurement of the length of the digested column is also a frequent source of error, and the author describes a special piece of apparatus by means of which accurate measurements to one-eighth of a millimeter my be made. Finally, it is stated that if the tubes are used as is ordinarily done by allowing them to stand vertically in a test tube of the digestive fluid, to obtain accurate results it is necessary to disregard the digestion which takes place at the lower end of the tube, because of various disturbing factors which modify the process in this situation. Meier prefers to have the tubes lie horizontally, under which conditions the digestion which takes place at each end may be taken into account, and he describes a special form of receptacle in which the test may be carried out in this way with the expenditure of a minimum amount of the fluid to be tested.

The Treatment of Hemeralopia with Liver.—Sicherer reports remarkable results in the treatment of hemeralopia by means of the administration of liver, and cites the following case. The patient was a forty-five-year-old cab driver, whose vision was perfect in the daytime, but failed rapidly with the onset of twilight, so that he could hardly see his horse's head and had to inquire of passers-by in order to inform himself of the numbers of the houses. On this account he was finally compelled to give up his work and seek medical aid. The patient was ordered to eat 300 to 400 grams daily of cooked liver, and at the end of four days marked improvement had resulted, followed by complete cure at the end of a week.

New Tuberculosis Cure.—A dispatch from Tokio to the *Daily Telegraph* says that Dr. Ishigami of that city has announced the result of a year's experiments with an antitoxin against tuberculosis which he has discovered, and which, he says, unlike other antitoxins, does not result in a rise in the patient's temperature. Dr. Ishigami asserts that the antitoxin has resulted in cures on an average of one-third of the patients experimented upon. The treatment, however, he says, is not applicable in advanced cases.

Book Reviews.

The Edinburgh Stereoscopic Atlas of Anatomy. Prepared under the auspices of the Department of Anatomy of the University of Edinburgh by Professor J. R. Cunningham, M.D., D.S.C., LL.D., D.C.L. Edited by David Waterston, M.A., M.D., F.R.C.S.E., F.R.S.E., Lecturer and Senior Demonstrator in the Department of Anatomy, Edinburgh University. Section II. New York: Imperial Publishing Co., No. 27 East Twenty-second street.

The principle of stereophotography has already been made use of in works in several departments of medicine with such excellent results that it is rather remarkable that this method of securing illustrations has not been more widely applied. The subject of anatomy particularly lends itself so admirably to depiction by this means that the utility of such a collection of photographs as the present can hardly be exaggerated. The section under consideration is devoted to the abdomen, with its contents, excepting the female genitalia, and comprises four plates on the abdominal wall, six on the inguinal region, seven on the abdominal cavity, twenty-one on the viscera, one on the abdominal aorta, eight on the pelvis, and three on the bladder. The dissections have been made with a degree of judgment and technical skill entirely beyond the average student's ability, and as the method of formative hardening *in situ* has been employed, the topographical relationships are preserved with absolute accuracy. The structures are identified by small numbered pointers affixed to the specimen, and each pair of prints is mounted on a card bearing the necessary key and a few lines of letter press presenting a concise summary of the most important features represented. A well-made stereoscope accompanies the plates, and if the sections that are to follow bear out the promise of this one both editors and publishers are to be congratulated on having created a work that must surely prove of the greatest service to students, practitioners, and surgeons.

Clinical Obstetrics. By Robert Jardine, M.D., Edinburgh; M.R.C.S., England; F.F.P.S., Glasgow; F.R.S., Edinburgh. Professor of Midwifery in St. Mungo's College, Glasgow; Senior Physician to the Glasgow Maternity Hospital; Examiner in Midwifery to the Scotch Conjoint Board; formerly Examiner in Midwifery to the University of Glasgow; late President of the Glasgow Obstetrical and Gynecological Society, etc., etc. With ninety-six illustrations and a colored plate. Second Edition. New York: Rebman Company, 1905.

In this treatise on clinical obstetrics the author discusses pregnancy, labor, and the puerperal state, together with the various complications that can occur in these conditions. Right from the start the book is personal, practical, and thorough; merely academic discussions are rigidly excluded. The basis of the book is the personal experience of the author; he tells us what he himself has done, why he did it, what results ensued, and what he would do again under similar circumstances. We would draw particular attention to the author's sections on heart disease as a complication of pregnancy and labor; to the treatment of eclampsia; and to the chapters on the hemorrhages of pregnancy, and post-partum hemorrhage. This book will appeal to the practitioner, as it contains just the advice and help that he is apt to require; it mentions, and fairly faces, all the difficulties that are liable to be encountered in obstetrical practice; nothing is evaded, and the author states his failures as well as his successes. Throughout one feels that the book is written by one who has not only had unrivaled opportunities, but who also knows how to express clearly what he wishes to say, and to gain the confidence of the reader. This is a most useful book.

Sexual Neurasthenia (Nervous Exhaustion); Its Hygiene, Causes, Symptoms, and Treatment. With a chapter on Diet for the Nervous. By George M. Beard, A.M., M.D. Formerly Lecturer on Nervous Diseases in the University of the City of New York; Fellow of the New York Academy of Medicine, etc. Edited with notes and additions by A. D. Rockwell, A.M., M.D., Neurologist and Electrotherapeutist to the Flushing Hospital; formerly Professor of Electrotherapeutics to the New York Post-Graduate Medical School and Hospital; Fellow of the New York Academy of Medicine, etc. Sixth Edition, with formulas. New York: E. B. Treat & Co., 1905.

In this new edition of Beard and Rockwell's well-known work attention is drawn to the symptom of urinary incontinence in its relation to neurasthenia. In many cases this incontinence is the cause of the neurasthenic symptoms; and in some cases it is possible to bring about the disappearance of the neurasthenia if one can only succeed in relieving the incontinence with which it is associated. Dr. Rockwell has managed to effect this in some cases by the action of the isolated induction shock on the atonic perineal muscles; and a description of his method and technique forms the chief feature of the chapter which he has added to the book.

How to Become a Trained Nurse. A Manual of Information in Detail, with a complete list of the various training Schools for Nurses in the United States and Canada. Second Edition. Edited by Jane Hodson, Ex-Directress of Nurses, State Hospital, Fountain Springs, Pa.; Ex-Matron of the House of Relief, Hudson Street, New York; Graduate of the New York Hospital Training School. New York: William Abbatt, 1905.

This book can be divided into two parts; the first and larger part consists of a number of short chapters on various aspects of nursing and on subjects of interest to nurses. Among others there are chapters on private nursing, hospital nursing, nursing in private sanatoriums, district nursing, obstetric nursing, male nurses, etc. These chapters are by different writers, and consequently vary both in style and merit. The one that has impressed us the most favorably is the exceedingly sensible and practical article on "Private Sanitarium Employment," by Miss Alston, of New York. There is a chapter on "Some Eminent Nurses," giving sketches of the careers of Florence Nightingale, Alice Fisher, "Sister Dora," and Agnes Jones. The remainder of the book contains a list of the training schools for nurses in the United States and Canada, with such particulars as are likely to be useful to would-be nurses. This is the more important part of the book, and in it will be found an answer to many of the questions likely to arise in the minds of those desiring to become trained nurses but who know little or nothing of hospitals and training schools. There is also provided a list of denominational schools, schools for colored nurses, for men, and for attendants on the insane. Next is a list of questions asked of candidates for admission as probationers; and such candidates would do well to read this list before making application.

Movable Kidney. A Cause of Insanity, Headache, Neurasthenia, Insomnia, Mental Failure and other Disorders of the Nervous System. A Cause also of Dilatation of the Stomach. By C. W. Suckling, M.D., M.R.C.P., etc. London: H. K. Lewis, 1905.

As indicated by the title, the writer of this little book finds in displaced kidney the cause for many ills to which the human frame is heir. His enthusiasm leads him to make a number of forcible statements, among which may be cited the claim that "no man or woman should be sent to an asylum (for the insane) to-day without careful and repeated examination for dropped kidney." The work is based largely on the author's personal experiences and consists in great part of case records of patients who have been apparently freed from a large variety of symptoms by the restoration of a movable kidney to its normal resting place. Goelet's operation is preferred for this purpose and is described in an appendix. There are numerous illustrations and charts, including photographs of patients before and after operation; the good effects are marked even in their facial expressions of happiness and content.

Bodily Deformities. In a Series of Lectures by the late E. J. Chance, F.R.C.S., England; Edited by John Poland, F.R.C.S., England. Second Edition. In two Volumes, Volume I., London: Smith, Elder & Co., 1905.

This little book is interesting from the historical standpoint rather than from the technical, for it contains in amended form the lectures delivered by Dr. Chance at the old Hunterian School of Medicine, over fifty years ago, and first published in 1862. The lectures are presented by the present editor in their original form, a certain number of footnotes bringing the book in line with later research on this subject. The "nature, variety, and causes of bodily deformity" are dealt with in the first volume; the second was to include treatment, but has never been published. At the time when these lectures were first delivered, orthopedic surgery had just become established in England as a specialty, and the author's arguments with reference to the etiology of congenital deformities constitutes very interesting reading, despite the progress which has been made in this branch of medicine.

A Pocket Formulary By E. Quin Thornton, M.D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia. New Seventh Edition, Revised. Philadelphia and New York: Lea Brothers & Co.

The present edition of this useful formulary brings its prescriptions into harmony with the requirements of the new United States Pharmacopeia. The little volume has also been subjected to emendations in other particulars, and can be commended to those whose needs lie in this direction.

Society Reports.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

Eighteenth Semi-Annual Meeting, Held at St. Joseph, Mo., March 22 and 23, 1906.

DR. JOHN E. SUMMERS OF OMAHA, PRESIDENT.

Surgical Treatment of Goiter.—Dr. CHARLES H. MAYO of Rochester, Minn., read a paper with this title, which was based upon two hundred operations. He said that the neck was a field for specialism in surgery, while diseases of the thyroid gland were one of the numerous attractions. Accessory thyroids were usually but lost or unattached parts of the gland in lines of development. The statistics of myxedema following operation were unimportant in this country as yet, owing to the infrequency of the complete operation. Many cases of partial and even complete myxedema without operation were overlooked. Large cystic and encapsulated tumors within the glands could be enucleated to save useful gland substance. In Graves' disease one lobe and the isthmus should be removed, and if there was recurrence of symptoms, the lower part of the remaining lobe should be taken away. In the worst cases this should be done at the primary operation. Operation in this disease was no longer experimental. Both medical and serum therapy were still under discussion. Fearing malignancy, early operations were recommended in irregular and hard tumors. Transverse sections of the skin and platysma muscle, with muscle section of the omohyoid, sternothyroid, and hyoid as high as the thyroid cartilage, should be made to preserve intact their nerve supply in cases in which it was necessary to obtain greater space. More than one-half the operations performed upon the thyroid gland were those of expediency. It was therefore necessary that a low mortality rate accompany operations for goiter. During the last fifty years the mortality had been reduced from forty per cent. to a fraction of one per cent. In a total of over two hundred operations upon the gland, if the cases of exophthalmic goiter and malignancy were excluded, there was but one death.

Dr. L. L. MCARTHUR of Chicago said that Rogers of New York, within the last two months, had presented a method which was very promising in the treatment of exophthalmic goiter. He was led to his investigations in regard to this disease through the sufferings of his wife. When her condition became so severe that it seemed she was about to die, he became desperate enough to try some serum experiments. He accordingly made some emulsions of recently excised thyroid goiter of the exophthalmic type, and injected them into rabbits. From the rabbit he obtained a serum, one injection of which practically caused disappearance of all the symptoms of goiter in his wife. The profession of New York was extremely enthusiastic over the future of this line of treatment for severe types of exophthalmic goiter.

Dr. T. C. WITHERSPOON of St. Louis had had experience with 18 cases of typical exophthalmic goiter. He had operated upon this number of patients, and in each case, save one, he used local anesthesia. About five weeks ago he removed an exophthalmic goiter from a patient suffering at the same time from malignant disease of the breast. Her pulse, on an average, was 140. One week after removal she was in good condition. Her pulse dropped to 95. He used a general anesthetic (ether), and removed the breast radically, but within five hours thereafter her pulse was 170, although while on the table her condition was good. The amount of blood lost was small. There was no reason for the high pulse save the general anesthetic. After this time the pulse quickly dropped, and she recovered. His fear had always been the ill-effect of general anesthesia in these cases.

Dr. Mayo, in closing, said that Dr. Rogers had undoubtedly developed a cytolysin for the destruction of the thyroid. In working with normal thyroids Dr. Rogers had not been able to get any effect. This winter Dr. Mayo sent him seven exophthalmic glands with which to do his experimental work, because it was essential to use a diseased organ. He recently received a letter from Dr. Rogers, stating that he had removed the only exophthalmic goiter in New York the past winter. The serum treatment had to be worked out; while the results were favorable in twelve cases of Dr. Rogers in others no benefit had resulted.

Some Pathology of the Morphine Habit.—Dr. S. GROVER BURNETT of Kansas City, Mo., commended (1) the acute hyoscine poisoning method, attended by coma, delirium, and reactionary prostration of both mental and physical forces; (2) the abrupt disuse of the drug, as was enforced in jails, penal institutions, and asylums; (3) the rapid withdrawal of the drug during four to eight days; (4) the so-called slower reduction, requiring fourteen to twenty days. In his opinion, these methods could be applied only to selected cases. The author's reasoning for a delicate technique in treating the morphine habit was based upon an imperfect but an acceptable knowledge of the pathology as found post-mortem in three cases, one of which is here reported. In this case, that of a man, aged forty-five years, addicted several years, using hypodermically sixteen grains of the drug daily, and suffering severely, the patient manifested the typical general symptoms of the habitué. He did not take any food for a week before death. After a large injection, the quantity of which was unknown, he died in a few hours from typical morphine poisoning. Autopsy revealed fatty degeneration of the heart, muscles, liver, and kidney, pulmonary edema and venous congestion of the viscera; atrophy of the pancreas, replaced by fat; considerable edema of the brain. Microscopically, most of the cells of the central nervous system showed a marked absence of the normal amount of the chromatic substance. In the cells of the cord, medulla, cerebellum, and cerebrum these bodies were deficient in size and number, or entirely absent. In the medulla the chromatic bodies were retained by some cells, but they had undergone marked subdivision and the nuclei were shrunken and eccentric. The granular yellow pigment was increased in all the cells of the central nervous system.

His last forty patients, with one exception, had been physicians, members of physicians' families, or nurses. He said that many physicians addicted to the morphine habit would make habitués of their wives or others with whom their professional position allowed close association.

Dr. F. E. COULTER of Omaha said that in cases of morphine habit or drug addiction, it was very essential to have the hearty cooperation of patients to be successful in any line of treatment we might inaugurate. Every avenue should be put out of the way of a morphine habitué whereby he could get the drug. The patient should be placed in an institution where it would be pleasant and where he would not feel that he was in prison. His associates should be congenial. The nurse should be satisfactory to patient. Personally, he employed what was known as the physiological method in treating these patients.

Is Vaginal Cesarean Section Justifiable? — Dr. PALMER FINLEY of Chicago read a paper with this title, in which he drew the following conclusions: (1)

Less time was consumed in delivering the fetus by the abdominal route. (2) Greater accuracy was assured in surgical cleanliness by the abdominal route. (3) The abdominal incision was wholly under control of the operator, whereas in the extraction of the fetus per vaginam the incision might extend beyond the control of the operator, as it had in more than one case, and with fatal results from hemorrhage and infection. (4) In an abdominal cesarean section opportunity was afforded of rendering the patient sterile by resecting the tubes when thought advisable, and various lesions, such as adhesions, tumors of the uterus demanding hysterectomy, bands as the result of ventrofixation, and diseased appendages could be dealt with. (5) The abdominal route assured the fetus of the greatest consideration, inasmuch as the application of forceps and the turning of the child in utero were necessarily attended by dangers to the fetus. (6) Rupture of the uterus in subsequent pregnancies through the scar of a cesarean section was a not uncommon accident, and it was apparent that since the large majority of ruptures of the uterus were in the lower uterine segment, a scar at this point would more likely be disposed to rupture than one located in the fundus. There were as yet no records of injury to the bladder and ureter, and the limited time since the introduction of the operation left us in doubt as to the dangers from rupture of the lower uterine segment in future pregnancies, but might we not with fairness anticipate such accidents and therefore proceed with caution? Returning to the original question propounded in the subject of this discussion, the author would answer, in the light of the reported cases, and judging by the results obtained in the use of other well-established methods of delivery in cases similarly indicated, that vaginal cesarean section was not destined to find general favor with trained obstetricians, and that the legitimate scope of the operation would be so limited that it would be little practised. And yet we might expect that it would remain in general favor with a few obstetricians.

The Surgical Treatment of Total Prolapse of the Uterus.—Dr. C. O. Thienhaus of Milwaukee said the fact that many surgical methods were devised for the treatment of total prolapse of the uterus demonstrated that possibly none of them was absolutely perfect and adjustable to every case. The author believed that those methods which made the use of the body of the uterus as a support to the bladder were to be preferred, because thereby a recurrence of the accompanying cystocele, which so often took place after other methods of surgical procedure, was made absolutely impossible. He described at length a method used by himself, a modification of that employed by Schauta and Dührssen, and reported nine cases upon which he had operated, with satisfactory results.

Dr. A. H. Cordier of Kansas City saw no objection to departing from some of the older methods for holding the uterus in its proper position. It was his custom to do a ventrofixation operation in old patients, doing complete repair of the perineum, both anterior and posterior, and not simply making a flap in the vagina, but repairing the muscles, reestablishing them, and putting the uterus in normal position.

Dr. O. Beverly Campbell of St. Joseph, Mo., said there was a class of cases in which the procidentia had remained for a long time, in which the vaginal mucosa had ulcerated to such an extent that it was almost destroyed, and he had seen a few such cases in which he believed the more radical operation of Professor A. Martin, or removing the entire vagina and uterus, and closing up the opening, would give better results than the operation described by Dr. Thienhaus. This was especially true in old women, say sixty-five years of age, old maids or widows, for whom matrimony did not enter as a factor. Ventrosuspension for the cure of procidentia had been a most unsatisfactory procedure.

Tumors of the Cerebellum.—Dr. F. E. Coulter of Omaha read a paper on this subject, in which he reported a case. The author dealt with the question of neoplastic growths in the posterior fossa of the skull, taking up the etiology, symptomatology, and diagnosis. He emphasized the more common signs and symptoms of disease in this location, thus making of more practical importance the questions of diagnosis and treatment.

Blastomycetic Dermatitis.—Dr. William Frick of Kansas City, Mo., said that while this could not be considered a very common disease, it was more frequent than was generally supposed, especially in the inland portions of America. He referred to the number of cases found in the literature, and briefly reported three that he had observed. The histopathology of the three cases was practically the same as that described by other observers. There were a few things about it which made a striking and typical picture. There was increased proliferation of epithelium, the interpapillary plugs extending deep into the corium, and sometimes being distorted. There was also the presence of whirls, as seen in epithelioma, but the epithelium held together and was not bound down in the connective tissue structures cut off from the epithelial layer, as in cancer. The most characteristic thing appeared to him to be the miliary abscesses which were found both in the epidermis and in the corium. It was in these abscesses that the organism was most abundantly found. Another interesting point was the large number of giant cells resembling those seen in tuberculosis. For the present, the treatment consisted in excision, the administration of iodine compounds, and the use of the *x*-ray. Since the point of entrance was usually some exposed surface of skin, if an early diagnosis was made, a complete excision would usually end the case, and was the quickest and most satisfactory method of disposing of it.

Dr. Charles G. Geiger of St. Joseph, Mo., detailed a typical case of this disease which he saw about a year ago. He discussed the differential diagnosis of blastomycosis from tuberculosis verrucosa cutis, fungous syphiloderm, and lupus vulgaris.

Intestinal Tuberculosis and Its Surgery.—Dr. L. L. McArthur of Chicago delivered the Address on Surgery. He stated that with the reopening of the question which had hitherto been accepted as settled, that infection in tuberculosis almost invariably occurred through the respiratory tracts, the latest and more painstaking observations show that through the intestinal tract a far larger number of cases of infection existed than had been thought or deemed possible. Practically, nursing children and milk-fed infants were the only ones who were afflicted with true primary intestinal tuberculosis, because (1) they were the ones exposed most commonly to infected foods; (2) their intestinal tracts were less resistant to such invasion. Eisenhardt, in one thousand autopsies of tuberculous adults, found 563 cases of intestinal infection, of which 489 had cavities in the lungs, and 74 had not. Intestinal tuberculosis was frequently overshadowed by the pulmonary disease; but inasmuch as the presence of cavities determined so regularly the intestinal infection, the absence of cavity would have a decided prognostic value in those cases that clinically came to the surgeon for aid. These would, in the largest proportion of cases, be over twenty-five years. After discussing at length the varieties of intestinal tuberculosis, and the treat-

ment from both a medical and surgical standpaint, the author's study of the literature, and his personal experience, led him to the following conclusions: (1) The term primary tuberculosis of the intestines was both clinically justified and often demonstrable on section. (2) That in selected cases, though desperate, surgical interference offered reasonable hope. (3) That the capacity for withstanding surgical interference was greater for this condition than that which obtained with other abdominal affections of like magnitude. (4) That the first symptoms of this disease might begin as, and even be mistaken for, an appendicitis. (5) That partial or total exclusion would in some cases accomplish the desired results when conditions contraindicated excision. (6) That the ulcerative variety might make numerous fistulæ, as in the author's cases. (7) That simple inflammatory processes were apt, in a tuberculous subject, to become tuberculous. (8) That surgery offered much hope to an otherwise probably fatal issue. (9) Many a case of general abdominal tuberculosis was the end result of a preceding intestinal tuberculosis which might have been at one time operable. (10) Both bovine and human tubercle bacilli, while not identical, were related varieties of one original form. (11) That the cutaneous hand infections of butchers were a strong argument against absolute difference.

(To be continued.)

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held January 16, 1906.

DR. CHARLES H. LEWIS IN THE CHAIR.

A Case of Myxedema.—Dr. J. FINLEY BELL of Englewood, N. J., presented this patient, whom he had had under observation for several years. Photographs were shown, by which it was seen that the improvement under five weeks of treatment with thyroidin was very marked.

A Case of Typhoid Fever Complicated in Its Prodromal Stage by Jaundice.—Dr. WARREN COLEMAN said that jaundice was one of the rarest complications of typhoid fever and that Sir William Jenner never had seen a case, while Murchison saw only four cases, and Griesinger observed it ten times only in 600 cases of typhoid fever. Liebermeister reported that it occurred twenty-six times in 1,420 cases, while others had reported it to have occurred in the percentage of 1 to 1½. Jamieson, on the other hand, writing from China, said that jaundice was generally present to a greater or less extent in prolonged cases of typhoid. It seemed, therefore, that jaundice complicating typhoid fever was common in China. Jaundice usually occurred late in typhoid fever, but might occur in the first week. In the case Dr. Coleman wished to report jaundice developed five days before the onset of the fever; in fact, during the first two days in the hospital the temperature was subnormal. The patient was a man, 38 years old, who entered Bellevue Hospital July 23, 1904, giving a history of excessive indulgence in alcoholic stimulants. His physical examination on admission showed an alcoholic appearance with a deep yellow hue over the entire body, the conjunctiva having a deep orange color. The case presented the course of a mild typhoid, and the following points in the subsequent history were worthy of notice: The pulse was persistently rapid and dicrotic. The stools were clay colored, a very unusual thing in the jaundice of typhoid. There was nose bleed on the fourth day of the fever and the ninth day of the jaundice. There developed a few petechiæ on the legs, one the size of a dime. At no time were they able to find rose spots. The blood examination gave no organisms of any kind. The serum reaction, though negative at first, became positive to typhoid at 1:2000. The serum reactions with the clinical course of the disease were sufficient to establish a diagnosis of typhoid fever. Dr. Coleman said that Osler had grouped the cases of jaundice occurring in typhoid fever into four classes: the catarrhal, the toxic, those associated with gallstones and cholecystitis, and those associated with abscess. DaCosta stated that the catarrhal cases were rare, and six of the eight cases seen by Osler belonged to this group. Apparently the earlier the jaundice the more likely was it to be due to a catarrhal cholangitis, and, consequently, more serious. His case was probably of this nature. Recently evidences had been adduced to show that catarrhal cholangitis might be caused by the typhoid bacillus in the absence of typhoid fever (Müller). Dr. Loomis had reported such a case seen at Bellevue Hospital this autumn. It had been proven that the bacillus typhosis might cause cholangitis without and relation to typhoid fever. In DaCosta's case and in the one he reported it was probable that the typhoid bacillus attacked the biliary passages and the body at large at the same time. The cases of toxic jaundice belonged to the category of hepatic toxemias and extreme cases resembled acute yellow atrophy. They occurred late in the disease, and often ended fatally. In abscess of the liver jaundice was not always a concomitant when abscess of the liver complicated typhoid fever. Cholangitis as a complication of typhoid fever had been so extensively studied that a consideration of it was unnecessary in this connection.

Dr. SHERMAN asked if there were any evidences of an alcoholic gastritis.

Dr. COLEMAN answered no. The man, however, was a decided alcoholic and the jaundice was very deep.

A Case of Henoch's Purpura with Severe Visceral Crisis.—Dr. T. STEWART HART reported this case. The patient was a boy, aged 15 years, who was admitted to the Seton Hospital on August 12, 1904. The family history was negative. In 1904 he was admitted to Bellevue Hospital, where a diagnosis of pulmonary tuberculosis was made. When admitted to Seton Hospital he had well-marked pulmonary lesions with signs of cavity in the left upper lobe, was considerably emaciated, and seemed quite ill. For a time he was kept in bed, but gradually he began to improve and was allowed to be up and out of doors. After having been in hospital for about six months he came in from coasting, claiming that he had injured his right foot. On examination a number of bright red spots between the toes of both feet were found. They were discrete and did not disappear on pressure. The right ankle was swollen and somewhat tender. The spots gradually increased, extending up the anterior aspect of the legs, and, in two days, they reached the knees, at first appearing as distinct spots, soon becoming confluent, and as the areas became older they changed to the characteristic dark bluish areas. On February 25 large ecchymotic areas were noted over the anterior parts of both thighs. On February 28 there were pain and stiffness in all the joints of arms and legs, with large purpuric areas over arms and forearms, with some scattered areas over chest and back. On March 16 abdominal pain was complained of, and he vomited several times during the day. The left iliac region was tender and rigid. Temperature was 99°, pulse, 86. During March 17 he vomited all night and all day, mucous and bile. On the 18th and 19th he felt much better. On March 22 he was seen by Dr. Lee, who agreed that the diagnosis was probably peritonitis, but he advised against operation. There was a polymorphonuclear leucocytosis of 26,300. On March 23 there was vomiting, the abdomen was tender and rigid, and rectal feeding was begun. The temperature ranged higher every day from March 21 to 28, when it reached 103.2° and then gradually subsided. From this time there was a gradual improvement and on March 30 the patient was allowed to sit up. For two weeks longer he continued to have purpuric spots over the extremities, with pains in the ankles. The point of interest in this case was the extensive purpura complicating tuberculosis. This case might be classified as a Henoch's

purpura with the characteristic visceral crisis. In this case the expression of the face, the vomiting and diarrhea, the extreme general tenderness and rigidity of the abdomen, with a considerable leucocytosis, all indicated a picture of peritonitis. There were many theories of purpura advanced, and the most fascinating was that of Flexner, who suggested the possibility of a lesion in the blood which dissolved the endothelial cells, permitting hemorrhage into the subcutaneous tissue.

Dr. L. F. Bishop said that at the Lincoln Hospital there was admitted a man with a marked purpura, particularly over the chest, who vomited everything placed in the stomach and who had to be placed upon rectal feeding. After two days the vomiting ceased. This man he believed to have had a gastric crisis in the purpura.

Dr. Heinrich Stern discussed this report.

A Report on the Clinical Chemistry of the Blood in Various Diseases.—Dr. H. S. Carter presented this communication, showing the findings particularly in three diseases: chronic diffuse nephritis, illuminating gas poisoning, and pneumonia. A few cases of scattered diseases were also reported. Altogether he reported the findings in 117 cases, giving the estimation of the percentage of total chlorides and the urea in the blood. The normal percentage of urea in the blood ranged from 0.01 to 0.04, and the chlorides 0.6. The percentage of chlorides (0.9) was isotonic with that of the blood.

Chronic Interstitial Nephritis.—Thirty-nine cases were reported, and this series was divided into the fatal and the non-fatal cases, and also whether they were suffering from convulsions or not. The division was purely an arbitrary one. The total amount of urine passed in twenty-four hours in the fatal cases was 950 c.c.; in the non-fatal cases, 1,280 c.c.; the specific gravity among the fatal cases was 1,015; in the non-fatal cases, 1,015; the amount of albumin in the fatal cases was 7.9 per cent., and in the non-fatal, 4.3 per cent.; the percentage of urea in the fatal cases was 1.63; in the non-fatal cases, 1.36; the amount of urea in twenty-four hours in the fatal cases was 14.02 grams; in the non-fatal cases, 15.4 grams; the percentage of chlorides in the fatal cases was 0.21, and in the non-fatal cases, 0.66; the chlorides in twenty-four hours in the fatal cases amounted to 2.1 grams, while in the non-fatal cases it was 10.2 grams. The examination of the blood in all cases gave an average of urea 0.207, and the average of chlorides, 0.67 per cent. In the cases with convulsions the average of urea was 0.25 per cent., the average of chlorides was 0.6 per cent; in the cases without convulsions the average of urea was 0.2 per cent., the average of chlorides was 0.63 per cent. (these at a temperature of 63 C). For all of the non-fatal cases the average of urea was 0.76 per cent., and of the chlorides, 0.65 per cent.; of the cases with convulsions the average of urea was 0.078 per cent., the average of chlorides, 0.6 per cent.; of the non-fatal cases without convulsions the average of urea was 0.077 per cent., and the average of chlorides was 0.76 per cent. The following were the points of interest among these 39 cases of chronic interstitial nephritis: (1) The total amount of urine, specific gravity, percentage of urea in the fatal and the non-fatal cases varied within narrow limits; (2) the percentage of chlorides and the total amount of chlorides in the urine of the immediately fatal cases were lower than those with temporary improvement; (3) in the blood the average percentage of urea in the fatal cases was three times as great as in the non-fatal cases; (4) the average percentage of chlorides was not of great difference; (5) the presence or the absence of convulsions in the fatal and the non-fatal cases did not seem to be associated with the amount of urea or chlorides.

Illuminating-Gas Poisoning.—There were 20 of these cases examined. In 7 of them the symptoms were mild in character and they were transferred to other hospitals, therefore data were not obtained. There was an increase in the total chlorides in the blood in most of these cases. In 11 cases in coma there was a notable increase. When the patients were under 30 years of age the chlorides were high in percentage. Only 1 case showed any marked leucocytosis. A secondary count showed a decreasing leucocytosis and of the polymorphonuclear variety. So far as the percentage of urea was concerned there was a very narrow limit in the fatal and non-fatal cases, averaging about .05 per cent. There were but 3 fatal cases, only one though being due to the gas poisoning itself; one was due to a bronchopneumonia, and another to abscess of the lung. In an examination of the blood in these cases the following points were of interest. Where exposed eight hours or more there showed a total chloride of 0.91 per cent.; cases in coma showed 1.02 per cent.; cases with temperatures 102° or over showed 1.31 per cent.; cases under 30 years of age showed 1.26 per cent.; cases over 40 years of age showed 0.64 per cent.; leucocytosis, 18,000. There was no notable increase in the urea. This showed quite a variable amount of chlorides in the blood.

Pneumonia.—There were 16 cases, with four recoveries and twelve deaths, rather a high percentage of fatal cases. An examination of the blood in the non-fatal cases showed 0.78 per cent. chlorides, 0.053 per cent. urea, and 20,000 leucocytes. In the fatal cases there was 0.96 per cent. chlorides, 0.8 per cent. urea, and 10,000 leucocytes. Where one lobe was involved the urea amounted to 0.066 per cent., where two lobes were involved, 0.083 per cent., and where three or more lobes were involved, 0.11 per cent. This showed a decided increase of urea in the fatal cases. When there was cyanosis the urea percentage was higher, irrespective of the lung involvement. Irrespective of the termination or complications, the greater amount of tissue involved gave a higher percentage of urea in the blood. Dr. Carter then referred to some miscellaneous cases that had been examined, such as chronic endocarditis, alcoholic dementia, chyluria, gastric carcinoma, hysteria, tuberculous pleuritis, cerebral hemorrhage, diabetes, epidemic cerebrospinal meningitis, etc., but data were deficient on which to base any important findings.

Dr. George A. Tuttle said that the work done by Dr. Carter was at his suggestion, but the results had not quite met their expectations. He said that Widal had observed in cases of nephritis with general anasarca that if he limited the amount of chlorides ingested the anasarca disappeared; but if salt was again given, the anasarca reappeared. In one case this was repeated nine times with the same result each time. The observations of Dr. Carter had not yet been carried far enough to be of great value. The cryoscopic results did not agree with the chloride results.

Dr. C. A. Herter said that some years ago he made use of the urea determinations in the blood, especially in relation to cases of chronic nephritis; he also made some observations upon cases of pneumonia. The results he obtained were not unlike those obtained by Dr. Carter, and which he had recorded in a paper in Welsh's "Festschrift." There was one point that came out in his studies, and that was that a study of the urine as regarded the urea was of little aid in reaching any conclusions as to whether the urea in the blood was increased or not. It was possible to have for a long period of time a small reduction of urea in the blood of various organs without showing any demonstrable falling off in the amount of urea in the urine. It was interesting to note that the fatal cases in his series of cases showed such a higher percentage of urea than the non-fatal. He said that if an animal, like a monkey, was infused with urea, when the blood content was reduced to .5 per cent., twitchings or general convulsions appeared, and he had often wondered if it was not likely that when they got a percentage of urea which approached the limit mentioned, whether the urea could not be regarded as contributable in the production of the violent nervous disturbances. Again, when the urea in the blood amounted to .4 per cent., one found that there was apt to be some elimination of urea by the intestinal tract. In three dogs in which infusion of this sort had been made there was

an increased peristalsis followed by an actual catharsis. If one went higher than .5 per cent. of urea in the blood then there would appear congestion, or hemorrhages in various parts of the intestinal tract, especially in its lower portion. This seemed to him to be a clear case of elimination. In those cases of chronic nephritis in which there was a persistent diarrhea and high urea content in the blood, with evidences of congestion and hemorrhage, sometimes even ulcerations, in those cases he thought they were dealing with one of the manifestations of accumulation of great excesses of urea.

Some Relations of Chronic Intestinal Putrefaction to the Severe Anemias.— Dr. C. A. HERTER presented this communication. After referring to some properties of indol, skatol, methyl indol, with demenstration of color reactions (see MEDICAL RECORD, December 16, 1905, p. 997), he briefly summarized by stating that there were a number of cases of anemia occurring in infancy associated with very marked increase in intestinal putrefaction, and that it was reasonable to suppose that the anemia bore some relation to the putrefactive changes, for the reason that when the putrefactive changes let up the patients improved. Ideal conditions for this study were offered by children, because, in the first place, they were not subject to innumerable diseases and because they could be brought under good control and the mental factor could be eliminated. The probabilities were that there were rather severe secondary anemias in children connected with excessive intestinal putrefaction. There were cases in older children, and in adults, where a moderate degree of secondary anemia appeared to be intimately associated with putrefactive disturbances. That the severe anemias could really be said to be due to the existence of putrefactive changes did not appear to be clear. The interpretation of the phenomenon was difficult. By the use of certain methods he said it might be possible to get a clearer view of the processes that contributed in bringing about the severe forms of anemia.

Dr. E. K. DUNHAM asked if Dr. Herter could not give some scheme by which the examination of the urine would throw some light upon the intestinal putrefaction.

Dr. T. STEWART HART asked if the anemias with an absence of hydrochloric acid from the stomach would not be helped by the administration of this acid.

Dr. LEWIS A. CONNER asked if the constant relation between the diminution of the quantity of the gas forming in the sugar media and evidences of intestinal putrefaction in urine were present.

Dr. HOUGHTON asked if in cases of pernicious anemia cures had been produced by washing out the bowels with so-called antiseptics.

Dr. C. A. Herter said that the up-waves and down-waves of pernicious anemia might be benefited by rest and diet and in a few months patients might leave the hospital and remain well for some time without any special attention being paid to intestinal conditions beyond those mentioned. In answer to Dr. Connor's questions he did not think that any such relation existed, but he did believe there was some relation between the diminution of the amount of gas production and the production of mercaptans. All cases showing mercaptans indicated to him that the individual was very ill. In answer to Dr. Hart's question he said that the presence of hydrochloric acid influenced the putrefactive changes a great deal; the anaërobes did not get along well in neutral or acid media, but thrived well under a moderately alkaline media. Some diarrheas were, no doubt, due to putrefactive products. If indican was present in excessive amounts diarrhea followed; when large quantities were present it was impossible to have large and well-formed stools. The removal of the putrefactive produces led to a diminution in the absorption and a falling in the amount of ethereal sulphates and other evidences of putrefaction in the urine.

Election of Officers.— *Chairman*, Dr. Warren Coleman; *Secretary*, Dr. E. E. Smith.

JOINT MEETING OF THE CHICAGO SURGICAL AND MEDICAL SOCIETIES.

AT the meeting held February 28 Dr. J. M. T. FINNEY of Baltimore, Md., read a paper entitled "Post-Operative Intestinal Obstruction." After referring at length to the literature of the subject, and detailing twenty-six cases, that had occurred in the practice of the author, the following conclusions were drawn: (1) Broca's classification into early and late varieties simplified the diagnosis. In the former class, which so frequently was associated with peritonitis, the differential diagnosis as to variety was always difficult and often impossible. In the latter, which was composed almost exclusively of the mechanical forms, it was unusually easy. (2) Adhesions were the chief factor to be reckoned with in an attempt to prevent the occurrence of post-operative ileus, and efforts directed toward this end were likely to be productive of the best results. (3) That drainage exercised a marked influence in the production of adhesions could not be denied. (4) Prompt operation was indicated in every case after palliative measures had been given a fair trial and had failed. The character of the operation depended upon the nature of the obstruction and the condition of the patient. (5) The prognosis was unfavorably influenced by the presence of infection. In its absence it was excellent. Dr. JOHN B. MURPHY defined ileus as a train of symptoms consisting of pain in the abdomen; nausea and vomiting; meteorismus, and coprostasis. Using this as a guide, he subdivided ileus into adynamic ileus, dynamic ileus, and mechanical ileus. He discussed at length the different forms of ileus. One of the first causes of adynamic ileus was strangulation of the omentum. The colic which occurred with hepatic calculus was difficult to differentiate from mechanical obstruction, because there was pain, nausea, and vomiting, absence of peristalsis, with distention of the bowel coming on as the result of the paralytic condition; also coprostasis while the pain was severe. One of the very difficult conditions to diagnose differentially was the impaction of stone in the cystic duct. Gastric tetany was another condition mistaken for intestinal obstruction. Peritoneal trauma was the cause of paralytic ileus. The embolic type of paralytic ileus was due to two causes —interference with the nerve supply, and ischemia. Temperature was never a primary symptom in mechanical ileus. He had ceased to place any particular value on the differential diagnosis from the number of leucocytes. Dr. ARTHUR DEAN BEVAN said that strangulation ileus was best studied from the standpoint of a strangulated hernia. It was a form of ileus which came on as a strangulated hernia did, with sudden onset, shock, pain, obstruction of the bowel, vomiting, with, later, tympany, and, if unrelieved, peritonitis usually occurred, followed by death. At the beginning it was free from temperature. The diagnosis could be made early if the surgeon had a clear mental picture of what strangulation ileus meant. He discussed the character of the operation in these cases, and mentioned the conditions found as the cause of mechanical ileus when the abdomen was opened. Meckel's diverticulum was the cause of probably more than five per cent. of the cases of intestinal obstruction. A long appendix, or adhesions to a tube, might cause obstruction. A most common cause was volvulus. He recently saw a case of volvulus of the entire transverse colon which caused obstruction. The proper treatment of a case of strangulated ileus was immediate operation. Patients with mechanical ileus died because an early diagnosis was not made, because early operation was not done, but in whom early diagnosis and early operation would have saved life. Dr. WILLIAM E.

Schroeder mentioned the classification of Schlange, who considers obturation ileus as including compression from without, strictures, both begin and malignant tumors in the lumen of the intestine, intussusception, and the usual obturation forms, namely, from gallstones, enteroliths, foreign bodies, and fecal masses. The nature of the obstruction consisted in the simple closure of the lumen of the intestine, either primarily from within or through compression from without. After discussing the symptoms of the acute forms of obturation ileus, also the diagnosis, he said that enterostomy was of especial value in relieving the intestine of its poisonous contents and because of the simplicity of the operation. A radical operation might follow at some future time when the patient was in better condition. In strangulation ileus it was necessary to relieve the strangulated intestine and save it from gangrene, or to resect the gangrenous portion. Cases of ileus came into the hands of surgeons too late. Many general practitioners waited for fecal vomiting before they transferred their cases to the surgeons. Dr. M. L. Harris discussed the abuse of cathartics in obstruction of the bowels. He mentioned cases illustrating all the varieties of intestinal obstruction, and summarized by saying that cathartics should never be given to a patient suffering of an acute abdominal trouble until a diagnosis had been made, or if not an accurate diagnosis, at least until all of the conditions which might produce obstruction had been positively excluded, and it should be remembered that these patients were never sick because the bowels did not move, but the bowels did not move because they were sick. Dr. Fernand Henrotin said there were many cases in which catharsis was given when the diagnosis was not clear, where the symptoms were not typical, so as to render the making of an accurate diagnosis more easy, and in such the administration of a cathartic was permissible. He spoke of the value of enterostomy in cases of ileus, and of not stopping to do a radical operation in the advanced cases. Dr. Finney, in closing, said that surgeons were agreed that cathartics had a limited place, but their administration should not be overdone.

San Francisco County Medical Society.

At the regular monthly meeting of this society, held February 13, 1906, Dr. Simon Baruch of New York City read by invitation a paper on "The Rôle of Hydrotherapy in Chronic Diseases." He said that at no period in its history had the medical profession been menaced by empirics as it was at the present time. He referred to the "nature" physicians (Naturärzte) who had made such encroachments upon the regular profession that the universities had been constrained to add the teaching of physical therapeutics, especially of hydrotherapy, to the medical curriculum. It was only in this way, the speaker said, that the young physician could be fortified to meet the attacks of the quacks who besieged their drug-weary patient with the bright promise of nature's beneficial methods. The board briefly reviewed the physiological estimate of the action of cold and heat upon the vast network of blood-vessels and nerves of the skin, and insisted that inasmuch as the latter were the vast outlying portions of the central nervous and circulatory systems powerful effects upon arterial supply, blood pressure, and metabolism must ensue when cold and hot water was applied judiciously in accordance with the capacity of the patient to respond. The speaker expressed his gratification from observing the great interest his address of two years ago had aroused on the Coast, as was testified (1) by his discovery of the most complete hydriatic equipment at Paso Robles; (2) a request for advice from Dr. Stocking of the Agnew State Hospital, how to spend an appropriation of $10,000 for a hydrotherapeutic equipment; (3) an invitation to meet the architect, visiting staff, and building committee of the German Hospital for council on the best mode of constructing a hydriatic department in the new hospital, and (4) the invitation to address this great society on hydrotherapy. Such incidents had made his work a labor of love. From an abundant material, containing failures as well as successes, Dr. Baruch offered illustrations of clinical results; one from his hydriatic clinic, of sciatica of two years' standing, which had resisted all treatment, including a stay at Mt. Clemens, and the routine douche treatment, for which the patient had been referred to by the Vanderbilt Clinic during his absence. This case was entirely cured by a method of bathing in water at 108° and subsequent packs, continued for two weeks. He also referred to a case in his hospital service of supposed gastric ulcer, for which a gastrojejunostomy had been unsuccessfully done and which he diagnosticated as a gastric neurosis and which was entirely restored by a graduated system of cold procedures. He cited the statements of Erb, Senator, Krafft-Ebing, Collins, and Draper in favor of hydrotherapy, and the fact that in his hydriatic clinic the number of treatments had increased from 2,000 in 1906 to 10,000 in 1904, the cases having been referred by most of the hospital outdoor departments and college clinics in New York. In conclusion, he made an earnest appeal for the instruction in hydrotherapy, and stated that he had been requested to deliver a course of lectures in hydrotherapy in the College of Physicians and Surgeons, a happy augury that the present unfamiliarity of medical men with the rationale and technique of hydrotherapy might cease to be a reproach in the future. The paper was discussed by Drs. Sanderson and Parsigan, who cited cases favorably influenced by hydrotherapy, and Drs. Rosenstirn and Evans, who approved of the idea that hydrotherapy be taught in the undergraduate schools and to hospital staffs and nurses. Dr. Power thought that the curriculum was already overcrowded. Dr. Baruch closed the discussion. He replied that if the present teaching of the inert and obsolete remedies were abandoned, the course of materia medica might well be abbreviated, and the now wasted time devoted to teaching massage, hydrotherapy, etc. He said that ten years ago the late Gaillard Thomas proposed to the then dean of the faculty of the College of Physicians and Surgeons of New York to add hydrotherapy. It was not done because the curriculum was overcrowded. The present dean, however, recognized the importance of teaching the students something besides the use of drugs.

The Treatment of Cerebrospinal Meningitis.—F. E. H. Maerker, having repeatedly observed the beneficial effects of the hot bath in the treatment of myelitis, locomotor ataxia, and other spinal affections, it occurred to him to make use of it in meningitis. The first effect of the immersion of the body in the hot water bath was a shock to the nervous system, caused by the impact of the water upon the body. The surface is first blanched, but soon becomes pink, due to the reaction. The effect of the bath upon the heart is that of a powerful tonic. The cardiac action becomes stronger, and the force of the contractions increased. The lost tone of the vasomotors is restored. The current of fluid is increased, for the heart, in order to act well, must meet with proper resistance. The cellular elements of the blood are increased, as well as the hemoglobin. The demonstration of an increase in leucocytes is an important factor. Depth of respiration, which is increased, is favorable to the restoration of the relative percentage of absorbed O and exhaled CO_2. Elimination of toxins takes place, as is shown in the amelioration or complete subsidence of symptoms. The writer describes several cases in which the results of this treatment have been most happy.—*The Ohio State Medical Journal.*

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery.	Montgomery	May 1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	July 2.
Arkansas*	J. P. Runyan, Little Rock	Little Rock	July 10.
California*	Chas L. Tisdale, 530 California Street, San Francisco	San Francisco	April 17.
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July 3.
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July 10
Delaware	P. W. Tomlinson, Wilmington	Dover	June 19.
Dis. of Col'bia	W. C. Woodward, Washington	Washington	July 12.
Florida*	D. Fernandez, Jacksonville	Gainesville. Atlanta.	April 16.
Georgia.	E. R. Anthony, Griffin	Augusta.	
Idaho	J. L Conant, Jr., Genesee	Pocatello	October 2.
Illinois	J. A Egan, Springfield	Chicago	April 18.
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis.	May 22.
Iowa	J. F. Kennedy, Des Moines	Des Moines	June —
Kansas	T. E. Raines, Concordia	Topeka	May 1
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April 24.
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	May 3.
Maine	Wm. J. Maybury, Saco	Augusta	July 10.
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 20.
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May 8.
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June 12.
Minnesota	O. E. Linjer, 24 South Fourth Street Minneapolis	St. Paul	June 5.
Mississippi	J. F. Hunter, Jackson	Jackson	May 8
Missouri	J. A. B. Adcock, Warrensburg	St. Louis. Kansas City	April 10.
Montana*	Wm. C. Riddell, Helena	Helena	October 2.
Nebraska	Geo. H. Brash, Beatrice	Lincoln	May 29.
Nevada	S. L. Lee, Carson City	Carson City	May 7.
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July 6.
New Jersey	E. L. B. Godfrey, Camden	Trenton	June 19
New Mexico	B. D. Black, Las Vegas	Santa Fe	June 4.
New York.	C. F. Wheelock Univ of State of New York, Albany	New York. Albany, Syracuse, Buffalo,	May 22.
N. Carolina*	Geo. W Pressly, Charlotte	Coarlotte	May 23
N Dakota	H. M. Wheeler, Grand Forks	Grand Forks.	July 3
Ohio	Geo. H. Matson, Columbus	Cincinnati, Cleveland, Columbus,	June 12.
Oklahoma	J. W. Baker, Enid	Guthrie	June 27.
Oregon*	B. E. Miller, Portland	Portland	May 10.
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburg,	June 19.
Rhode Island	G. T. Swarts, Providence	Providence	July 5.
S. Carolina	W. M. Lester, Columbia	Columbia	June 12.
S. Dakota	H. E. McNutt, Aberdeen	Watertown.	July 11.
Tennessee*	T. J. Happel, Trenton	Memphis, Nasbville, Knoxville,	May 2.
Texas	T. T. Jackson, San Antonia	Dallas	June 12
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July 2.
Vermont	W. Scott Nay, Underhill	Burlington	July 10.
Virginia	R. S. Martin, Stuart	Richmond	June 10.
Washington*	C. W Scarples, Seattle	Tacoma	July 3
W. Virginia*	H. A Barbee, Point Pleasant	Charleston	July 10.
Wisconsin	J V. Stevens, Jefferson	Madison	July 10.
Wyoming.	S. B. Miller, Laramie	Cheyenne.	June 6.

* No reciprocity recognized by these States

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State

Michigan reciprocates with Wisconsin, Indiana, Iowa, Kansas, Nebraska, Maryland, Minnesota, Wyoming, Missouri, Nevada, South Carolina, Maine, Vermont, Georgia, Illinois, Ohio, New Jersey and North Dakota.

Vermont reciprocates with Maine, Maryland, and New Jersey.

Maine reciprocates with Vermont, New Jersey, Maryland, South Carolina, Georgia, Texas, Ohio, Iowa, Indiana, Illinois, Missouri, Wyoming, South Dakota, Minnesota, Wisconsin, Michigan, and District of Columbia.

Kansas—Reciprocal relations have been established by Kansas with the following States: Missouri, Illinois, Indiana, Maryland, Michigan, Wisconsin, Iowa, Nebraska, Minnesota, New Jersey, Wyoming, and South Carolina.

New York.—In the annual report of the State Board of Medical Examiners it is stated that the total number of (regular) candidates examined from July 31, 1904, to August 1, 1905, appearing for the full license was 421; of these 331 passed and 90 were rejected. In the primary medical examinations there were 354 candidates, of whom 338 passed and 16 failed. In the final subject only there were 318 candidates, and 313 passed, and 5 were rejected. The total number of candidates for license was 810, against 778 last year, 756 in 1903, and 685 in 1902. The total number of examined candidates who appeared before all three boards was 1,195. Sixteen of these received certificates "with honor." The rejections per topic for the year were as follows: Anatomy, 47; physiology and hygiene, 50; chemistry, 42; surgery, 28; obstetrics, 48; pathology and diagnosis, 28; therapeutics, practice, and materia medica, 33. Average rejections per topic, 30.4.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending April 7, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	386	185
Diphtheria	324	39
Measles	1809	72
Scarlet Fever	229	8
Smallpox	2	
Varicella	136	
Typhoid Fever	29	6
Whooping Cough	36	4
Cerebrospinal Meningitis	35	27
Malarial Fever		
Totals	2,986	341

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending April 7, 1906.

SMALLPOX—UNITED STATES

		CASES.	DEATHS.
California, Los Angeles	Mar. 17–24	6	..
Florida, Jacksonville	Mar. 24–31	2	..
Indiana, Indianapolis	Mar 18–April 1	6	.
Kansas, General	Feb. 1–28	233	.
Kansas, Leavenworth	Mar. 1–31	5	.
Louisiana, New Orleans	Mar 24–31	0	
Maryland, Baltimore	Mar. 24–31	1	.
Massachusetts, Boston	Mar. 24–31	3	..
Michigan, Ann Arbor	Mar 24–31	1	
Missouri, St Louis	Mar. 24–31	5	
Nebraska, Omaha	Mar. 17–24	1	.
New York, New York	Mar. 24–31	2	
North Dakota, Grand Forks Co'ty	Feb. 1–28	1	
McHenry County	Feb. 1–28	1	
Ohio, Cincinnati	Mar. 23–30	3	..
South Carolina, Greenville	Mar. 17–24	2	..
Tennessee, Memphis	Mar 24–31	8	..
Washington, Spokane	Mar. 17–24	1	Imported
West Virginia, Wheeling	Mar. 24–31	2	.
Wisconsin, Appleton	Mar. 24–31	3	..

SMALLPOX—INSULAR

Philippine Islands, Manila	Feb 10–24	2	1

SMALLPOX—FOREIGN

Africa, Cape Town	Feb 17–24	19	..
Brazil, Pernambuco	Feb. 14–28	.	23
Canada, Toronto	Mar. 17–24	2	..
Cape Verde Islands	Mar. 20		Present
Chile, Iquique	Feb. 17–24	6	2
China, Shanghai	Feb. 17–24	..	2
France, Paris	Mar. 10–17	13	..
Gibraltar	Mar. 11–18	10	..
Great Britain, Bristol	Mar. 17–24	1	..
Greece, Athens	Mar. 8–15	..	1
Honduras, Puerto Cortez	Mar. 17–24		Present
San Pedro	Mar. 17–24	..	Present
India, Bombay	Feb. 13–Mar. 6	..	24
Calcutta	Feb. 17–24	173	173
Madras	Feb. 24–Mar. 2	..	50
Rangoon	Feb. 17–24		77
Italy, General	Mar. 10–17	9	..
Japan, Formosa	Feb. 1–28	12	..
Yamaguchi Ken	Mar. 6	27	4
Russia, Moscow	Mar. 3–10	7	3
Odessa	Mar. 3–17	24	2
St. Petersburg	Feb. 24–Mar. 10	4	..
Spain, Barcelona	Mar. 10–20	..	7
Seville	Feb. 1–28	..	12
Turkey, Constantinople	Feb. 25–Mar. 11	..	2

YELLOW FEVER

Mexico, Merida	Mar. 11–17	1	1
Tehuantepec	Mar. 11–17	1	..

CHOLERA—INSULAR

Philippine Islands, Manila	Feb. 10–24	11	10
Provinces	Feb. 10–24	371	293

CHOLERA—FOREIGN

India, Calcutta	Feb. 17–24	..	65
Rangoon	Feb. 17–24	..	2

PLAGUE—FOREIGN

Australia, Premantle	Jan. 6–Feb. 19	5	2
Perth	Jan. 6–12	3	..
India, General	Feb. 17–24	9717	8312
Bombay	Feb. 13–Mar. 6	..	484
Calcutta	Feb. 17–24	..	31
Madras	Feb. 24–Mar. 2	..	5
Rangoon	Feb. 17–24	..	19
Japan, Formosa	Feb. 1–28	94	6
Mauritius	Jan. 25–Feb. 8	3	1

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69. No. 16. Whole No. 1850. | New York, April 21, 1906. | $5.00 Per Annum. Single Copies, 10c.

Original Articles.

THE CONDITION OF THE AIR OF THE NEW YORK RAPID TRANSIT SUBWAY.*

By GEORGE A. SOPER, Ph.D.,

NEW YORK.

CONSULTING SANITARY ENGINEER.

It is my intention to-night, with the courteous permission of the Board of Rapid Transit Commissioners, to bring to your attention some of the most interesting and significant results of a six months' investigation of the condition of the air of the New York subway.

The Board of Rapid Transit Commissioners is, as you know, the body which has had official charge of laying out the road, building it and supervising its operation. Under their supervision several hundred million dollars worth of additional subways are yet to be built.

The main object of the investigation was to determine whether any harmful matters or conditions existed in the subway to such an extent as to make the air in any degree a menace to the public health. There were other objects and other problems studied, but the only matters to which I will refer here relate to the condition of the air from a strictly sanitary standpoint.

The methods employed depended largely on the use of chemical and bacteriological analyses. I was not authorized to examine into the health of the employees, although to have done so might have proved an important feature of the work.

The investigation began in July and ended in December. There was thus afforded an opportunity for observing the conditions during different seasons of the year. The average number of my assistants was ten. I take pleasure in saying that it is largely to their ability that the following results have been obtained.

For about a year, now, the overheating of the subway has been a matter of so much public interest that our attention may well be directed to the question of temperature first. The overheating first became noticeable in the middle of March, 1905. At this time, according to the records of the preceding year, the temperature inside and outside of the subway should have been about the same, but it was warmer. As summer came on, the subway air remained warmer than the outside air when it should have been cooler.

Before the subway was opened, its temperature during its hottest week was 18.3° F. cooler than the air in the streets. After it was opened, its average temperature during its hottest week was 5.2° warmer than the outside air. The average of the daily temperatures noted in the subway during this week was 83.4°. The maximum temperature observed in the subway during this hottest week was 88.2°. In the street it was the same at the same time.

The coldest temperature observed by me in the subway during the present winter was 30°. This occurred at the Canal Street station. It was 16° warmer here than in the streets.

So far the difference between the temperature of the subway and streets has been much less in summer than in winter. In July and August, 1905, the average temperature of the subway was 5.6° higher than that of the streets, but in the first part of November the difference was over 15°.

In the middle of November, the routine work of collecting and interpreting the records of temperature was turned over by me to the engineers of the road and I have no knowledge of the general averages since.

In view of the fact that European subways appear to become warmer year by year, the increasing excess of temperature of our subway over the outside air, as noted by me up to last November, leads me to look forward to the possibilities of the coming summer with peculiar interest.

The cause and remedy for the overheating of the subway are being made the subject of study by

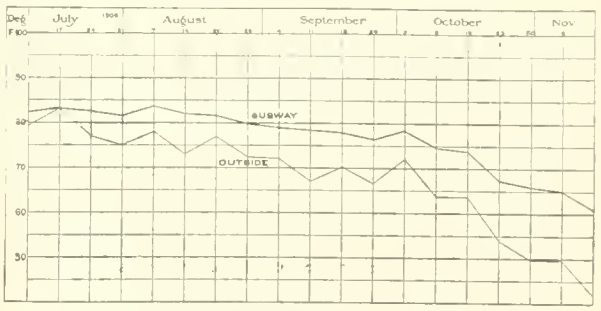

FIG 1.—Relative average temperatures of the air in the streets and subway.

the Chief Engineer of the Board of Rapid Transit Commissioners, Mr. George S. Rice. If his work is successful, and we all trust that it may be so, we may have a cooler, rather than a warmer, road next summer. In consequence of the comprehensive work which I am informed Mr. Rice is carrying on in this direction, it seems inappropriate for me to discuss this phase of the subject further to-night.

Sanitary considerations do not lead me to regard the heat of the subway, as shown by last summer's figures, with alarm. It is difficult to see how the higher temperatures which have occurred at this season could alone produce injurious effects upon health. But if the heat is not unhealthy, it is at least disagreeable, and if it proves to be a practical undertaking, the subway

*Paper presented before the New York Academy of Medicine on March 15, 1906.

should by all means be kept cool. In hot weather the subway is most uncomfortable in the morning and at night. At these times, the air does not cool off as does the air in the streets. In the most tightly closed portions of the subway the temperature remains nearly constant through the twenty-four hours. Some stations are always warmer and more even in temperature than others. Express stations generally become overheated and cool more rapidly than local stations. As a rule, those places which are most open to the outside air respond most rapidly to changes of temperature in the streets and have, on the whole, the lowest average temperatures.

The conditions in winter, when strong draughts of cold air enter the stations, seem far more apt to prove injurious to health than the conditions in summer. In the winter the temperature of the air near the entrance at some of the stations changes so rapidly that the most sensitive recording thermometers are far too slow to record them.

By means of a very delicate, ventilated thermometer, made especially for the purpose, some idea of the rapid rises and falls was obtained. In one case, when the subway air was 59.5 a drop of 12.5° was noted in less than one minute and a half. In another case, a change of 7° occurred in one minute. Still greater and more rapid variations than these undoubtedly took place, but the mercury in even this very sensitive thermometer was too slow to show them.

Leaving now the question of temperature, we may direct our attention for a moment to the subject of humidity. During the period covered by my investigation, the subway air has been practically as dry as the air of sheltered places in the streets. The dew point, that is, the temperature at which moisture begins to condense from the atmosphere has been, on the whole, little higher inside than outside, but the relative humidity, or degree of saturation, has been lower in the subway than in the streets. In other words, there has really been a little greater weight of water in the air of the subway than in that of the streets, but, because of the higher temperature, the subway air has not been so nearly saturated.

The average relative humidity of the subway for July and August, 1905, was 57.5 per cent. and

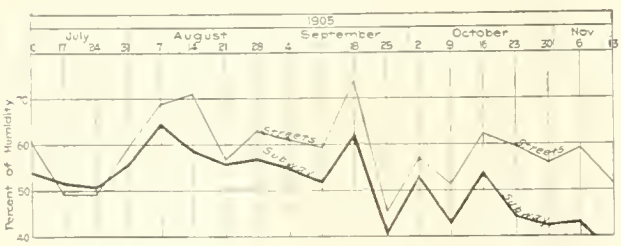

FIG. 2.—Relative humidity of the air of the streets and subway.

of the outside air 60.6 per cent. The greatest average humidity for any week in the subway happened to occur during the week which was also the hottest. The average humidity for this period was 64.4 per cent. As a rule, changes in the dew point and relative humidity in the subway followed similar changes out of doors. At no time has there been a pronounced fog or mist. A fine haze has not been uncommon. This has been most noticeable where shafts of sunlight have penetrated the atmosphere. This haze has been due to dust, not to moisture.

Chemical analyses were made of the air to determine, first, whether there was a sufficiency of oxygen present and second, to what extent the air was vitiated by the products of respiration. All the air examined chemically was collected in special receptacles made for the purpose. It was usually analyzed on the day on which it was collected, or the day after. Samples were taken at stations, and between stations, and at different times. For purposes of comparison, samples of air were usually collected in the streets whenever samples were taken in the subway.

It is interesting to note that my results resemble a similar, though smaller, series of analyses made by Professor C. F. Chandler of Columbia University and presented to the City Department of Health a few months after the subway was opened for travel. The conclusions which Dr. Chandler drew from his analyses and the opinions which I have formed from my investigation are similar so far as purely chemical considerations are concerned.

About eighty oxygen determinations were made for the Board of Rapid Transit Commissioners. The results were remarkably uniform. The difference between the greatest amount found out of doors and the smallest amount found in the subway was .7 per cent. The average for the subway was 20.6 per cent. by volume, and for the outside air 20.71 per cent.

One of the most instructive lines of investigation was that involving determinations of carbon dioxide. It may be well to inform those persons, if any be present, who do not happen to remember the exact significance of carbon dioxide, that analyses of air for this product of respiration are useful because they afford the best index which science has yet discovered of the presence of other and perhaps injurious matters. All air contains carbon dioxide, but the amount in the free, outside atmosphere is small and comparatively constant as compared to the amount generally found in enclosed places occupied by human beings. The difference between the amount found in the subway air and in the air of the streets was an indication of the relative purity. By comparing the amount of carbon dioxide found at different times and places, it was possible to obtain a knowledge of many important facts relating to the ventilation.

The number of these analyses exceeded 2,000. They were probably accurate to about 3-100 of one volume in 10,000 volumes of air. It was necessary to make the carbon dioxide determinations with great precision because the amount was very small. So far as I am aware, this is the largest number of carbon dioxide determinations of equal delicacy ever made in connection with a practical problem of ventilation. But large as the number was, and representing, as it did, the state of the air in a great number of places, at different times and under various conditions, the data obtained are not more than sufficient to give a fairly correct idea of the information which it was desired to obtain. The results obtained confirmed the conclusions drawn from the oxygen determinations already alluded to. At no time and at no place was the amount of carbon dioxide large. The greatest amount was 8.89 volumes in 10,000 volumes of air. This was in the tunnel under Park Avenue, near the Grand Central Station, on December 27, 1905, at 6:02 P.M.

It would be interesting, if time permitted, to consider some of the many facts which a careful

study of the results of the carbon dioxide analyses has yielded. We should see that the amount fluctuates in the subway at different hours of the day and night, and that even in the streets, there is a daily, and perhaps seasonal, variation in the amount of carbon dioxide present.

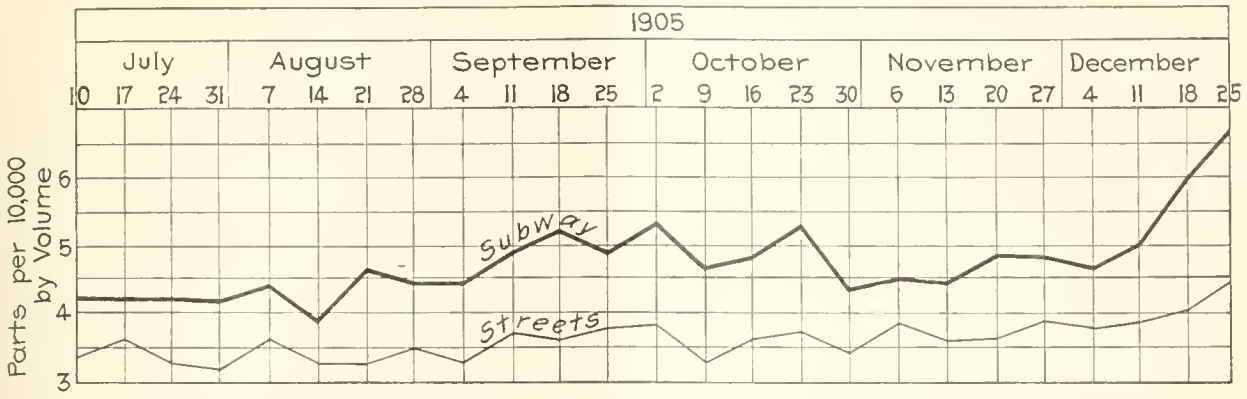

FIG. 3.—Carbon dioxide present in the air of the streets and subway.

It may be a surprise to many to know that when the trains are moving the air circulates not only in and out of the subway but from station to station with remarkable freedom, and that there is but little more carbon dioxide in the air between the stations than at the stations themselves. So great was the ventilation caused by the movement of the trains, especially the express trains, that the effects produced by large centrifugal fans and other ventilating devices experimentally employed to assist the ventilation were entirely hidden.

To physicians it will be easy to understand how the subway is ventilated. The ventilation of the subway resembles the ventilation of the lungs. Both are due to currents of air passing alternately inward and outward through certain channels as a result of changes of pressure due to the expansion and contraction of the enclosed space. It is true that in one case the size of the space is increased and reduced through the movement of its walls and in the other through what is termed a piston action, but in other respects the analogy is close. In the normal amount of air which passes out on the approach of a local train and is replaced by an indraught of fresh air as the train draws away, we have what physiologists call the tidal air. In the additional quantity which is drawn in by the express trains we have the complimental air and in the excess which is forced out by the express trains, the reserve, or supplemental air. These three, the tidal complimental, and supplemental we may term the respiratory capacity of the subway. Finally there is an amount of air which remains in the subway and is not immediately forced into the streets by any combination of local and express trains; this we may call the residual air.

As with the human body, a number of considerations control the capacity and extent of ventilation. Chief among these are the size and shape of the different parts of the enclosure and passages. The impurities are removed and fresh air is supplied to the points where it is needed by diffusion.

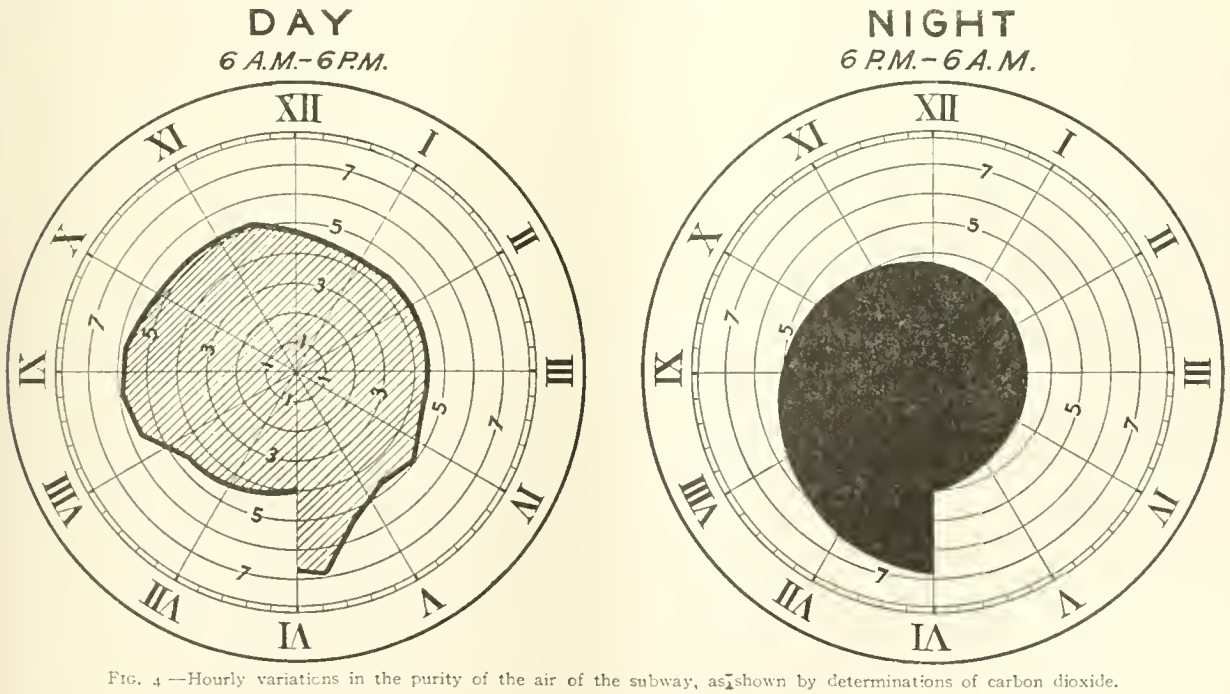

FIG. 4.—Hourly variations in the purity of the air of the subway, as shown by determinations of carbon dioxide.

Leaving now the tracing of this curious analogy between the breathing of the subway and the breathing of a human being, we will turn to the results of bacterial analyses. Studies were made of the numbers of bacteria in the air of the subway

and the air of the streets. The bacteria were collected by allowing them to settle from the air, as dust would settle, upon circular culture dishes and by filtering them from the air by means of a pump and sand filters. On being taken to the

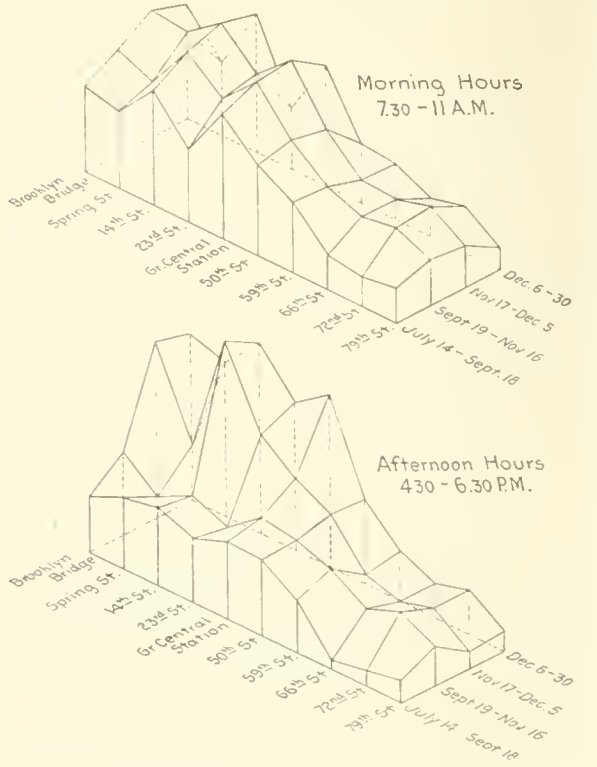

FIG. 5.—Varying degrees of purity of the subway air at different stations and at different seasons, as shown by determinations of carbon dioxide.

laboratory, the bacteria were incubated in agar at the temperature of the body for forty-eight hours. The colonies of bacteria which became visible in this time were then counted, growths of molds being considered separately. These methods proved admirably adapted to the large number of observations desired and gave a fair idea of some of the most important things to be known about the subway. About 3,000 bacterial analyses were made in all.

There were, according to averages of the results, slightly more than twice as many bacteria found in the air of the streets as in the air of the subway. During, and immediately after, rain, there were, as might be expected, fewer bacteria outside than inside, but the number increased outside a day or so after rain and was greatly influenced by the force of the wind.

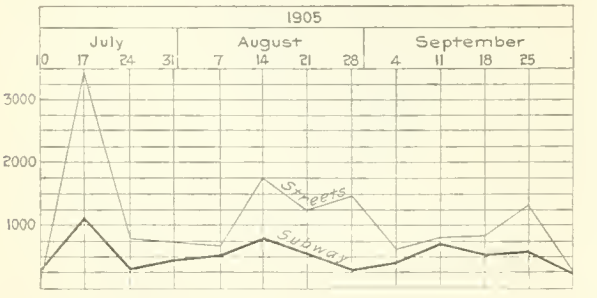

FIG. 6.—Number of bacteria, determined by the plate method, in the air of the streets and subway.

The grand average of all the results obtained with plate exposures was 500 bacteria for the subway against 1,157 for the streets. Owing to the fact that the dishes had an area of 1-15 of a square foot, these figures represent the number of bacteria which settled upon a square foot in a minute and were subsequently counted. The average number of bacteria found by filtering the air through sand filters was 3,200 per cubic meter in the subway and 6,500 in the air of the streets. It is interesting to note that the two methods agreed closely in the relation which they showed between the numbers in subway air and street air.

An important question, and one which physicians may, with special appropriateness be invited to consider, relates to the origin of the bacteria found in the subway. Are they derived chiefly from the passengers or from other sources, and what proportion of the total number are possibly pathogenic?

Little attempt could be made in the Rapid Transit investigation to identify the different kinds of bacteria and molds. To have undertaken to do so, without a great deal more time and a special corps of assistants, could have led to nothing but disappointment. By carefully collating and studying the notes which were made when the bacteria were collected for numerical analyses, and giving due weight to other considerations, I have arrived at the provisional conclusion that most of the bacteria in the subway probably came from the streets.

My principal reasons for holding this view are as follows: The numbers of bacteria in the air of the subway varied with the numbers in the air of the streets. The bacteria were more numerous in the subway near the stairways than at the ends of the stations. Dirt containing large numbers of bacteria was often seen to be carried down the stairways into the subway by the inrushing currents of air. This dirt contained far more bacteria than the dust which was of subway origin. The bacteria were more numerous on the side of the stations into which the wind blew from the street than on the opposite side. There were more bacteria at the ends of the station platforms where the trains departed than at the ends where the trains arrived.

But, although it seems likely from these reasons that most of the bacteria in the air of the subway are derived from the streets, there is excellent ground for concluding that some, and among them the most objectionable kinds, are due to the presence of people.

Aside from the danger of infection from exanthematous diseases, concerning whose mode of transmission the science of bacteriology throws but little light, it is certain that when people are closely crowded together large numbers of dangerous bacteria are transmitted from person to person in speaking, coughing, and sneezing. Against the dissemination of bacteria by these acts no restraint seems practicable. People cough and sneeze in one anothers' faces at short range and probably will do so until that distant day when high ideals of personal hygiene become a common possession. Here lies, undoubtedly, the greatest danger of subway travel, so far as bacterial diseases are concerned.

But it is by no means a danger peculiar to the subway. It exists wherever people are willing to submit to that peculiarly dense form of herding which has become a feature of city transportation.

A nearly equally common, and wholly preventable, source of dangerous pollution lies in the spitting habit. In my reports to the Rapid Transit Commissioners strong objection has been

made to the lack of enforcement of the city ordinance against spitting. This topic is so closely related to the larger subject of the kind of care which is, in my judgment, necessary for a proper sanitary maintenance of the subway, that I shall deal with it in connection with this broader question.

In my final report to the Rapid Transit Board, dated February 1, 1906, the following remarks were made: "The sanitary administration of the subway has been the most unsatisfactory feature brought out in this investigation. Inspection has shown the existence of conditions which call for immediate improvement. Stations and toilet rooms have not been kept in a clean and orderly condition. It is difficult to criticise too severely the filthy condition of the roadbed at the stations or the neglected condition of ventilation and cleanliness in some of the toilet rooms. Unless these conditions are corrected, they may very properly be regarded as suitable subjects for the attention of the Board of Health.

"The ballast at many of the stations has served as the receptacle for unlimited quantities of filth of the kind usually consigned to cuspidores. In the mater of expectoration, the guards and other employees of the operating company, who should be the sanitary guardians of the subway, are the chief offenders. It seems unnecessary to refer in further detail to this subject. The disgusting and insanitary conditions to which I refer are sufficiently evident to every passenger. I recommend that the ordinances of the Board of Health relating to spitting be enforced in the subway and that the roadbed at the stations be made clean and kept clean."

In my preliminary report to the Board, submitted October 19, 1905, I recommended that the ballast of the roadbed should be renewed at the stations, or better, replaced with a smooth, concrete surface which could easily be kept clean. The suggestions made by the Advisory Board of the Board of Health with respect to the cleaning and care of the road were strongly recommended for adoption.

A copy of these recommendations for the care of the subway was appended to my preliminary report. They seem so excellent and practical that I will repeat them here.

"The Stations.—In sweeping the station platforms and stairs of the subway, properly moistened sawdust and hair brooms should always be used. Dry sweeping should never be permitted. Suitable receptacles should be provided for the fresh and for the used sawdust and the latter should be carried off every day. The chief cleaning of the stations should be at night, immediately after the theater crowds have gone home. At this time, the stairs, station platforms and closets should not only be swept, but also thoroughly and properly mopped. They should all be scrubbed once a week at night. The sinks, urinals and closets should be cleaned with utensils kept for that purpose, at least twice daily, and afterward treated with efficient disinfectants. Dusting of the stations should be done only with moist cloths, which should be properly cleansed after each using. The use of feather dusters should not be permitted either in the stations or cars. At least four spittoons, raised from the platform and containing sawdust, should be placed in each station. These should be cleaned and disinfected twice daily. Suitable placards forbidding spitting on the stairs and platforms should be hung in conspicuous places in every station. One receptacle for papers, plainly labeled, should be placed in each station and should be emptied daily. The porters and others in charge of the cleaning of the subway stations should receive precise instructions as to their duties, and should be obliged to follow, in every particular, the methods laid down for cleaning and disinfection.

"The Cars.—The cars at the cleaning yards after sweeping should be closed, and after not less than three hours, should be cleared of the dust which has settled. This should be removed from the seats and woodwork by dry or moist cloths, frequently renewed, and from the floor by large moistened mops repeatedly rinsed in fresh water. Thorough scrubbing of the floors of the cars should be done at intervals to be determined by experience.

"A Sanitary Supervision.—There should be a special officer of the Interborough Company, expert in modern sanitation, whose duties should be not only to advise as to the methods for maintaining proper sanitary conditions in the subway and its cars, but who should be held responsible, also, for the proper execution of the methods adopted.

"The Roadbed.—It is recommended that the roadbed in front of the platforms between and at the sides of the rails should be made smooth by asphalt or some other material which can be properly cleaned. The remainder of the roadbed in the underground portions of the road should be treated with some non-inflammable material which will catch and hold the dust which may settle upon it, so that it will not be driven into the air by the passage of trains."

It is but just to say that the company which operates the subway under the supervision of the Rapid Transit Board does a good deal of work to keep the subway clean and orderly. My objection is that the work is not sufficiently well done.

Hair brooms and sawdust are used by the porters in brushing the platforms. But they are generally used in an unsuitable manner. As far as keeping the dust down is concerned, stiff brooms, without sawdust might almost as well be employed. The strong draughts are the most effective and constant agencies in keeping the platforms free of dust.

Warning signs have been erected against spitting. But no effort has been made, so far as I am aware, to have the employees of the company either call the attention of offending passengers to this warning or heed the ordinance themselves.

A contract was let to a so-called sanitary company for keeping the toilet rooms in a clean and proper condition. But this sanitary company has been allowed to violate its contract from the day the subway was thrown open to the public.

The stations have been flushed and cleaned with a hose at intervals. But these intervals have been so long that many of the employees at the stations have memories too short to remember them.

A trash gang has been employed to remove the pieces of paper and other débris from the track. But the smaller refuse, which is the most objectionable, is allowed to accumulate.

Probably the aggregate weight of dirt and rubbish removed from the stations and cars has amounted to many tons per month. But this amount could probably have been multiplied had the work been more systematically and intelligently done.

In short, as far as well cosidered, thorough methods of cleaning and sanitary care are con-

cerned, the operating company has been singularly neglectful.

It may be objected that the term "neglectful" is not a proper one to apply to this company, whose business, after all, is to carry the greatest number of people for the least amount of money. It would be curiously unlike most railroads if it gave more attention to sanitary refinements than was actually demanded of it. If anyone is inclined to make this objection, and say that the responsibility for the subway conditions should be placed elsewhere, I am quite willing to have the term "neglect" applied wherever it can be shown that it rightfully belongs.

The dust of the subway was made the subject of special study from chemical, physical, and biological standpoints. Chemical analyses of the dust showed that it contained 61.30 per cent. of iron, nearly all of which was in the metallic state. There were also 21.94 per cent. of organic matter, consisting of particles of animal and vegetable origin, 15.58 per cent. of silica and other matters insoluble in acid, and 1.18 per cent. of oil. The average of a considerable number of determina-

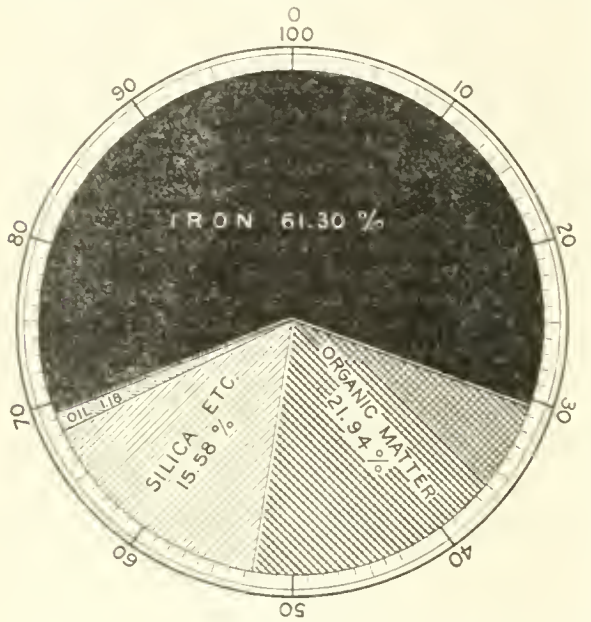

Fig. 7.—Composition of the subway dust, as determined by chemical analyses.

tions of the weight of dust suspended in the air was 61.6 milligrams per thousand cubic feet of air. The maximum weight was 204 milligrams. Twenty-three comparative tests were made to determine, with particular care, the weight of dust in the air of the subway and in that of the streets at the same time, and as near the same places as possible. These showed an excess in the subway over the outside air averaging 47 per cent. In eighteen cases, the weight of dust in the subway air over that in the air of the streets ranged from 11 to 800 per cent.

The origin of a large part of the subway dust seems fairly evident. Much of the organic matter and silica are probably carried in from the streets by the currents of air and the movements of passengers. Some is produced in the subway by the gradual wear and tear of wood and cement and other materials of construction, and imperceptible losses from such easily destructible matters as the clothing of the passengers. But all of the dust is not produced in this way. A considerable amount is pulverized metal, ground up by the operation of the trains.

It has been demonstrated that the metal in the air is chiefly cast iron derived from the grinding of the powerful brakes of the cars. It is a matter of official information that the loss in weight of the brake shoes, which are the principal wearing surfaces, has amounted to one ton per mile per month. In addition, the wheels themselves and the tracks are being constantly ground up, especially at the curves.

It must not be supposed that the great aggregate weight of metal which these figures indicate is wholly converted into dust and mingled with the subway air which is breathed by the average traveler. Many of the iron particles are too large and too heavy to be carried far, even by the strongest draughts of the moving trains. Many bits of smaller size, after being whirled about for a brief period, settle upon the oily tracks or fall into the voids in the broken stone ballast and are so retained. Only a portion of the finer particles find their way into the general atmosphere of the subway and are kept afloat by draughts.

At the same time, it is needless to point out to a body of physicians the significance which attaches to the presence of a large amount of finely divided metallic iron in the air. All text-books of hygiene, of pathology, and of medicine describe them under the terms of siderosis, pneumokoniosis, fibroid phthisis, and grinders' rot.

If any persons are inclined to believe that the amount of dust in the subway is too small to be injurious, I invite them to make a careful perusal of a recent address on "Clean Air," read by Prof. Prudden before the Practitioners' Society and published in the Medical Record, February 3, 1906.

I have advised the Board that the possibility that the metal particles in the air of the subway may produce injurious effects upon health should be thoroughly investigated.

There yet remains a single subject of general interest to refer to: The odors of the subway. No condition, excepting the heat, has caused as much personal discomfort as the odors. Yet a brief reference to them will suffice. Odors have been more or less present at all times and at all places in the subway. In some cases they have been so faint as hardly to be noticeable, while in others it has been possible to detect them on the streets over a hundred feet from the nearest opening. The odors have been most apparent during hot, damp weather, where the greatest crowding has occurred and in those parts of the subway which are most enclosed.

The cause of the most prominent odor has been the lubricating oil used on the trains. An exceedingly large quantity of this oil was used on the machinery during the first year of operation and was allowed to drip upon the ballast and ties of the roadbed.

The next principal cause of odor has been the broken stone ballast of the roadbed. This stone is trap rock which, like slate, gives off a characteristic odor when wet. On rainy days, and at those parts of the subway where the moist atmosphere has the freest access to the ballast, the peculiar, slaty odor of the stone is most pronounced.

A pungent and peculiarly unpleasant odor has been given off by a proprietary disinfectant used in the toilet rooms. Laboratory tests have shown that this compound has practically no germicidal or deodorizing properties. Its only claim for use seems to lie in its capacity to overpower other, and

possibly, less unpleasant odors. In my judgment, disinfectants and deodorants possessing an odor should rarely, if ever, be used in the subway.

Excepting in rare instances where the crowding has been excessive, and where certain employees have not been under as strict supervision as their defective sense of decency has required, the odors of the subway have not pointed to conditions directly dangerous to health.

If I were to summarize the findings and conclusions of my investigation into the narrowest possible form, I should say that I think the subway, as a whole, is sufficiently ventilated and free from conditions injurious to health, except as to the presence of metallic dust, lack of sanitary care, and conditions inseparable from overcrowding. The lack of sanitary care can, and probably will, be corrected. I do not know whether it will be necessary to do anything about the dust. If it is really dangerous, American ingenuity can certainly find a way to reduce it. I believe that investigations should proceed along the lines of doubt until no reasonable question exists concerning them.

I cannot close this brief account without expressing my sense of personal obligation to those who have assisted me in the investigation. To Professors Chandler, Prudden, Hallock, and Hiss, of Columbia University, I am indebted for valued counsel and facilities for work for which their single recompense has been my thanks. To my chief assistants, in the chemical analyses, Dr. F. J. Metzger; in the bacteriological work, Dr. C. B. Knapp, and in the meteorological studies, Messrs. Frost and Fox, I am indebted for peculiarly skillful, painstaking, and loyal service.

29 Broadway.

EXPLOSION OF A RADIUM TUBE.

By ROBERT ABBE, M.D.,
NEW YORK.

In December, 1905, I received from Hugo Lieber 50 milligrams of pure radium bromide of the strength 1,800,000, just imported from Stahmer, of Berlin, and had it transferred to a small glass tube 2½ centimeters long by 3 mm. wide, in which it was hermetically sealed after drying.

It was used daily for three months, being cleansed always by immersion in carbonic acid followed by alcohol, and always handled carefully with forceps.

On March 20, on removing it from a silver tube by a thread tied about it, it stuck in the opening of the tube and I pressed it lightly with the end of the metal forceps. Instantly it exploded with a loud report, the glass being shattered into numerous small fragments, and much of the radium was distributed against the inner lining of the tube. At the same instant I saw a cloud of pulverized radium come from the tube, as large as my hand, and rather rapidly fall to the carpet, a distance of one meter.

Laying the tube carefully on a clean sheet of paper, I made a chalk outline on the carpet within which I supposed the precious powder had fallen, though nothing of it was visible. In hopes of reclaiming it, I laid a large photographic Roentgen ray plate upon the carpet, believing it would make its impression through the double paper envelope. Only one small spot showed at the corner of the plate when developed. At night I tested the carpet with a piece of willemite, which glowed brightly at a spot some distance from the suspected area, and this spot I again tested with another photograph. The resulting plate is shown on the following page.

Every smallest grain of radium made its autograph on the plate, though only a few could be seen to glow in the dark, as they had sunk into the heavy carpet.

The atomic weight of radium is so great (342) that it had fallen within the small radius of 35 centimeters, being kept together by its heaviness. I carefully cut out the piece of carpet (after testing at a distance in all directions and satisfying myself that there was no more elsewhere) and put it and the tube in the hands of Professor Pegram, of Columbia University, to reclaim the radium, if possible.

After he had beaten it out of the carpet I again gave the photographic test and was gratified to find not an atom of radium left in it.

His careful recovery of my entire specimen is described in his own words and is worthy of record. He has again sealed it in a tube of the same size, into the end of which he fused a fine platinum wire to permit the stored-up positive electricity to discharge through it, on the theory that the negative current passes out through the glass with the beta rays. This had originally been urged upon me at first sealing by my friend Dr. Piffard, but was omitted. It may now be hoped the danger of recurrence and loss will be averted. To the original 50 milligrams recovered I gave Professor Pegram 10 mg. more to add, so that now the new tube contains 60 mg.

The danger of losing radium of so great value is not small. I quote a recent note which I have translated from the *Physikalische Zeitschrift*, Jan. 15, 1906:

"*Explosion Risk of Radium.*" By Julius Precht, Institute of Technology, Hanover.

"On Dec. 27, 1904, I sealed in a glass tube 25 milligrams of pure radium bromide, which was finely powdered and by long heat 150° C, freed of much of its water of crystallization. The little tube was used in many experimental measurements in an ice calorimeter, and, by the end of November, 1905, was brought many times into the air and warmed to the temperature of the room.

"After it had borne these handlings seven times without accident, it spontaneously exploded suddenly with a sharp report while it was lying undisturbed in a wooden dish, three minutes after bringing it into the air. The force of the explosion was so severe that the entire glass was pulverized into almost microscopic bits, while the radium bromide was to be seen in the dark, as luminous stars on the footboards of the room. This dish was entirely free from radium. Most of it lay within one meter distance from the dish, on the floor.

"The explosive character of the event implies that it resulted from a crack in the glass with a change in temperature. Otherwise larger pieces of glass would have been found in the neighborhood. The fact of the complete pulverization of the glass shows, moreover, that a great excess of pressure was present in the tube, which after-measurement showed would take 20 atmospheres to shatter.

"Radium has its own gas—either emanation or helium, which changed to 20 atmospheres pressure in the tube in the course of eleven months.

"These observations will recall the phenomenon described by E. Dorn—a spark and noise, accompanied filing of a larger tube after a half-year's rest. This electric exhibition was not observed by me, but a strong smell of ozone was observed. Mme. Curie caused an explosion by heat applied to a glass tube in which radium had been sealed for two months. That explosion occurred apparently from confined gases."

Professor Pegram writes, on restoring the new tube to me:

"The material in it consists of 24.8 mgr. radium bromide recovered dry from the broken tube, 4.0 mgr. radium bromide dissolved off the tube, 10.0 mgr. radium bromide new addition, 40.0 mgr. radium bromide (impure radium bromide) recovered from the carpet. This last 40 mgr. contains about all the radium there was on the carpet. The following process was used to obtain it: The piece of carpet was tacked over a shallow box lined with paper and drummed on until free from radium by Willemite test. A considerable amount of matter was thus beaten out and caught on the paper. In the dark the bits of radium were quite evident from their fluores-

"An attempt was made to separate the soluble radium from the dirt, which was mostly insoluble, by treatment with water and filtering. The filtrate, however, contained very little radium, from which it was evident there was enough calcium sulphate *(plaster-of-Paris dust)* present to go into solution and precipitate the radium as the insoluble sulphate.

"Accordingly, the filtrate was evaporated to dryness, the residue put back with the insoluble matter, and the whole fused with sodium and potassium carbonates. After fusion the soluble salts were washed out, leaving the radium carbonate behind with other insoluble carbonates. These were then taken up with hydrochloric acid, the excess of acid driven off from the solution, and calcium sulphate solution added.

"Some of the radium was at once precipitated as sulphate, but to complete the precipitation the solution was left on a water bath for several hours, then allowed to cool and stand for eighteen hours. This precipitate contained the radium and any barium that was present, as sulphates, and weighed 18 mgr.

"The liquid was filtered off, the filter burned and then the sulphates fused with sodium carbonate. After fusion the soluble salts were washed out and the insoluble carbonates treated with hydrobromic acid to convert into bromides.

"The result of this was radium bromide pretty free from any impurities except barium.

"In order to save all the radium, all residues and wash water had been saved. This material was again worked through the above process, and a considerable amount of impure radium bromide obtained, iron and calcium being the chief impurities. This was put with the purer product from the first separation and no further purification attempted, as it seemed more important to obtain all the radium than to risk the losses in handling and incomplete separation.

Autograph on Röntgen-ray plate, 28x35 cm. (11x14 inches), to locate 20 mg. (⅓ grain) radium on carpet.

"Throughout the work, the precipitates and residues from evaporation of solutions were examined by means of a fluoroscope consisting of a very thin layer of zinc sulphide on the underside of a piece of glass, with a lens above the glass focused on the zinc sulphide. When this was held over a layer of thorium hydroxide it was easy to see the scintillations due to the alpha rays, so with this fluoroscope it was easy to detect the presence of the slightest amount of radium or its disintegrating products in the precipitates or residues from evaporation of solutions or wash water. No material that had been in solution with the radium could be obtained entirely free from admixture of enough active material to affect the fluoroscope."

13 West Fiftieth Street

X-RAY THERAPY.*

By A. D. ROCKWELL, A.M., M.D.,

NEW YORK.

NEUROLOGIST AND ELECTROTHERAPEUTIST TO THE FLUSHING HOSPITAL, FORMERLY PROFESSOR OF ELECTROTHERAPEUTICS IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, FORMERLY ELECTROTHERAPEUTIST TO THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

It must be evident to any unprejudiced observer who has kept in touch with the development of radiotherapy that there has been, with but too few exceptions, little earnest effort to find out the truth about the matter.

Activity there has been without stint; too often without insight, and very often in the interest solely of self-exploitation.

In estimating the present status of the *x*-ray in medicine, I would take my stand neither among those enthusiasts who consciously or unconsciously are ever overestimating its value, nor among those ultraconservatives who without practical experience are quite ready to go to the other extreme. There are always three classes to be found in the development of any new therapy.

(1) Those who are quite honest but whose training and abilities, or whose credulity and deficiency in a healthy skepticism, render them incapable of eliminating sources of error—"who follow the lines of least resistance, believing what is easy and for personal interest to believe, and who cannot be trusted, either to observe or report their observations with accuracy."

(2) Those who are capable of sifting truth from error, but who are not quite honest; who know the truth but whose commercialism renders them antagonistic to truth.

(3) Those who are both honest and capable, who are not blinded or misled by a so-called brilliant result or two, but with analytical accuracy are able to determine the place and true value of ther own experience.

An observer† belonging to this last class who has classified and treated 167 cases of malignant disease has come to this general conclusion.

"That while the *x*-ray exerts a powerful influence upon cancer cells of all varieties, yet it is curative only in the more superficial forms of malignant disease, and should not be used in the graver and deep-seated forms of cancer except in inoperable cases, or as a prophylactic after operations, as a possible though not yet proven means of avoiding recurrence."

With these conclusions I am entirely in accord, and although my personal experience along these lines is very much less than his, limited as it has been entirely to private cases and incidental to other work, yet it has long been my thought to make some sort of use of it as my contribution to the efforts being made to establish the status of the *x*-ray in medicine.

The 17 cases that follow do not by any means represent the whole number that I have seen and actually treated, but they are the cases of statistical value so far as they go—by reason of thoroughness of treatment.

Some years ago I wrote in this wise: "As to the question of the efficiency of the *x*-ray in deep-seated and internal malignant growths, this, to say the least, must be left *sub judice*, with the burden of practical and theoretical proof in favor, if not of its inutility, at least of no signal predominating utility."

Time and added experience have not reversed the situation. On the contrary there seems less and less justification in wasting valuable time in treating any of the graver forms of malignant disease by the *x*-ray, unless of an absolutely inoperable nature.

This is, of course, very well understood by those who have had a wide practical experience, but in the minds of the laity and of very many in the profession there exists a hazy idea of the wonderful curative properties of the *x*-ray in all kinds of malignant growths fostered by sensational exploitation in the daily press, but not warranted by the facts. The few recorded cases of scirrhus of the breast, for example, or glandular sarcomatous tumors that have entirely disappeared, accordlng to reports, under *x*-ray exposure, are exceptions that simply prove the rule. The disease invariably returns as seems inevitable when we consider its constitutional character.

It is perhaps mostly forgotten that in the electrolysis of malignant tumors—popular some 25 years ago—we had very much the same experience. That electrolysis is quite as efficient in relieving the pain of various forms of cancer as is the *x*-ray was then pretty effectually demonstrated, and like the *x*-ray, *it* has in rare instances not only diminished the size of schirrus of the breast, but in one case coming under my personal observation entirely dissipated it. The electrolytic treatment in this case we administered at Bellevue Hospital in the clinic of Prof. Frank Hamilton. High hopes were entertained because of this extraordinary result, but a few months subsequently the patient returned to the hospital with malignant disease of the intestines, of which she died.

Another source of error that should be eliminated, and one, too, that is perhaps not altogether infrequent, is the tendency of hard growths simulating true scirrhus to spontaneously disappear. Just as we may have many of the objective and subjective symptoms of a true locomotor ataxia or a true ataxic paraplegia gradually disappear with recovery, so many a benign tumor has so simulated the malignant type that its disappearance under some physical method has been heralded as a triumph of the method over true cancer.

Two recent notable examples of this statement I deem worthy of record. The wife of a well known physician in this city was brought to me suffering from as well marked a case of ataxic paraplegia as had ever come under my observation and an unfavorable prognosis was given. Not a symptom was wanting, yet the patient completely recovered under the administration of certain physical methods of treatment. Evidently the pathological changes associated with true ataxic paraplegia were not present in this case; it was simply an unusual instance of simulation. The other case was one of tumor of the breast the size of a small orange, hard, painful and with slight retraction of the nipple. The patient was sent to me by her physician with the request that I use the *x*-ray. I advised against it and recommended immediate extirpation. The patient refused an operation, and her own physician began the internal administration of medicine, continued until the tumor had entirely disappeared. Whether the medicine had any influence in this resolution I cannot pretend to say, but it is quite certain that had the *x*-ray been used—to the *x*-ray would very naturally have been accredited the success. Whatever else, however, is uncertain about the case, it is quite certain that the tumor was benign and not malignant. Here, then, are two

*Introductory to a Symposium before the Medical Association of the Greater City of New York, March 12, 1906.

† William B. Coley: *Annals of Surgery*, August, 1905.

sources of error which undetected and uneliminated tend to obscure the whole subject and lead to erroneous deductions.

In treating certain forms of malignant growths again we must not lose sight of the danger of over stimulation. The analogy between the action of the *x*-ray and electrolysis in this respect has been illustrated in a number of cases in my own experience. As both methods have occasionally caused the local disappearance of pronounced malignant growths, so both have occasionally stimulated the growths to increased activity and hastened the end.

Two such results in the use of electrolysis have come under my observation, and the same number under exposures to the *x*-ray. (Cases Nos. 12 and 13.)

Singularly enough, while speaking of this the other day to a practicing physician of this city, he reminded me that he was the house physician at Bellevue years ago and had charge of one of the very cases to which reference is made, and was present at the operation.

It was a case of inoperable osteosarcoma and under electrolysis developed with amazing rapidity.

Case I.—Mrs. F., aged 49, came January 23, 1899, with a melanotic sarcoma on the left chest. In four months it had increased from the size of a marble to that of a child's fist, with widespread extensions into the axilla. It seemed to be developing more rapidly with each week and was beginning to cause considerable pain. Exposures were given every other day for two weeks, and daily thereafter with the exception of Sundays.

Later on a mild dermatitis developed, but no diminution in the size of the growth. At first the patient declared that the treatment resulted in decided alleviation of pain, but this was only temporary, and in spite of repeated exposures to the number of 32, the tumor continued to enlarge and the disease to spread and the treatment was abandoned.

Case II.—Miss S., aged 19, was first seen June 3, 1899. She was suffering from Basedow's disease —the gland enlarged to the size of a small orange and the other two cardinal symptoms well developed. Although from much previous experience, believing the galvanic current to be the most efficient form of treatment, I resolved to give the *x*-ray a trial, because of certain statements that had appeared as to its efficacy.

A month of treatment, including 16 exposures, was followed by absolutely no effect. After a rest of 30 days, for the purpose of testing any possible secondary effects of the treatment, the galvanic current was used and greatly alleviated all the symptoms, although no actual cure was accomplished in this case.

Case III.—Mr. J. C., aged 50, presented himself February 5, 1900, with carcinoma of the tongue and sublingual glands, having refused an operation and demanding the *x*-ray. Sixteen exposures were given at intervals of from two to three days—with no result with the exception of some reported slight decrease of pain. The patient then abandoned treatment, failing to keep the next appointment, and passed from under my observation. Of the ultimate outcome of the case I have no knowledge, but that it rapidly progressed to a fatal termination I have little doubt, since even during the treatment there was an appreciable spreading of the diseased area, with beginning involvement of the submaxillary glands.

Case IV.—Mrs. L., aged 41, with recurrent carcinoma of the breast, came January 8, 1901. Eight months after removal of the breast the disease returned in the scar, while in the axilla there were dense, almost immovable nodular masses. The case was now believed to be inoperable, but whether or no the patient was unalterably opposed to any further effort in that direction. She suffered more or less pain at all times, but with low barometric conditions of the atmosphere, her sufferings greatly increased, generally subsiding as the weather changed for the better. This patient received 44 *x*-ray exposures, extending over a period of three months, with no very satisfactory results. The best that can be said is that at first there was some relief of pain and no outward extension of the disease. An interesting feature of the case was that after the raying had lost its analgesic power, the galvanic current applied through clay electrodes and with a current strength as high as 50 and 75 milliamperes, kept the patient quite comfortable for many weeks. Notwithstanding the failure of the disease to further develop externally, the patient grew weaker and suddenly expired. Death was believed to be due to metastasis.

Case V.—Mrs. M., aged 45, came to me March 1, 1901, with an osteosarcoma about the size of a man's fist over the upper part of the right shoulder blade. Ten *x*-ray exposures were given during the first three weeks, resulting in some slight dermatitis. After an interval of three weeks she again resumed treatment—three times a week for ten weeks. Forty exposures were given, but with no diminution in the size of the growth. Neither had it enlarged, but the patient abandoned treatment.

Case VI.—Miss R., aged 27, came to me in July, 1902, with a well-marked case of lupus vulgaris, located on the right side of the chest immediately below the clavicle.

It began as a minute reddish blotch some ten years previously and slowly enlarged to the size of a silver dollar. While abroad the Finsen light had been used with a measure of success. Changes that were distinctly beneficial were observed up to about the fifteenth treatment, but thereafter, although there were some thirty more exposures, no further improvement was appreciable. On returning to this country some two weeks after abandoning the light treatment, she began treatment by the *x*-rays and with most satisfactory results, finally ending in complete recovery after some 45 exposures, administered through a period of four months.

Case VI.—Mr. D., aged 59, seen December 17, 1902. Epithelioma of six years' duration, located on the forehead directly over the left eye, irregular in form, measuring nearly an inch one way and somewhat less than one-half an inch the other. After six weeks of treatment and 15 rather vigorous exposures, several as long as 20 minutes, some unprotected portions of the skin approximate to the diseased part became so red and irritable that treatment was suspended for ten days. In the meantime the diseased area itself showed some improvement, and when treatment was resumed but two exposures a week were given. After a total of 57 exposures perfect healing had taken place, leaving only some redness and a little roughness to tell the site of the growth.

Case VII.—Mrs. B., aged 57, was seen January 4, 1903. Four years before a slight lesion appeared on the right side of the face, developing slowly, but causing no pain nor special anxiety. At the time she came under my observation the lesion was about the size of a silver dollar, and was readily recognized as an epithelioma. *X*-ray treatment was given every other day—sometimes every day, with occasional interruptions. A total of 45 exposures

were given with some manifest improvement in the part after the sixth treatment. After the fifteenth exposure a slight dermatitis appeared, which continued throughout the treatment, but without increasing. The healing process went on uninterruptedly throughout the course of the treatment until there was no trace of the disease. No induration was left and the surface was quite smooth, but a distinct redness prevailed for a long time.

Case IX.—Patient, a girl, aged 13, brought March 13, 1903. In this case there was a small subcutaneous nevus one inch in diameter, located on the chest immediately below the clavicle. The mother brought the case for electrolysis, but as this treatment for the superficial forms of nevi is tedious and by no means altogether satisfactory, and encouraged by the excellent result in Jutassy's well-known case, I suggested the *x*-ray. Thirty-three exposures were given through a period of four months. The surrounding healthy skin was well protected, and as the nevus was of a bright red color, it was difficult to observe any slight reaction. After the seventeenth treatment the patient complained of a distinct burning sensation over the affected area, with tenderness to the touch.

This tenderness continued for several weeks, finally disappearing with a gradual fading of the deep redness of the part and leaving the surface quite smooth and without scar, but a color considerably darker than the surrounding skin. The result was good so far as it went, but cannot be considered altogether satisfactory, since some of those interested were free to say that they would have preferred the original color. The patient, however, was not of that number.

The following case is interesting and instructive, not so much because the treatment exerted a beneficial effect on the enlarged glands, but as an evidence of an idiosyncrasy to *x*-ray influence—a condition that has been very positively denied by some.

Case X.—Miss M., aged 35, with a constitutional tuberculous condition affecting the spine, associated with enlargement of the glands of the neck. With a tube of medium penetrating power and a shield protecting the surface surrounding the two enlarged glands, the treatment was begun January 27, 1903. The distance of the tube was eight inches and the exposure five minutes. This treatment was repeated on the 31st inst., and on February 3 and 7. A new tube of somewhat greater penetrating power now replaced the old one, and in order to bring the lower part of the face, which was distinctly nodular, within the field of exposure, the shield was dispensed with. Exposures were given on February 12, 15, 19 and 24. With the exception of some slight itching no effect had been observed, but on the morning following the last application an intensely active and painful dermatitis suddenly developed. Aside from indicating a marked susceptibility to the effects of the *x*-ray, this case is a strong argument in favor of the cumulative theory of *x*-ray action. In no other way, it seems to me, than by this combination of idiosyncrasy and cumulative action, can we explain the fact that after carefully conducted *x*-ray exposures for one month with no preliminary symptoms, a violent and persistent dermatitis appears without a note of warning. It remains to say, that even this brief treatment was more or less effective in reducing the local pathological condition. The deposits along the angle of the lower jaw entirely disappeared, while the glandular enlargement decreased perceptibly in size.

Case XI.—Mrs. McE., aged 46, was sent to me for post-operative treatment in March, 1903. It was a case of scirrhus of the breast which had been removed a few months before. Twenty-five exposures were given, varying in duration from 10 to 30 minutes. More than three years have now elapsed since the operation, and a recent communication from her physician tells me that as yet there is no evidence of any return. It can only be said that the report is encouraging.

Case XII.—Mr. A. D. C., aged 70. Carcinomatous growth of considerable size on the left side of the neck. It had been removed, but had rather promptly returned, and as it involved the deeper structures his physician regarded it as in a sense inoperable and referred him for *x*-ray treatment. From November 11, 1903, to January 8, 1904, 24 exposures were given. The treatment administered was vigorous, the exposures being lengthened many times to 30 minutes, and during the last seances with tubes of great penetrating power, and yet it was impossible to excite the slightest reaction. No benefit accrued nor effect of any kind excepting a seemingly more rapid development, which both his physician and myself were inclined to attribute to overstimulation.

The treatment was discontinued January 8, and within a week the patient died. It is interesting to note that up to the time of the discontinuance of treatment there was no special decrease in strength. He came regularly to the office from out of town without apparent effort. Within a week, however, after the discontinuance of treatment he took to his bed and within a few days died of exhaustion.

Case XIII.—Mr. B., aged 50, with a large carcinomatus growth on the right side of the neck. First seen April 27, 1904. Two operations having been performed, the growth returning after each, he was referred to me for *x*-ray treatment. Twenty-five exposures were given, not only without result in retarding its progress or alleviating pain, but with very positive evidence of stimulation. During this time the patient's strength kept good, enabling him to come each time from out of town for treatment. After its discontinuance the disease continued to spread and suppurate, until in a few weeks he suddenly passed away.

Case XIV.—Mr. G., aged 37. Some two years before the beard began to fall out on the right side of the face until a circular patch of about an inch became entirely bare and smooth. Carefully protecting the surrounding healthy skin, *x*-ray treatment was begun June 7, 1904, and repeated from two to three times a week. Great care was taken to avoid a dermatitis, which might prove more annoying to the patient than the disease itself. The seances were therefore short, never more than ten minutes, and as a rule not much exceeding five. At the end of a month, and after ten exposures, the treatment was interrupted for three weeks. After that 12 more exposures were given, and treatment again interrupted partly because of some redness and irritation of the part. It was not resumed, as neither during the course of treatment nor after were there any evidences of improvement.

Case XV.—Mary J., aged 36, came to me February 18, 1905, with a lupus erythematosus on the left cheek. The disease began six years before as a small red patch, which gradually developed until nearly one-third of the face was covered by dark, repulsive looking crusts, rather firmly adherent. There was considerable itching, but no ulceration and very little pain.

The patient was treated for four months and at first we were somewhat encouraged. After ten

treatments, averaging from 10 to 15 minutes duration each, a slight dermatitis of the surrounding skin developed, and there was some clearing up of the crusts of epidermis. From this time forward, however, there was no improvement. The few crusts that had fallen off formed again and at the end of four month and after 36 exposures, the condition of the face remained about the same as at the beginning of the treatment.

Case XVI.—Mr. J. D., aged 64, was sent to me May 10, 1905, with a well-developed carcinoma of the mouth, involving the right cheek and gum. The tube used was of leaded glass, except at the end of a projection which the patient held in his mouth, thus enabling the rays to be directly localized on the diseased area.

There was very little pain, only a sense of discomfort, over which the treatment seemed to have no influence. Between May 10 and July 8, 25 exposures were given, varying in length from 10 to 20 minutes, with absolutely no effect, either good or bad, upon the morbid process.

Case XVII.—Mr. W., aged 65, came September 27, '95, with a chronic rheumatoid arthritis with synovial effusion. In addition to other methods, 40 hot air treatments had been given, together with a course of treatment by the static spark, the wave current and high frequency current, but without the slightest result. Now, the patient was desirous of trying the *x*-ray. The tissues were enlarged, soft and bulging on either side, due evidently to serous effusion. Usually there was little if any pain, and the patient could walk with almost ordinary facility. It was only occasionally that the joint became stiff and painful. After 24 exposures, administered every other day, each of 10 to 18 minutes' duration, there was no result, not even the slightest reaction, and the test was pronounced a failure.

Summary.—Melanotic sarcoma, one case; 32 exposures, no benefit.

Osteosarcoma, one case; 40 exposures, no benefit.

Epithelioma, two cases; 45 and 47 exposures, respectively; recovery in both.

Basedow's disease, one case; 16 exposures, no benefit.

Carcinoma of tongue, one case; 16 exposures, no benefit.

Carcinoma of mouth, one case; 24 exposures, no benefit.

Carcinoma of the neck, two cases, with 24 and 25 exposures, respectively; no benefit; on the contrary both were stimulated to increased activity of growth.

Alopecia areata, one case; 22 exposures, no benefit.

Lupus vulgaris, one case; 45 exposures, recovery.

Lupus erythematosus, one case; 36 exposures, no benefit.

Tuberculous glands, one case; decided benefit, but treatment abandoned because of sudden and severe dermatitis.

Scirrhus of the breast, one case; 24 post-operative exposures; no evidence of return after three years.

Rheumatoid arthritis, one case; 24 exposures, no benefit.

Nevus, one case; 36 exposures, with recovery.

In estimating a remedy it is important that we know its weakness as well as its strength, and therefore in preparing this paper my object has been, while taking due notice of both successes and failures, to emphasize the failures more than is generally done, on the principle that as much can be learned ofttimes from the last as from the first.

Every failure which is published in detail is in one way as much a fact for science as a success, since it reduces and guides the labors of future experimenters.

That the failures greatly outnumber the successes, simply indicates that in the majority of cases we have not rightly adapted the means to the end, and emphasize the proposition with which we began, that while the *x*-ray is not only valuable, but curative in many superficial diseases, both benign and malignant, it possesses but little, if any, permanent efficiency in the deeper seated and graver forms of malignant disease.

616 Madison Avenue.

MEMORANDA ANENT THE TREATMENT OF GANGRENE IN THE DIABETIC.*

By HEINRICH STERN, M.D.

NEW YORK.

Of all the complications of diabetes there is none more dreaded than gangrene. On this occasion it may practically be immaterial for us whether diabetic gangrene, so-called, is an affection *sui generis*, that is one peculiar to the diabetic, or whether it is a senile gangrene complicated by diabetic phenomena or, finally, whether the self-same causes may not stand at the bottom of both, the diabetic as well as the gangrenous processes. Enough the concurrence of these morbid states, and be the one or the other or both ever so slight and illy pronounced, it is *prima facie* evidence of a greatly depraved condition of organism. The physician as well as the surgeon appreciates the seriousness of the associated conditions, and either is loath to give a decided opinion as regards the ultimate result of the treatment he has instituted. As a matter of fact, diabetic gangrene is a state of affairs with which the practitioner, and be he ever so conservative a physician or so radical an operator, wishes not to be confronted any too frequently. Of course, there cannot be any contention about the mode of treatment when the gangrenous process is far advanced, as only by surgical interference may yet the life of the patient be spared for a while. The preeminent questions at issue: When to operate and when to treat by conservative methods, concerns all the instances in which the gangrenous degeneration is limited in extent and virulence, hence, practically all cases, when they are first brought to our notice.

We may distinguish at least two principal forms of gangrene in the diabetic: the one, concurring almost always with more or less pronounced angiosclerosis, seems to be the effect of arterio- or phlebosclerosis, and an eventual subsequent thrombosis, while the other appears to be the result of the activity of virulent microorganisms upon tissues vitiated by deficient nutrition and autotoxic processes.

Of course in the second variety endarteritic and endophlebitic changes are quite as frequent as in the first type of the affection, which, however, bears an apparent idiopathic character, while the former is more or less of a secondary or tertiary nature. The first variety, which in advanced instances can not always be discriminated from the second form, I encountered relatively oftener, in my own patients than in consulting practice in which, on the other hand, I have most always met with diabetic ulcerations, furuncles, carbuncles, and gangrenescent phlegmons, in short with gangrenous processes of bacterial origin. The cause of this fact, I think,

*Read at the meeting of the North Side Medical Society, December 21, 1905.

may be readily adduced. In diabetics, in whom the intake of carbohydrates does not exceed the tolerance for the latter, the hyperglycemic condition as a rule is likely to be reduced or to cease altogether. However, a nourishment abounding in proteids, as it is indicated in diabetes, is apt to aggravate the arteriocapillary fibrosis, which concurs so frequently even in the milder form of the diabetic process.

Thus the endarteritic and endophlebitic degeneration may continue until the lumen of the smaller vessels is obliterated and local death—especially of the distal ends of the extremities—ensues. The majority of instances of diabetic gangrene of the idiopathic type, that have been brought to my notice, occurred in individuals in whom the diabetic syndrome, having more or less vanished on dieting, was overshadowed by the syndrome of angiosclerosis.

On the other hand, I have seen almost all cases of gangrene taking their origin from inflammatory conditions in persons suffering either with grave diabetes, in whom exclusion of carbohydrates could not materially diminish the hyperglycemia, or in individuals affected with mild or moderately severe diabetes, who had never properly executed an antidiabetic regimen. These are the cases which have often been neglected, in which the diabetic syndrome is the preeminent anomaly, and which are usually referred to the consultant when the systemic decline has far progressed. Blood, lymphatics, and tissues of these diabetics, overcharged with glycose, nitrogenous excrementitious substances, and acid principles, offer a suitable soil for the display of bacterial virulence.

Without desiring to enter into statistics on this occasion I wish to state that, in my experience, the frequency of well-developed idiopathic gangrene of the diabetic was extremely small, not surpassing 1 per cent. of all the cases under observation. Of course, the gangrenous processes due to bacterial invasion, which I have seen in diabetics, were greatly more numerous, having been present, I should say, in about 10 per cent., or even 12 per cent., of all diabetics who consulted me. However, sight must not be lost of the fact that in many cases advice was only deemed necessary when the gangrenescent character of a phlegmon, etc., or the progressive tendency of a gangrenous process had become evident.

For the relative frequency of the diabetic phlegmon tending to become gangrenous, patient as well as physician, by neglecting to institute antidiabetic treatment and hygienic means, are often to blame. The infrequent occurrences in my practice of idiopathic, as well as progressive gangrene, I ascribe to the prophylactic expedients to which I resort as soon as the condition of the patient seems to necessitate them.

Prophylactic Treatment.—The ounce of prevention is worth many pounds of cure, as far as it concerns gangrene in the diabetic. Once for all, it should be understood that the best prophylactic is and remains the suppression or reduction of the diabetic syndrome. This is accomplished almost entirely in well-nigh every instance by proper dieting. The diet should conform to the needs of the organism, but should not remain one-sided for protracted periods. It is much better to have the patient adhere to rigid dieting one week in every month, than to have him pursue a strict regimen for many months, after which everything, and in whatever amounts, is allowed him. Hand in hand with the attempt at the suppression of the hyperglycemic condition a special hygienic treatment should be instituted. First and foremost, the patient's work has to be adjusted to his diminished resistance and vitality. This pertains in the same degree to mental as well as physical labor. Obesity should be reduced by exercise and gymnastics, and emaciation be ameliorated by the addition of absorbable fats of high melting point. The heart should be looked after and treated, if necessary. The best heart tonic is absolute rest in the recumbent position. Two or three weeks of absolute rest, during which time the amount of liquids to be imbibed is limited to physiological needs, are of more benefit to an overworked or weak heart than a year's stuffing with strychnine, digitalis, iron, nitroglycerin, and their likes. A great deal of attention should be devoted to the hygiene of the skin. Absolute cleanliness of the entire integument should be insisted upon. A mild antiseptic soap may be habitually employed. The body should never be immersed into cold water, but a sponge bath of cold water is permissible. Two or three times a week a warm bath of from 100° to 120° F. should be insisted upon. If the patient is obese, or if the heart displays symptoms of weakness, a daily bath of that temperature should be prescribed. The slightest abrasion of the skin, the most trifling injury from a fall, from a jerk or from cutting a corn, should be treated by strictly antiseptic methods. The body should be well protected against atmospheric influences. It is best to employ woolen underwear and stockings in winter. The heat should be equally distributed over the entire trunk, but hands, and especially feet—the latter the most frequent seat of the gangrene—may be kept extra warm. A daily moderate perspiration around the toes indicates that they are not threatened by local gangrene.

The foregoing simple measures, apart from those which apply to the heart alone or to obesity, which should be employed in the pertaining instances only, ought to be instituted in every case of diabetes coming for treatment. In cases even when the acetone bodies are present repeated attempts should be made to keep the glucose contents of the diabetic organism at a minimum.

Besides these measures I make use of some other expedients to avert the onset of idiopathic gangrene in the diabetic. This idiopathic gangrene occurs, as we have seen, in patients whose diabetic affection has not made very pronounced inroads on the general condition; in other words, in persons whose diabetes is either of a mild nature, or who have pretty well kept up antidiabetic treatment. I have never seen idiopathic gangrene in the diabetic supervening before the fiftieth year of life, and as it always concurs with angiosclerosis, the symptoms of which are usually more prominent than those of diabetes, I am forced to look upon it as a type of senile gangrene. Accordingly I treat the angiosclerosis and its complications with a view to prevent the gangrene.

I consider every diabetic a fit subject for antiangiosclerotic treatment, whose radial pulse pressure is above 150 mg. Hg. (v. Basch's sphygmomanometer) even if a hypertrophic state of his heart and the accentuation of the second aortic sound are as yet not plainly discernible. It is in such cases of latent or incipient arteriosclerosis that treatment will do most good. The antidiabetic diet, of course, should be continued, but carbohydrates in limited amounts are to be allowed. Especially should this be the case with milk which is a very acceptable and bland nutriment. Blandness of the nourishment, by the way, seems more important in

the diatetic treatment of the arteriosclerotic diabetic than the total exclusion of farinaceous material. Preparations of salts of iodine in increasing doses, should be administered for protracted periods. Circulation and metabolism in general should be stimulated as much as possible by physical means. Severe pains in thigh and calf and foot are to be considered rather the result of the endarteritic processes and incipient thrombosis than a phenomenon of "rheumatism," " gout," "neuralgia," or "diabetic neuritis." Such pains, especially if they are of nightly occurrence, and tearing or burning in character, and do not disappear on the exhibition of salicylates and other coal tar derivatives, I dare say are pathognomonic of the progressive obliteration of the lumen of the arterioles. They should not be wrongly interpreted, for the reason that a rational management of the affected peripheral parts of the extremities—almost always of the lower ones—may yet effect amelioration of the endarteritic process. In the presence of the aforedescribed pains the administration of iodine should be insisted upon. There is no consensus of opinion as to the modus operandi of preparation of iodine in angiosclerosis; possibly it is the altered viscosity of the blood, ensuing after the administration of iodine or its vasodilating properties, to which may be ascribed any beneficial influence. The best preparations of iodine to be taken for protracted periods I think are the sodium iodide, and the iodine-formic acid solution (Stern's solution) devised by me. The mechanicothermic means for the local angiosclerotic process, in the first instance, should be aimed toward stimulation and acceleration of the venous circulation. The patient may take short walks, but must not stand on his legs for any length of time Hot footbaths applied daily and followed by brisk massage of the entire limb, or the entire body, will greatly stimulate the return circulation. Still better service may be rendered by dry hot air. The affected limb should remain in the hot air apparatus at a temperature of from 250° to 300° F. for almost half an hour. (On this occasion it must be remembered that the thermometers which some manufacturers attach to their hot air apparatuses—for obvious reasons—are made to read twenty-five and more degrees higher.) It is advisable to proceed with the "bake" twice a day for no less a period than two or three weeks. Each séance may be ended with massage or if possible vibratory massage. The high frequency current has proved of special value in stimulating the local circulation, and in overcoming venous stasis. In phlebosclerotic edema the employment of the high frequency current may also be accompanied by gratifying results.

Treatment of Fully-Established Gangrene.—The management of fully established gangrene in the diabetic cannot be undertaken according to iron-clad rules. Every case demands its special study and care. Some of the lesser lesions, as gangrenescent furuncles, for instance, often heal after institution of a rigid antidiabetic diet and the repeated injections of iodine into the suppurating skin gland. Carbuncles will mostly yield to the same simple surgical means—although much slower—as are usually applied to these deep-seated inflammations of the subcutaneous tissue in the non-diabetic, provided a strict antidiabetic regimen is adhered to. Necrosis of the skin may also be cured if the glucose contents of the blood have been reduced to a minimum and the lesion is treated antiseptically. Some years ago I have seen in the Home for the Aged and Infirm, in Yonkers, a diabetic woman of sixty-five, whose entire palmar surface of one foot was a mass of necrosed tissue; after six weeks of moderate antidiabetic dieting and application of chlorine water (U. S. P.) the skin necrosis had completely subsided.

Antidiabetic treatment will almost always prove a powerful agent in assisting in the healing process of gangrenous conditions which have arisen on the basis of a diabetic cachexia. This is specially the case where such treatment was never before executed in a proper manner. In idiopathic gangrene, on the other hand, when the patient is quite robust and in a pretty fair state of nutrition, when, in other words the diabetes does not exist in a very pronounced form, antidiabetic dieting, as a matter of course, will scarcely avail anything worth while. It must not be forgotten that such patients very often are, or have been, under a rigid diet, and that their well-being, considering it from the standpoint of diabetes, leaves very little to be desired.

Idiopathic gangrene in the diabetic is always of the dry, the aseptic variety. It seems to be entirely due to insufficiency of blood supply. In this form of gangrene, the necrosed tissue becomes mummified, in which state it offers no suitable soil for the propagation of the streptococcus pyogenes or other putrefactive microorganisms. If suppuration ensues, it occurs at the place of union of the dirorganized and the living textures. The line of demarcation is normally composed of granulation tissue. Progressive gangrene is of the same nature in the diabetic as in other individuals, but of still greater virulence. It is a moist, septic gangrene. The lesion of the integument in this form of gangrene is no measure of the range of destruction in the deeper textures. The gangrenous process advances speedily along the connective tissue. Septic gangrene is ushered in by a chill, and is accompanied by progressive septicemia throughout its entire course. According to Koenig's dictum it should be the endeavor of the attendant to convert septic gangrene into destructive processes of an aseptic nature. We should aim to keep dry gangrene in a dry state and to stop the inflammatory and decomposition processes in humid gangrene, which would make it approach the dry form. The latter would be accomplished by permitting the contents of blisters to escape, by removing necrotic skin when covering a moist gangrene, and by making broad incisions and cutting out the gangrenous material when a phlegmon is present.

Dry gangrene, according to the same authority, may be kept in *statu quo* or obtained from humid gangrene by applying iodoform gauze and admitting air, and by avoiding moist dressings, even though they be saturated with antiseptics.

Although I have seen complete recoveries from gangrenescent processes on the application of moist dressings, as, for instance, the case treated with chlorine water just alluded to, I fully subscribe to Koenig's recommendations, as their execution during the last nine or ten years has given me, on the whole, quite satisfactory results.

If a case has been grossly neglected, or if the institution of an antidiabetic regimen (almost useless, as we have seen in many instances of idiopathic gangrene) cannot cause demarcation, or arrest the progress of the gangrenescent inflammatory condition, the radical operation, that is, amputation of the affected limb, must be thought of. Before amputation, which undoubtedly is the only chance of prolonging the life of a certain class of patients, is resorted to, the attending physician should lay before himself the following two questions:

First. Is the patient in a condition to be operated upon?

Second. How "high up" shall the operation be performed?

The first question really comprises the prognosis of the case under consideration; that is, will the patient live longer when the operation is performed or left undone? My answer would be that the patient may be operated upon with success:

a. When the general condition does not point to advanced cachexia.

b. When the condition of the heart is still fair.

c. When the amount of urinary glucose does not exceed 100 grams in the twenty-four hours.

d. When acetone bodies—if at all present—occur in small amounts only.

e. When the smallest possible amount of a general anesthetic, or when a local anesthetic is to be used.

f. When the operation is to be performed with due deference to even the most minute antiseptic precautions.

g. When the amount of blood to be lost is presumably small.

h. When exarticulation, which does not necessitate severance of thick layers of muscles and opening of the marrow cavity, is to be performed instead of amputation.

There is little hope for success, that is for survival of the patient:

a. When the general condition is pronouncedly cachetic.

b. When general septicemia is pronounced.

c. When the heart is failing rapidly.

d. When there exists great intensity of the glycosuria.

e. When coma is threatening, or has already supervened.

f. When progressive gangrenous processes have ensued in more than one limb.

g. When a "high amputation" is to be performed.

The second question, "How high up shall the operation be performed?" puts us in a dilemma. It goes without saying that the higher up one operates, the more effective will be the cure, but at the same time the greater will be the shock to the much deteriorated organism; and *vice versa*, the lower the point of operation the less the shock to the system, but the greater the probability of the progress of necrosis above the stump. Out of this state of affairs, in which the alternatives seem equally undesirable, the answer to the previous question, "Is the patient in a condition to be operated upon?" may give some practical suggestions.

From the standpoint of rational conservatism, I would advocate for the general run of cases—if febrile, immediate operation; if non-febrile, a waiting period, if possible, of from one to three weeks, during which antidiabetic treatment which may cause demarcation of the gangrenous process is to be executed. In case elevation of temperature should ensue during this period, an operation should be resorted to at once. As to the place of operation, I would recommend, if the gangrenous condition is limited to one or two toes, exarticulation of the parts thus affected; if more toes, or the palmar or dorsal portion of the foot, or the entire foot, or ankle, or calf, exarticulation at the knee; if pulsation of the popliteal artery has ceased, operation above the knee.

Summing up these principal points dwelled upon in the foregoing we find:

1. That we must discriminate between two forms of gangrene which may supervene in the diabetic, the idiopathic and the gangrenescent inflammatory variety.

2. That idiopathic gangrene in the diabetic does not depend so much upon the glycemic as upon the arterio- and phlebosclerotic conditions in the organism, and that inflammatory gangrene is the result of the activity of virulent microorganisms upon tissues vitiated by deficient nutrition and autotoxic processes.

3. That idiopathic gangrene was not encountered oftener than in 1 per cent. of all diabetics under personal observation, while gangrenous processes due to bacterial invasion were diagnosed in 10 per cent. or 12 per cent. of cases met in consulting practice.

4. That idiopathic gangrene may ensue in persons who have undergone, or are still undergoing, antidiabetic treatment, and who are quite robust and in a fair state of nutrition, and that gangrene taking its origin from inflammatory conditions, mostly supervenes in diabetics, who are either affected with a grave form of the disease or in whom a proper dietetic and hygienic antidiabetic treatment had never been executed.

5. That, after all, the best prophylactic of gangrene in the diabetic is the suppression or reduction of the diabetic syndrome.

6. That, together with the attempt at the suppression of the hlperglycemic condition, an abortive hygienic treatment should be instituted.

7. That, besides such measures, some additional expedients have to be resorted to in the presence of angiosclerosis, as this is the apparent forerunner of the idiopathic type of gangrene.

8. That every diabetic is a fit subject for antiangiosclerotic treatment whose radial pulse pressure is above 150 mg. Hg., even if a hypertrophic state of his heart and the accentuation of the second aortic sound are as yet not plainly discernible.

9. That the management of a fully established gangrene in the diabetic cannot be undertaken according to iron-clad rules.

10. That lesser lesions, as grangrenescent furuncles, carbuncles, and skin necrosis, will often heal after institution of an antidiabetic regimen and antiseptic local measures.

11. That idiopathic gangrene in the diabetic is always of the dry, aseptic form, and that progressive gangrene in the diabetic, as in non-diabetics, is of a moist, of a septic nature.

12. That with the means at our disposal we should aim to keep dry gangrene in a dry state, and to convert humid gangrene into the dry variety.

13. That idiopathic, aseptic, dry gangrene should not be immediately treated by radical measures, but time, during which the patient is under a diabetic regimen, should be allowed for the formation of the line of demarcation.

14. That, for a short period, an antibiabetic regimen should be instituted in cases of gangrenescent inflammations of non-febrile character before a capital operation is to be performed, but that an operation should be *immediately* resorted to at the slightest elevation of temperature.

15. That a radical operation may prolong the life in septic cases of progressive gangrene, provided the patient is in a fit condition to undergo such a procedure.

16. That there is little to be expected from an operation when the patient is in a very low state of vitality, when general septicemia is pronounced,

when the heart is rapidly failing, when there exists glycemia of great intensity, when coma is threatening or has already supervened, when more than one limb has become gangrenous, or when a "high operation" is to be performed.

17. That exarticulation is to be given preference to amputation.

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LARYNGEAL EDEMA.*

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As the history of the following cases will materially bear upon subsequent remarks, I take the liberty of briefly relating them first.

I. Two summers ago a newspaper reporter, Z. H., twenty-six years of age, came into Dr. Chappell's clinic at he Manhattan Eye, Ear, and Throat Hospital with this history: He had had the diseases of childhood, also infrequent colds, and sore throat. He does not drink, but smokes on an average four cigars daily. Five days before he had attended a banquet at which he had smoked several large cigars, and afterward he had noticed for the first time a "pricking" sensation at the root of his tongue. Later in the evening he felt a swelling of his larynx, accompanied by headache and dysphagia, but by little dyspnea. On the following day, after a sleepless night, the conditions were worse, and upon consulting the family physician he was instructed to put ice on the throat externally, and to gargle frequently with a potassium solution. On the next day the pain was more intense, the dyspnea very annoying, and swallowing was accompanied by extreme pain. His condition grew worse, so that for three days before entering the hospital he was able to swallow food and water only with extreme difficulty. On July 25, five days after the initial disturbance, I examined his throat and found his pharynx congested and the tonsils enlarged. The epiglottis was very much swollen and edematous, nearly obscuring a vision of the larynx, but what could be seen of the arytenoids, the interarytenoid space, and ventricular bands was red and edematous. The patient could only whisper, and could barely open his mouth. This fact made me look for quinsy, or some other peritonsillar condition to explain it, but I found nothing of this sort. Dyspnea was marked, the tongue furred, and the breath foul. Externally there was considerable swelling and tenderness of the submaxillary glands, more marked on the left side. Temperature 100.6°, pulse 118. There was some sweating, and a general appearance of septic absorption. Not being able to localize the lesion to which I could reasonably attribute the disturbance, I determined to deplete the edema by internal medication. Two minims of croton oil were given, followed by half an ounce of a saturated solution of magnesium sulphate every hour until free evacuation was accomplished. In addition the patient was placed under a tent where a kettle was steaming with compound tincture of benzoin, oil of pine, and creosote added to the water. Also local applications were made to the larynx of a 2 per cent. solution of cocaine and 1-1,000 adrenalin solution, and ice externally. This was kept up eight hours, with no apparent effect upon the symptoms. I then bled the patient from the median basilic vein. After this there was slight relaxation of his jaws, so that on the following day a better view of his throat above the epiglottis was obtained, and near the base of the tongue, about the height of the tip of the epiglottis, a small swelling was detected which seemed no more than the muscular unevenness occasioned by pulling the tongue more to one side than the other. Upon probing this, I detected a hard, unyielding condition, and noted it to be to the left of the median line, and that upon this same side the submaxillary gland was more tender and swollen than on the other.

The patient's temperature was now 101.4°, accompanied by sweats and chilly sensations. I attempted incision first with a curved, sharp-pointed bistoury, but owing to his jaws being nearly closed the curve was insufficient to permit of puncture at this location. I then tried a laryngeal bistoury which, after considerable pressure, penetrated a thick, encapsulated cavity from which a dram or more of dark-colored, foul-smelling pus was evacuated. The temperature dropped in eight hours to normal, and by the next day the edema had subsided so that he was able to breathe, eat, and drink with comfort. Recovery was uneventful.

Here a laryngeal edema existed with the cause temporarily obscure, location of the abscess unusual, and the patient's condition likely to necessitate a tracheotomy at any moment—for which preparations had been made. The infection had probably traveled through the lymphatics from the left tonsil, as the tumor was somewhat removed from and above the lingual adenoids. The capsule was so thick and unyielding that I believe serious difficulties would have arisen before it discharged spontaneously. His inability to swallow food had weakened him seriously, and the croton oil had irritated the bowel so that it would not retain nutritive enemas.

II. The following case is one of secondary edema, the underlying cause being a chronic nephritis. This is definitely accounted for in the autopsy report. I present the larynx, although it now shows less evidence of edema than at the time of autopsy. I. R., aged forty-four years, a cab driver. He had been a heavy beer drinker, likewise he drank whiskey undiluted. He had been on a spree for a week when I was called to see him in the afternoon of April 11, 1904. He was hoarse and breathing with slight difficulty. Temperature 99°, pulse 92. There was slight redness and puffiness of the uvula, redness of the arytenoids, and puffiness of the ventricular bands, such as is often observed in cabmen as the result of exposure and alcohol. He also had a chronic suppurative ear, with slight mastoid tenderness. Believing I would have to operate later for mastoiditis, I sent him to the Manhattan Eye, Ear, and Throat Hospital. He was given a cathartic and nitroglycerin internally. Adrenalin was given internally, as well as applied locally to the larynx. Further treatment was directed to the ear. The next morning I was informed by telephone at 8.30 that he was breathing very badly, and was cyanotic. Preparations were made for an immediate tracheotomy, and I hastened to the hospital, reaching there in ten minutes. The operation was performed at once, without anesthetic, but to no avail. Following is the autopsy report, submitted by Dr. Zabriskie, the pathologist: The face, mucous membrane of mouth and tongue markedly cyanotic. The heart dilated, valves patent. Walls of right ventricle flabby, thickened to about three-fourths of an inch. Muscles show fatty degeneration. Aorta shows a number of slightly raised, whitish-yellow calcareous plaques. The pleural cav-

* Read before the Section on Laryngology, New York Academy of Medicine, January 24, 1906.

ities contain three ounces of yellow, clear fluid. Both lungs are edematous and congested. Cut surfaces are smooth and the bronchi contain large amounts of frothy yellowish fluid; there are no evidences of consolidation. The trachea and larger bronchi show evidences of edema. The mucous membrane is red in color, thickened, and shows in spots small petechial hemorrhages. The entire larynx, epiglottis, and opening into esophagus show an enormously thickened mucous membrane. The epiglottis is three-eighths inch thick. The thickening of the ventricular bands approximates their two surfaces and closes the chink of the glottis. The mucous membrane is smooth and glistening, with no necrosis. The spleen is small, bluish-red in color. The cut surface is granular, and the pulp is easily expressed. The left kidney is small, the capsule is slightly adherent. The cut surface shows a markedly granular condition of the cortex, which is thin, and the papillæ are indistinct. The liver is enlarged. The cut surface is smooth and shows fatty degeneration microscopically. The tissue from the larynx is infiltrated with serum. The vessels are distended with blood, and at points extravasation into the perivascular spaces is noted. No bacteria could be demonstrated in the tissues or any positive source of infection be determined.

III. This case is one of sudden edema in a tuberculous larynx, necessitating tracheotomy, which has been previously reported at a meeting of the Academy by Dr. Chappell. A. C., female, aged thirty-two years. She was first seen in the clinic September 19, 1904. She had suffered from hoarseness and loss of voice for three months. The right arytenoid was pyriform in shape and swollen to the height of the epiglottis. The mucous membrane was dotted with small spots of ulceration. She was treated for some months in the clinic, when she ceased her visits. She was brought to the hospital from the country on November 6, complaining of difficulty in breathing, from which she had suffered for two weeks. On her arrival she was cyanotic, and the dyspnea was alarming. In the absence of Dr. Chappell I was called in to see the case. Tracheotmy was immediately performed under cocaine anesthesia. The breathing soon became easy and the patient slept for twelve hours. She remained in the hospital nine days, at the end of which time the temperature had fallen from 101.6° on admission to 99°, and the edema had disappeared. She was then sent to another hospital, where she remained for two months, at which time the tuberculous process seemed quiescent. The tube was then removed. Since the tracheotomy she had gained over twenty pounds. It was definitely known that this was tuberculous, as both smears and cultures showed the tubercle bacilli. Since she left this last hospital nothing is known of her condition.

IV. Lastly, the following case presents many puzzling points for consideration. M. B., aged twenty-four years, oldest of eighteen children thirteen of whom are living. Mother died in childbirth. Father living. She denies any specific trouble, and examination of the lungs is negative. Six years ago she had an attack similar to the present, when difficulty in swallowing and a sensation of swelling in the throat were the chief symptoms. Twelve months after this she had another attack, when the choking and difficulty in breathing and swallowing were more intense. The present attack is about the seventh, and began about a month ago. She consulted a throat specialist at the Bellevue clinic, who gave her some medicine which she took for three weeks, without improvement. She was first seen at Dr. Chappell's clinic at the Manhattan Eye, Ear, and Throat Hospital, a week ago. She gave a history of difficult breathing and swallowing, but unaccompanied with pain. Examination of the nasal chambers revealed polypi in both, with a bluish-red edematous swelling of the left inferior turbinate. The soft palate and uvula were thickened and edematous. The lingual adenoids were pale and edematous, and the epiglottis markedly edematous and obscuring the laryngeal view. All the structures below the soft palate were extremely pale. Believing that the edema might be influenced by the iodide, which I surmised was the medicine she had been taking, she was instructed to discontinue its use and was given one grain of mercury with chalk every three hours. Upon examination five days later some reduction of the edema was apparent, but not sufficient to warrant the assertion that the iodides were in any way responsible for its existence. There are also too many points against angioneurotic edema to give this as a positive diagnosis. From the recurrent attacks and general appearance I believe that some lymph channel has been obstructed by pressure, thus causing an infiltration of the tissues. A more definite conclusion can be arrived at only by a careful and continual observation.

However indefinite, scientifically, the term laryngeal edema may appear, the fact yet remains that when confronted with its existence none of us feel too well equipped for its care. The various classifications by different writers of the etiology of the disease have not materially aided us in its practical treatment. It is interesting to know that as long ago as 1852 Sestier submitted a classification, based on 190 acute cases, that is far from inappropriate: Typical, originating in the larynx. Contiguous, proceeding from pharynx or other parts. Consecutive, as a sequel to a previous disease of the pharynx. Von Ziemssen[1] endeavors to include under laryngitis phlegmonosa all disturbances of the larynx occasioning edema, and enumerates the following conditions: Diphtheria, erysipelas, burns and scalds, traumatism, foreign bodies, all the infectious diseases, all varieties of nephritis, diseases of the heart and lungs, and compression of the blood vessels; while Sir Felix Semon[2] would materially simplify the matter by assuming that "acute edema of the larynx, edematous laryngitis, phlegmon of pharynx and larynx, erysipelas of pharynx and larynx, and angina Ludovici are all pathologically identical and represent different degrees of severity of one and the same septic process, due to the invasion of throat and neck by various pathogenic microorganisms." If this can be substantiated it will indeed simplify the etiology.

Dr. Jonathan Wright[3] in criticism of Küttner's article on this subject, apparently agrees with Semon that septic conditions of the neck differ from one another only in degree, either clinically or pathologically. He also calls attention to the fact that certain microorganisms have been shown to have a direct etiological connection with certain diseases, yet these same organisms are constantly found in concact with the human organisms under healthy conditions. Rice, in opposition to this view, does not consider acute primary edema of the larynx erysipelatous, without some external cutaneous manifestation.[4] Küttner[5] has probably chosen the best classification, which, abbreviated, is: (1) Cases of an acute infectious nature, under which he has: Primary. When the infecting virus has selected the

larynx as its port of entry. Secondary. When the infecting virus attacks the larynx in the course of already existing infective disease, as erysipelas, scarlatina, typhoid, etc.

(2) Cases of a non-infectious nature, the etiological factors being burns, foreign bodies, traumatism, colds, certain drugs, and constitutional diseases, as syphilis, tuberculosis, nephritis, etc.

We are scientifically certain that irrespective of classification all forms of edema are either serous, fibrinous, purulent, or hemorrhagic. As it has been so clearly demonstrated by Jonathan Wright[6] that a solution in the continuity of the protecting epithelium of the tonsillar crypt plays an unimportant part in the subsequent infection of the tonsil by the bacteria present, are we not warranted in attributing to the epithelium of the larynx a similar protective power, although probably less than that of the tonsil—because not in contact with such great numbers of bacteria—but sufficient under normal circumstances to protect itself? Under abnormal systemic conditions a breach in the epithelium is not necessary. Should this be so, the argument presented by Sir Felix Semon that the bacteria "gain entrance through some accidental breach of the protecting surface of the larynx" is not sufficiently clear to be given as a means of infection. Considering how few larynges are affected by edema, irrespective of the fact that the epithelium is constantly in contact with infective bacteria, we must look for some other cause—probably a change from within—which would permit their invasion. First. We may conjecture that at some time the resistance of the larynx is reduced, either from a disturbance of the vasomotor supply or from some constitutional disease which would open the way for the invading germs. Second. We might surmise that infection is produced by the presence of too great numbers of cocci for the larynx to withstand, just as it has been proven that bovine tubercle are infectious to man only when their number is so great that collectively they form a power against which the resistance of the ailmentary canal cannot contend. Third. The virulence of the same microorganism may vary at times; or, judging from the infrequency of acute laryngeal edema, it may require the combination of these three conditions to produce it. So rare, indeed, is it that Pettesohn found only eight cases of edema of the larynx in 5,161 throat and nose cases treated between April 1, 1897 and June 1, 1899. Seven of these occurred in connection with local inflammatory conditions. Edema of the true vocal cords is far more unusual, and even Morell Mackenzie, in his great work saw it only twice. Autopsies show comparatively few cases of laryngeal edema, and out of 3,887 examinatons under Virchow edema of the larynx was noted only 210 times—only forty-four of these due to *local*, and 136 to *systemic* disease. Yet to refute this large percentage of edema due to systemic conditions, Mackenzie examined the larynx in 200 cases of Bright's disease without finding a single case of edema. We may then enumerate the causes in their probable order of frequency: (1) Infection—no matter whether it be through pyogenic or erysipelatous streptococci staphylococci, or Loefler bacilli—unquestionably infection is the primary cause. (2) Secondary to abscess formation at the base of the tongue—peritonsillar or retropharyngeal. (3) Nephritis, tuberculosis, syphilis, cardiac disease, and rheumatism, if affecting the cricoarytenoid articulation. (4) Traumatism, scalds, foreign bodies, corrosive poisons, and inhalation of flame. (5) Grip, particularly in children;[7] iodides—Hopkins[8] reports a case in which twelve grains t. i. d. produced decided symptoms; aneurysm or other tumors—by occasioning venous stasis with serous effusion into the larynx. (6) Typhoid, malaria, and scarlet fever.

Pathology.—It has been scientifically determined by Logan Turner,[9] that he development of inflammatory edema of the larynx is dependent upon three factors: (1) The intensity of the inflammatory process producing it; (2) the site of the infection; (3) the anatomical arrangement of the loose submucous cellular tissue of the larynx. In proof of the last assertion, he has injected—submucously—carmine gelatin in the liquid form, thereby filling in the loose areolar tissue of the larynx proper and epiglottis with a substance which when cooled becomes set. In this way he was able to determine the areas and limitations of greatest areolar tissue. Edema, from whatever cause, is an exudation of serum into the submucous areolar tissue—the extent of this exudation being governed by the quantity of areolar tissue and its limitations. The three stages may be enumerated as (*a*) edematous; (*b*) plastic; (*c*) suppurative. The locations most frequently involved are the aryepiglottic folds, the ventricular bands, the interarytenoid space, and the anterior surface of the epiglottis.

Symptoms.—The onset, if acute, may be preceded by a chill, followed by a temperature of moderate height. Hoarseness is almost invariably present, accompanied with slight cough. Pain, if the throat is quiescent, is not a constant factor, though a sense of discomfort is experienced always, and swallowing is usually painful. Respiration is usually interfered with and is in proportion to the advance of the trouble, the inspiratory effort being the first affected. The patient is unwilling to lie flat on his back, and prefers a sitting posture; and may be noticed using the hands as a prop, thereby gaining a slight aid to respiration. There is a decided alarm expressed in the face, and a nervous tremor may be noted as a probable result of muscular tension and anxiety. The face is first flushed, and later, when difficulty of respiration is increased, becomes cyanotic. The urine is diminished, is highly colored, and may contain albumin. In some cases we are unable to determine if the albumin is the result of the edema or if the edema is the accompaniment of the kidney condition producing the albumin. The appearance of the laryngeal parts varies with the intensity of the involvement, the time of existence, and the character of the edema—whether acute, infective, or secondary to some other condition. Acute laryngeal edema is usually brilliantly red, smooth, and glistening—later becoming serum-soaked and puffy. The other forms are less intensely red, and may assume a bluish, congested appearance, as though strangulated. However, in reading over the appearance in about one hundred cases reported, one finds no invariable rule that will apply in each case. The epiglottis suffers the most in nearly all cases, and when the edema begins in the pharynx it descends rapidly to the larynx, leaving the pharynx uninvolved. The edema does not always stop with the larynx, but frequently invades the tissues of the neck, gravitates into the trachea, and even to the lungs—as is demonstrated in the trachea I present here to-night. Not infrequently a general septic condition occurs, with metastases in neighboring joints; likewise a general nervous depression which is of grave nature. This sepsis is manifested in the rigor, sweats, and high temperature following.

Treatment.—The treatment of these cases is fre-

quently of supreme moment, especially as they occur rapidly and without warning. In the acute primary involvement, cold compresses to the throat and leeches serve as external measures. Internally a brisk purgative, or even emesis, will abstract some of the accumulating serum. Pellets of ice, steam with benzoin added, adrenalin by spray to larynx, and ten drops of the same solution every hour internally are very important therapeutic agents. The hypodermic injection of one-fourth grain of pilocarpin has been advocated by Lennox Browne. Tincture of iodine locally after cocainization has also been advised. Venesection is of considerable value in these cases, and produced a favorable change in my first case, although the edema was secondary to a lingual abscess. Scarification or puncture is of unquestioned value wherever it can be accomplished; but in three of the cases coming under my care this was impracticable, as in the first the patient's jaws were so firmly set as to prevent my reaching the larynx, and in the other two a tracheotomy was imperative, so that it would have been criminal to have delayed the operation for any other therapeutic measures. Tracheotomy, while serious, should not be long delayed after the local measures have failed, as it is the ONE most effective measure. In all the cases tabulated by Rice,[10] upon whom tracheotomy was performed, only one did not recover, and he had a syphilitic necrosis of the arytenoid cartilage and died some days after the tracheotomy—probably from systemic conditions.

In those cases in which the edema is secondary to abscess in a neighboring location, the evacuation of the pus will usually result in the disappearance of the edema. Attention must likewise be directed to any constitutional disturbance underlying the edema —whether cardiac, nephritic, syphilitic, or rheumatic. There is a vasomotor neurosis known as angioneurotic edema. Osler has reported in all about twenty-nine of these cases, and classes them under the title "Visceral Complications of the Erythema Group of Skin Diseases." [11]

The peculiarities of this edema are the sudden appearance, absence of pain and temperature, the diffeernt locations involved—not confining itself to the throat—and the rapid disappearance. Quincke first described this affection as "An Acute Circumscribed Edema," and formerly it was known as Quincke's disease, but it appears that this edema is of an urticarial nature and selects the larynx as only one of its many points of attack. As most of all ills have been ascribed to malaria, so edema of the larynx has not been omitted. I am inclined to be skeptical regarding this statement.

Doubt still exists as to the exact cause of acute primary laryngeal edema, for which reason every effort should be made to obtain definite knowledge by autopsy and microscopical examination.

44 WEST FORTY-NINTH STREET.

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THE THREE-GLASS CATHETER TEST: AN IMPROVED METHOD FOR THE IDENTIFICATION AND SEPARATION OF URETHRAL AND BLADDER DETRITUS IN URETHRITIS.

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VARIOUS methods have been suggested from time to time to determine in cases of acute or chronic urethritis, whether the pus or shreds found in the urine passed are derived from the anterior urethra, posterior urethra, or bladder. These methods are all more or less unreliable, for the reason that they are not mechanically correct, and for the further reason that they are based on erroneous premises.

The simplest and most commonly used of these tests is the so-called Thompson two-glass test. In this test the patient passes a portion of his urine in a clean glass, and the remainder in a second glass. It is commonly declared that the first glass shows the condition of the anterior urethra, and the second glass, the posterior. At first sight this would appear to be correct, but experience teaches us that this test is extremely unreliable, to say the least, in many cases of acute and chronic conditions of the urethra. In a very acute urethritis of a few days' duration the discharge of pus may be so great that both glasses will contain cloudy urine, and yet the posterior urethra may be not at all invaded by the inflammatory process; and conversely, in a case of chronic posterior urethritis, the first glass may and usually does contain pus and shreds, and the second glass appears perfectly clear; this is explained by the fact that the first urine passed washes out the posterior urethra, and the second urine, passing over a cleansed urethra, appears in the second glass perfectly clear. One must be on his guard at all times, lest he misinterpret the findings of this two-glass test.

Another test, less commonly used, but also liable to misinterpretation, is the so-called Jadassohn-Goldenberg test. Briefly this is performed as follows: The anterior urethra is carefully washed out until the washings come out clear; this first glass shows the condition of the anterior urethra, undoubtedly. The patient next passes his urine, and it is obvious that whatever pus or shreds come out with this urine must necessarily come from the posterior portion of the urinary tract. This test, however, does not differentiate between bladder urine and the urine washed over the prostatic urethra. We are therefore at a loss to determine by this test this most important point in the diagnosis and treatment of urethral conditions.

This test has been modified to meet the objection just mentioned in the so-called four-glass test. In this test, the various steps are as follows: The anterior urethra is washed out, and the washings are contained in glass No. 1; the patient next passes about two ounces of urine in glass No. 2, this showing the condition of the posterior urethra; the patient next passes one or two ounces of urine in glass No. 3, this showing the condition of the bladder urine; the prostate is now massaged, and the patient passes his last urine into glass No. 4, this showing the condition

of the prostatic canal after massage. In this test we are asked to draw an arbitrary line between the bladder urine and that from the posterior urethra, as shown in glasses 2 and 3, without any definite knowledge or evidence of the fact that glass 3 shows the condition of the bladder, and glass No. 2, that of the deep urethra. In other words, we must take these findings for granted, in spite of the fact that the test is obviously not correct mechanically.

To remove this element of uncertainty, I have devised a method of examination, the three-glass catheter test, which, I believe, is based on mechanically sound principles, and the findings of which are liable to practically no possibility of error or misinterpretation. I have been employing it for some months in my private and hospital practice, and have yet to meet with a disappointment in the findings.

Briefly the test is as follows: The anterior urethra is washed out carefully until the washings come out clear,—glass No. 1; this shows the condition of the anterior urethra. A soft, sterile catheter of small caliber is now passed into the bladder, and the bladder contents are drawn off into glass No. 2; this shows the bladder urine plus any possible drippings from the posterior urethra, or any possible urethral detritus carried in by the catheter; the catheter *in situ*, the bladder is washed out thoroughly, until the washings come out clear; this shows us that the bladder is empty of all pus or shreds; we now inject about eight ounces of clear fluid into the bladder, and withdraw the catheter; we have thoroughly washed out the anterior urethra and the bladder. The patient now passes two ounces of the fluid into glass No. 3; this shows us the condition of the posterior urethra. We therefore have obtained mechanically the separate fluids from the three portions of the urinary tract.

If we deside to go into further detail, we may massage the prostate and have two ounces of fluid passed into glass No. 4; this will show the prostatic condition after massage.

I have been unable to find this method of examination reported in the literature on the subject, and am desirous of securing for it a thorough trial. I believe it is a decided step forward in the more certain diagnosis and treatment of urethral conditions.

24 East One Hundred and Nineteenth Street.

Tropical Splenomegaly.—W. E. Musgrave, W. B. Wherry, and Paul G. Woolley, after presenting the history of several patients, give the following clinical summary: This symptom complex, as it occurs in the Philippine Islands, shows that it is very closely related, if not identical with those forms occurring in other tropical countries, where it is variously known as kala azar, dum-dum fever, and so on. In the Philippines, as elsewhere, young people from fifteen to twenty-five years of age seem to be the most susceptible. The disease is almost invariably ushered in by an attack of remittent or intermittent fever, which clinically resembles malaria or dengue, and is accompanied by enlargement of the spleen. Recurrent exacerbations of fever at irregular intervals occur throughout the course of the disease. This fever is not influenced by quinine, and, in the Philippines, is recognized by the natives as a "cayana" or "quisig," and is held by them to be a disease distinct from malaria. The laity consider the disease a very fatal one, and often of very short duration, but more often chronic, the patient living for several or many years. The spleen usually enlarged quite rapidly, reaching its maximum size by the second or third attack of fever, and then very often no further change occurs, unless the idea of the natives is correct, that the organ grows harder. The liver may or may not be enlarged, but when it is, that change is secondary to the splenic enlargement. Jaundice, usually slight, but also well developed, is often present, sometimes even in those cases without enlargement of the liver. This fact accounts partly for the muddy, pigmented appearance of the skin and mucous membranes which is so commonly seen. There seems to be a special tendency to involvement of the mucous membranes in this disease. This is shown by the frequent gastrointestinal disturbances, conjunctivitis, and so on. The natives say that it also causes discharges from the vagina and sometimes also abortion. There is also a tendency to hemorrhages in both the mucous membranes and the skin. Three of the writers' cases had epistaxis and bleeding from the gums. One showed hemorrhages into the conjunctiva, and two, old cutaneous remnants of hemorrhages. This tendency may be explained in some cases by the jaundice. Edemas, at first transient, later more marked and persistent, are common occurrences, and are more common on the legs and face. Ascites and pulmonary congestion may also be remarked. Anemia, emaciation, and cachexia develop gradually in nearly all cases. Pain is a frequent but by no means a constant symptom. It is manifested by headache, arthralgia, and myalgias, and is apparently more common in the early stages of the disease. Clinically the condition seen in the Philippines is a fairly definite one, and is identical or closely resembles the kala azar of other tropical countries, and might from clinical findings alone be considered as a specific entity. The writers' studies in the etiology of the disease have been negative, and in view of the discoveries of Leishman and others in clinically similar conditions, it seems best, for the present, at least, to consider these cases as examples of tropical splenomegaly and to search for further etiological data.—*Bulletin of the Johns Hopkins Hospital.*

Lipoma of the Stomach.—Bénaky sent to the Surgical Society a stomach that was taken from a man sixty-five years old, who died on the evening of his entrance to the hospital. In the pyloric region of this stomach there was an oblong, sessile tumor, developed in the submucous cellular tissue. It was easily enucleable, and adhered to the mucosa at a very limited point only. There was no doubt from its appearance, its color, and its consistence, concerning its fatty nature. This was also confirmed by histological examination. The tumor was a pure submucous lipoma. Such cases are extremely rare. Hartmann, who reported this case, has been able to collect only five of the same kind in medical literature. These were cited by Cruveilher, Virchow, Tilger, and Fenwick. Tilger reported two cases, the other authors one.—*Revue de Chirurgie.*

Ocular Troubles After a Blow on the Head. Lumbar Puncture and Recovery.—M. J. Chaillous reported the case of a patient who was in the service of Morax. The patient, who fell on his head, remained for nine days in coma after the accident. When he recovered consciousness he suffered from severe headache and disturbance of vision. Fifteen days later, the headache and visual disturbances persisting, the patient consulted Morax. Examination discovered a double optic neuritis and a retinal hemorrhage of the left eye. Lumbar puncture was practised and fifteen c.c. of cerebrospinal liquid were withdrawn. Some days after the puncture the headache ceased, and ophthalmoscopic examination showed the disappearance of both the optic neuritis and the retinal hemorrhage. After every traumatism accompanied by symptoms of intracranial pressure, ophthalmoscopic examination should be practised. If optic neuritis is discovered, lumbar puncture should be made in order to reduce the intracranial pressure and to prevent the persistence of ocular troubles.—*La Presse Médicale.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

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PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, April 21, 1906.

THE RELATION OF INSECTS TO DISEASE.

SINCE 1894, when Manson announced his discovery that the mosquito was the intermediate host of *Filaria bancrofti*, the interest in the relation of insects to disease has been acute. The brilliant work done on malaria, and more recently on yellow fever, has augmented this interest, but it must not be supposed that a conception of such a relation is at all recent, or even modern. Bishop Knud in 1498 noted the coincidence between the appearance of huge numbers of flies and the plague at Aarhuus, in Denmark, and Koch, during his first stay in West Africa, called attention to the fact that the negros of the Usambara Mountains had the same word, "Mbu," for both the mosquito and malaria—the disease which they acquired when descending out of their fastnesses into the lowlands.

But only within recent years has this heretofore vague suspicion been put upon a scientific basis. In the few conditions—filariasis, malaria, yellow fever, sleeping sickness, and Texas fever—in which direct transmission by the intervention of insects has been proven, we are dealing, in so far as we know the causal factors at all, with species of microorganisms which, by their biological characters of metagenesis or alternation of generations, require an intermediate host and are unable to exist for any length of time outside of the living bodies of their harborers; and in these conditions hygienic measures for protection are much simplified by the probability that insects are the only mode of transmission, and that for each disease a recognizable species of insect may be held responsible.

The problem becomes somewhat more difficult of definite solution in the large number of bacterial diseases in which the resistance and viability of the causing agent make possible dissemination directly or indirectly by any of the vast host of insects that abound in the warm seasons. The question as to the direct transmission of any of these diseases by insects must, in the light of our present knowledge, be left unanswered. Negative evidence is furnished by the experiments of Nuttall, who allowed bedbugs and fleas to suck the blood of animals which had been killed with anthrax bacilli. Immediate transference of these to live mice remained absolutely without result. Similar experiments were made by him and others with other insects, and in a great variety of infectious diseases—all with negative results. Indirect transference, however, the infection of food and other secondary agents by insects, is another problem, and much evidence has accumulated to show beyond doubt that insects of all descriptions, suctorial or non-suctorial, are too important as distributors of disease to be hygienically neglected. Yersin, in 1894, found that flies caught in the mortuary where autopsies on plague cases had been held were infected with *Bacillus pestis*. Nuttall showed, in 1897, that the same bacillus could be found in virulent form in the bodies of flies forty-eight hours after their feeding on infected material. It has further been shown beyond doubt by a number of observers that the plague organism, the cholera vibrio, the anthrax bacillus, staphylococci, and streptococci, can pass uninjured through the bodies of flies, beetles, fleas, roaches, and a variety of other insects, and appear in virulent form in their feces. Celli fed flies on *Bacillus typhosus* and recovered the bacillus in a virulent state from their feces. The same experiment was performed for tuberculosis by Spillman and Haushalter in 1897. Hoffman, in 1898, found tubercle bacilli in four out of six flies that were caught in the room of a patient recently dead of phthisis. Dewévre examined bedbugs caught in the sick room of a tuberculous patient by injecting their bodies into guinea pigs. Sixty per cent. of his inoculations were positive. Uffelmann infected a common house fly with cholera allowed it to drink from a glass of milk, and, after letting the milk stand for sixteen hours, recovered one hundred cholera colonies from each drop of milk. Pound, while recently experimenting with plague, lost a number of his control animals. Inquiry into the cause of this revealed the fact that a number of cockroaches had been able to pass from cage to cage, establishing communication between the infected and the control animals. In a recent article in the *Centralblatt für Bakteriologie*, etc., Bd. XL, Hft. 1, Hunter adds a number of facts relating to plague, and draws conclusions which might well be taken as applicable equally to diseases more common in the Western Hemisphere. Attention was very aptly called to our general neglect of this most important problem by Veeder, in a letter published in the MEDICAL RECORD for September 17, 1898, in which he described, among other things, the open sinks of our military camps during the Spanish War, where shallow trenches filled with feces and buzzing with flies were placed within a stone's throw of the mess tents, without an attempt at the protection of the food.

While much work remains yet to be done, and many facts still remain unexplained, nevertheless, even the limited number of observations at our disposal are sufficiently striking to deserve serious consideration. It is surely just to say that there is more than a probability that germs of many infectious diseases, notably cholera, typhoid fever, and even tuberculosis, are spread indirectly by insects of all varieties, and the first practical application of these laboratory facts by prophylactic medicine should be in the rapid destruction of infectious material, its isolation from flies, and, with reference to typhoid fever especially, the proper protection of food during the warm seasons.

Epizootic lymphangitis is devastating the stables of the South of Ireland, and has stopped hunting for the time. It was introduced into the country by the horses of a battery from South Africa.

ARMY MEDICAL SCHOOLS.

It has been conclusively demonstrated on several occasions during the past few years that a properly equipped and trained medical department is of the utmost service to an army in the field. But as regards the effect of these demonstrations on our national lawmakers, it cannot be said that they have served as a lesson or a warning, and Congress has not yet gotten out of the habit of bestowing favors on this branch of the Army in a most grudging fashion. True, we are not a military nation; nevertheless, it is quite universally admitted that we require a standing army for a variety of purposes. Its personnel, its equipment, and the work accomplished are acknowledged to be of the best, but to the medical department there has never been extended the same attention that has been more freely given to the other branches of the service. Hampered in many ways, is it to be wondered at that the niggardly policy maintained towards the Army surgeons met its merited deserts in the lamentable conditions prevalent during and after our conflict with Spain? It is, or at least it ought to be, universally recognized that special fitness and training are required to enable one to fulfill properly the duties of a military surgeon, but for years we have been taking our candidates from civil practice and then leaving them to gain the necessary technical knowledge in a haphazard manner. Efforts have been made within the Department itself to supply this want, and an Army Medical School was established in Washington a few years ago, in which the newly commissioned surgeons are given systematic instruction in military medicine. This school has already justified its establishment, and we have several times referred to the good work it has done and is doing. No one will deny the wisdom of founding an institution of this kind, the necessity for which was long ago recognized by other nations, and among the latter we may note the examples of Russia and of France. The latter has had an army medical school in operation since 1856. This is located at Lyons and is described in a recent article by an English army surgeon, Capt. J. C. B. Statham, in the *Journal of the Royal Army Medical Corps.*

In France the army surgeon commences his military career at seventeen and spends four years studying medicine. The purely professional part of this work is done at the University of Lyons, and the Government pays all the fees. As a recompense for this cheap education, the cadet promises to serve six years as a medical officer, or in default to pay the entire expenses of his training. In addition to their work at the university, the cadets are taught various special subjects in the school proper, including drill, riding, corps and field service duties, and after graduation they are sent to the French staff college at Val de Grace, where another year is devoted to military medicine, surgery, and hygiene. It will thus be seen that the French medical officer has about five years of combined military and medical training before he is appointed to a regiment. A few commissions are still given by open competition among civilian doctors, but this method of recruiting the service is not encouraged and will probably soon stop, for it is quite agreed that the officers who come through the Lyons Academy are better trained and better qualified for their duties. Moreover, the school and its traditions have brought about an *esprit de corps*, and this is a factor which promotes efficiency. The Government gains by this method in having a steady supply of medical officers of experience and trained in their special duties. Although there may be some objections to adopting a plan of this kind in its entirety at the present time for our American Army, it contains mank suggestive features.

A NEW ALIEN ACT IN GREAT BRITAIN.

Complaints from all quarters have been made for some time that foreigners were being admitted into Great Britain far too freely. So lax were the provisions of the old act that few had difficulty in obtaining entrance into the country. The consequences were, regarding the matter solely from the standpoint of health, that a poverty-stricken horde of individuals of unsanitary and dirty habits settled in the already overcrowded quarters of the large cities, principally of London, and assisted to accentuate the existing unhealthy conditions. Indeed, London has been made for some years the dumping ground for undesirables of all sorts and conditions. Persons have been freely allowed to make their homes on British soil who would have been rejected with the greatest promptitude by the health authorities of the United States.

The new Alien Act for Great Britain came into force on the first day of January last, and so far as can be judged from its limited trial, has had to some extent the desired effect. Its provisions are stringent, although not nearly so exclusive as those that prevail in this country. Putting on one side the sociological aspect of the question, it may be said that the working of the new English Alien Act has had the result of preventing many persons undesirable from a health point of view from undertaking the voyage, since it is understood by agents and captains of vessels carrying immigrants that unless their passengers are in a sound state of health they will not be permitted to land, but will be sent back to the ports whence they sailed at the expense of the steamship companies.

The *Lancet* of February 3 contains an article dealing with the alien question and the new Alien Act, in which some interesting facts relating to the subject are set down. It is stated that there arrived at the Port of London during the month of December, 1905, 3,315 aliens, and that during the entire year 1905 London received 42,422 aliens, or 835 a week. The methods of medical inspection in vogue at the Port of London are closely described and provide instructive reading, but space is lacking to enter fully upon this phase of the matter. Suffice it to say that the most frequent pathological condition which has been encountered since the act has been in force has been valvular disease of the heart. "Perhaps," however, says the writer of the article, "the most striking feature in connection with the passage of the act has been the disappearance of cases of trachoma among the immigrants. In fact, hardly a case of this troublesome and contagious affliction has been seen on the immigrant ships since January 1, whilst formerly cases were met with on nearly every vessel."

The majority of those who go to London with the intention of living there are Russian and Polish

Jews, or Jews from other parts of Eastern Europe. Statistics for 1904 show that of 82,848 aliens known to have settled in Great Britain 46,095 were either Russians or Poles. As is well known, Jews always congregate in cities, so that it can be easily comprehended that immigration to Great Britain simply means a further congestion of already congested city districts and is a menace for reasons both of health and of economy. Many authorities on social and sanitary matters are of the opinion that the new British Alien Act, although a step in the right direction, does not go far enough and that it might be well to copy more closely the laws of the United States with regard to restricting immigration.

THE COMPLICATIONS OF OVARIAN TUMORS.

The number of pathological conditions for which early operation is advocated is being steadily increased and the futility of delay is perhaps no more clearly shown than in the domain of ovarian neoplasms, for the complications to which ovarian tumors are liable, and they occur in a large proportion of cases, are all of a serious nature. Of these malignancy is perhaps the most important, and next in order are torsion, rupture, and suppuration. The frequency of all of these is well demonstrated in a series of sixty-three consecutive cases of ovarian tumors, excluding the simple retention cysts, which have been observed and studied by C. C. Norris (*University of Pennsylvania Medical Bulletin*, January, 1906). His conclusions confirm the advisability of early operation in all cases of ovarian tumors unless there is a strong contraindication present. For it is shown that in these sixty-three cases there were ten cases of malignancy, ten of torsion, one of rupture, and one of suppuration. In other words there were twenty-one cases (one case of malignancy being combined with torsion) which would have terminated fatally in a short time if an operation had not been done. Of the remaining forty-two cases it is of course impossible to state the probability of fatal complications if operative interference had not been adopted sufficiently early. A very favorable aspect is given to the case by the low operative mortality, which was only 3.17 per cent. for the entire series, and two of these cases were extremely septic before operation.

Some of the author's conclusions as regards the question of malignancy in ovarian tumors are of value and interest. Thus he believes that as one in every four to six cases of ovarian neoplasm is malignant, we are warranted in regarding all cases of ovarian tumors as malignant unless proven otherwise. The operative mortality of the malignant cases should not be above ten or twelve per cent., although the number of "cures" at the end of five years will be relatively small. Carcinoma will provide the largest proportion of these recurrent cases. As regards the so-called "border line" cases, Norris also considers early operation of value, although all the clinical evidences of malignancy may be present and yet the case prove benign on operation, or even the gross specimen may appear malignant until a histological examination has shown it to be otherwise. This seems to be especially true of adenopapillomata, which frequently closely resemble adenocarcinomatous papillomata in their gross and clinical features.

The large percentage of malignant cases in Norris's series may be ascribed to the very careful and extensive microscopical examinations which were made of his specimens, and the suggestion is therefore quite opportune, that a diagnosis should be based on a number of sections taken from different portions of the growth rather than from a single one. Another interesting fact brought out in this paper deals with the apparently greater benignity of the parovarian tumors. Thus among nineteen cases of the latter in this series there were no instances of malignant degeneration or other complications. Torsion, next to malignancy, seems to be the most frequent and dangerous complication of ovarian tumors, and although it occurs in a mild form more often than is generally supposed, its character and possible outcome should always be borne in mind in any given case. Taken in connection with the statistics already published by Olshausen, Leopold, Freund, Werder, and others, Norris's results should be the means of attracting renewed attention to this most important phase of gynecology.

Another Suggestion for a Combination Anesthesia.

It is quite evident that the ideal anesthetic has not been found, if we are to judge by the constant efforts to devise some method which shall be free from all objectionable features. Most of these efforts are concerned with the combination of two elements, and now we are favored with a procedure in which four are employed. H. A. Royster (*Surgery, Gynecology, and Obstetrics*, February, 1906) believes that a satisfactory effect can be gained from the use in sequence of scopolamine-morphine, ethyl chloride, and ether. He bases his claim on the fact that ether is usually considered to be the safest general anesthetic, that ethyl chloride secures the pleasantest primary narcosis, and that the preliminary use of scopolamine with morphine quiets the patient's nerves and fears and thus lessens the quantity of ether necessary to keep up a complete anesthesia. Of the superiority of ether over chloroform as a general anesthetic, there seems to be very little doubt at the present day, but there is no doubt that its administration alone, without a preliminary, is accompanied by two great objections — the distress caused in the primary stage and the length of time and the quantity required to produce the desired effect. The popularity enjoyed by nitrous oxide gas as an ideal agent for inducing preliminary narcosis has lately been more or less affected by the good results which have followed the use of ethyl chloride for the same purpose. It is claimed that the action of the latter is more agreeable, more constant, and perhaps safer. There is no need, moreover, for a complicated, expensive apparatus. The combination of morphine and scopolamine has also recently excited much comment, and under its influence alone many operations have been done, but the consensus of opinion seems to be that its value resides largely in its employment as a preliminary to another anesthetic. It not only quiets the patient and thus promotes his courage in taking another anesthetic, but it also favors a restful sleep afterwards. Care should always be exercised, however, when it is being used, as in a number of instances untoward symptoms have been observed to

follow its administration. As Royster says that he has used his method with excellent success in a series of about fifty cases, it is certainly deserving of further attention and trial.

The Smoke Evil.

A considerable number of arrests have been made for violations of the smoke ordinance and the offending owners of furnaces have been held for trial. The usual plea made by the culprits was that it was difficult or impossible to secure hard coal, a manifestly lame excuse, since it is well known that under proper methods of stoking soft coal can be used with about as little offense as anthracite. There is no prohibition against the use of soft coal, but only against pollution of the atmosphere by soft-coal smoke. The nuisance has existed a long time, apparently because the Health Commissioner neglected his duty in the matter, but now that he has begun to move against the violators of the law he should have the support of the public and judiciary. The matter is one of sufficient importance to require adequate punitive measures, and we trust that the incorrigibles will be dealt with as strenuously as they deserve.

An Attempt to Nullify the Medical Practice Law.

The Hinman Bill, regulating and legalizing the practice of osteopathy has passed the State Senate by a vote of thirty-two to twelve. It has not yet passed the Assembly, but if it does it is to be hoped that Governor Higgins will veto it. If osteopathic practitioners are as highly educated, medically, as they claim to be they should be able to pass the Regents' examination with no difficulty and thus secure an unquestionable right to practise the healing art in this State; if they are not sufficiently instructed to pass that examination they should not be allowed to practise medicine on an equality with educated physicians.

News of the Week.

Tuberculosis Exhibition in Chicago.—A tuberculosis exhibition was opened April 2, in the Chicago Public Library Building, under the auspices of the National Association for the Study and Prevention of Tuberculosis, the Chicago Tuberculosis Institute, and the Illinois State Association for the Prevention of Tuberculosis. This exhibition contains everything pertaining to the cause, nature, and effects of the disease, as well as the means now used throughout the country for its prevention and cure. The exhibition will continue for twenty-six days, during which time special lectures and conferences on tuberculosis will be held, and exhibits demonstrated. The principal conferences to be held are those on the "Outdoor Treatment of Tuberculosis," "Workers and Tuberculosis," "Tuberculosis and Charity Organizations," "The School and Tuberculosis." On April 14 a Western Tuberculosis Conference was held, over which Dr. H. B. Favill, Chicago, presided, and at which Drs. Lawrence F. Flick, Philadelphia, and S. A. Knopf, New York, delivered addresses. The Chicago Tuberculosis Institute contemplates establishing a free dispensary for the tuberculous patients in some crowded districts. It also plans an open-air day camp, an information bureau, a lecture bureau, and an experimental station.

The New York City Tuberculosis Sanatorium.—It is announced that the city's tuberculosis sanatorium which is in course of construction at Otisville, will, in about six weeks, be ready to accommodate one hundred patients in temporary quarters. The patients will be chosen from those attending the Board of Health's tuberculosis dispensary at Sixth avenue and Fifty-fifth street.

Another Tuberculosis Cure.—Cable despatches report that Dr. Ishigami, a Japanese bacteriologist, has succeeded in obtaining an antitoxin for tuberculosis which gives good results in early cases.

Society of Sanitary and Moral Prophylaxis.—At a meeting of this society held in the Academy of Medicine on April 12 the matter of legal intervention in the effort to restrict the spread of venereal diseases was discussed. Addresses were made by Dr. John A. Wyeth, Dr. E. H. Grandin, and Ex-Senator William Lindsay of Kentucky. The general opinion expressed was that legal aid should be sought in this connection only as a last resort.

Chicago Health Department Hampered in Efforts to Control Infectious Diseases.—On this subject the Chief Medical Inspector, Dr. Heman Spalding, says that "the present most serious evil which hampers the department in its efforts to control the infectious diseases is the want of intelligence or lack of conscience upon the part of some physicians in their management of these diseases. The department is called upon to disinfect premises before the infectious period has passed. If a disinfection is made while a patient is giving off infection, the department would be guilty of aiding in the dissemination of disease. If we refuse to disinfect prematurely, the doctor making the order for disinfection is placed in an unfavorable light before the family, and the latter charges either the attending physician or the department with blundering. The department has made rules for the guidance of families as to the duration of infection in cases of infectious diseases, and these rules can be safely followed by physicians. If they do so, it will be a great help in preventing the spread of infection. At the present time we have no less than twenty-five requests for disinfection from physicians, which are held up because visits to the houses showed that the patients were still desquamating or scaling from scarlet fever, and therefore not ready for disinfection."

Maine Medical Association.—By vote of the Board of Censors of the Maine Medical Association, the dates of the annual meeting have been advanced to the second week in June—June 13, 14, and 15. This change has been made so that the dates will not conflict with those of the American Medical Association, which meets in Boston during the first week of June.

Mississippi Medical and Surgical Association.—The sixth annual meeting of this association will be held at Natchez, Miss., on Wednesday and Thursday, April 25 and 26, under the presidency of Dr. J. M. May of Westside. The secretary is Dr. H. E. Connor of Brookhaven.

Pathologist at the Craig Colony.—Dr. J. F. Munson, a graduate of the Literary and Medical Departments of the University of Michigan at Ann Arbor, who has been acting as assistant

to Dr. Victor C. Vaughan during the past two years, has been appointed resident Pathologist at the Craig Colony for Epileptics, at Sonyea, N. Y.

The Sixth International Congress of Criminal Anthropology will be held at Turin from April 28 to May 3. At the inauguration ceremonies special honors will be rendered to Professor Cesare Lombroso on the occasion of his scientific jubilee. He has been made, for the time being, Professor of Criminal Authropology of the University and will be presented with an artistic and symbolical shield and a gold medal, both by Bistolfi, as well as an album of signatures. Many festivities in honor of the large number of guests expected have been planned and include a tea in the reconstructed medieval village which has been erected on the banks of the Po, and excursions in the valley of Aosta, which is a region unusually rich in points of natural and historical interest. Information concerning the Congress is to be obtained from the Institute of Legal Medicine of the University of Turin, via Michelangelo, 26.

Dr. P. Aaser of Christiania, Norway, who was to have delivered an address on the relationship between the acute infectious diseases and tuberculosis, before the International Congress at Lisbon, is only now recovering from a severe illness of nine weeks' duration which has made it impossible for him to attend the Congress.

International Medical Association for the Suppression of War.—At the annual meeting of this society held in Paris on March 21 the president, Dr. J. Rivière delivered an address calling on the physicians of the world to unite in an effort to discourage the resort to arms and to substitute for it the settlement of international difficulties by arbitration.

Bubonic Plague at Philadelphia.—Three deaths from what is reported to be bubonic plague have occurred among the sailors of the British steamship *Burnsfield* from Bombay, which is now lying off the Reedy Island Quarantine Station. Dr. Rupert Blue of the Marine Hospital Service has been sent to take charge of the three other victims of the disease now on board the vessel.

Alcoholic Beverages in Germany.—According to statistics received from Consular officers in Germany, each inhabitant of that country consumes a yearly average of six and one-half quarts of wine, one hundred and twenty-nine and one-half quarts of beer, and nine quarts of brandy. For a population of 60,000,000 people, the liquor expenditure is $672,588,000. The average for male citizens over fifteen years would be $37.36. By contrast, German expenditures for schools were $99,722,000, for working people's insurance $104,244,000, and for the army and navy $203,847,000.

Patent Medicine Bill.—The Senate Committee on Public Health has reported favorably the Stevens-Wainwright bill providing that patented medicines containing alcohol or narcotics be labeled, showing their ingredients. It has been amended by providing that the stock of patent medicines which druggists now have on hand may be sold up to July 1, 1908, providing that each package is marked to distinguish it from goods bought after the bill takes effect. The bill has also been amended by eliminating the provisions that an analysis by the State Chemist of a patent medicine shall be presumptive evidence against druggists in criminal prosecutions.

Hospital Saturday and Sunday Funds.—The distributing committee of the Hospital Saturday and Sunday Association on April 12 alloted $81,000 to thirty-nine hospitals. The largest amounts went to the Montefiore Home and Mount Sinai Hospital, each of which received a little over $8,000.

State Board of Charities.—The State Board of Charities on April 12 reelected Dr. Enoch V. Stoddard of Rochester as president and Dr. Stephen Smith of New York as vice-president for the ensuing year. The board has adopted a resolution declaring in favor of an amendment to the pending bill providing for the care of six hundred epileptics at Craig Colony, so as to provide for the separate care in buildings and localities of the male and female patients, in accordance with the conditions already existing at the colony.

Report of the Massachusetts General Hospital.—The deficit of this institution for 1905 was $23,446.07 as against $21,109.08 in 1904, but as a considerable amount of the money expended was for the construction of new buildings the annual report is considered a very favorable one. Donations during the year amounted to $415,030.20. The total number of patients treated was 5,843, of which 3,073 were free patients.

The St. Clair (Mo.) Medical Society has elected the following officers: *President*, Dr. Hugo Wangelin of Belleville; *Vice-President*, Dr. J. W. Rendleman of East St. Louis; *Secretaries*, Dr. Jas. Twitchell and Dr. C. W. Lillie; *Treasurer*, Dr. A. E. Hansin of East St. Louis.

The Charaka Club.—At a regular meeting of the Charaka Club held on April 11 at the residence of Dr. Smith Ely Jelliffe, the members of the club and guests were entertained at a Japanese dinner. The paper of the evening on Bernardo Ramazzini, an eminent Italian physician of the seventeenth century, was read by Dr. Walter B. James, who also exhibited some rare medical books, including a perfect copy of the first edition of Harvey's "De Motu Cordis et Sanguinis."

Dr. A. M. Fernandez de Ybarra of this city on March 5 delivered a lecture on "The First Written Document about the Flora, the Fauna, the Ethnology, and the Anthropology of America," before the Biological Section of the New York Academy of Sciences, at the American Museum of Natural History.

Bequests to Charity.—Nearly all of the $900,000 estate of the late Mrs. Lucy H. Boardman is to go to various religious and charitable organizations. Some of the institutions that will profit are: The New Haven General Hospital Society, which receives $155,000 for a new building and $25,000 for maintenance; Grace Hospital, $10,000; New Haven County Antituberculosis Society, $25,000; New Haven Dispensary, $10,000.

The American Mosquito Extermination Society held its third annual convention on April 11 at the New York Aquarium. The delegates present considered the question of mosquito extermination and adopted a succinct form of statement concerning the habits and varieties of mosquitos and the best means of combating their multiplication. This is intended for distribution among the members of the society.

The Study of Alcoholism.—The University of Berlin has instituted a course of lectures on the study of alcoholism. Every phase of the question is to be considered, including the influence of alcohol on the intellectual development of the young, its relation to insurance, its connection with State hygiene, and the relation of alcohol and the penal code.

The Chicago Stockyards.—At a recent meeting of the Chicago Medical Society, Dr. W. K. Jaques, formerly City Bacteriologist, accused the United States Government of contributing to those lax conditions which are alleged by Upton Sinclair in "The Jungle" to exist at the stockyards. Dr. Jaques declared that, under the present rules of inspection, meat infected with tuberculous germs can easily be passed into the public supply. No better method could be devised, he said, for breaking down an animal's resistance to tubercle bacilli than the experience through which it passes in coming from the farm to the stockyards. The only excuse, he said, that can be given for the present standard of government inspection is ignorance on the part of the public and the medical profession as to actual conditions.

Obituary Notes.— Dr. Robert C. Davis of this city died at Roosevelt Hospital on April 13, of pneumonia. Dr. Davis was forty-seven years old and had been an inspector in the Health Department for twenty years.

Dr. Milton C. Wedgewood of Lewiston, Me., died on April 9, at the age of seventy-four years. He was graduated from the Bowdoin Medical School and in 1862 became assistant surgeon in the Eleventh regiment of Maine Volunteers. After the Civil War he settled in Lewiston, where he had since resided. Dr. Wedgewood was several times president of the State Medical Association and had held numerous professional and other offices.

Dr. Charles H. Blaney of Los Angeles, Cal., died on March 31, at the age of thirty-one years. He was a graduate of Washington and Jefferson University, and a member of the class of 1894 of the College of Medicine of the University of Southern California. At the time of his death he was assistant superintendent of the County Hospital.

Dr. C. A. Snodgrass of St. Louis, Mo., died on April 6, of pneumonia, after an illness of eight days. He was Health Commissioner of St. Louis and during the past winter had been engaged in an active campaign against the disease from which he died.

Dr. Job J. Boozer of Laurens, S. C., died on April 2, at the age of seventy-three years. About a year ago he gave up his practice at Clinton, where he had been engaged in active work for over forty years. He had been president of the Laurens County Medical Association for many years.

Dr. Oscar H. Bradley of Jaffrey, N. H., died on March 29, at the age of eighty years. He was graduated from the Castleton Medical College, at Castleton, Vt., in 1851, and later received the honorary degree of M.D. from Dartmouth College.

Dr. Hugh A. McEachren of Detroit, Mich., died on April 9, at the age of thirty-six years. He was born in Canada and was graduated from the Detroit Medical College in 1892.

Dr. A. S. Elwood of Golden, Cal., died in Denver on March 26, at the age of eighty years. Dr. Elwood was born in Petersburg, Ohio, and began the practice of medicine in Monroe, Iowa, in 1857. He served through the Civil War in the Fortieth Iowa Infantry as assistant surgeon, and then returned to Monroe, where he practised until 1884, when poor health compelled him to go to California.

Dr. J. M. Black of Knoxville, Tenn., died on April 6, at the age of thirty-nine years. Dr. Black was born in Knox County, Ky., and had practised in Knoxville for fourteen years.

Dr. E. R. Wallizer of Des Moines, Iowa, died on April 5, at the age of sixty years. He gave up active practice two years ago and had been in precarious health ever since.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

MEDICAL COUNCIL—DOYEN'S SERUM—COLITIS—CONGENITAL SYPHILIS—CHARITY VOTING REFORM—A PROPOSED NEW HOSPITAL—PREVENTION OF CONSUMPTION—OBITUARY.

London, March 30, 1906.

Some six months hence there is to be an election of direct representatives of the registered practitioners to the general Medical Council. The British Medical Association has for some time been scheming to control the election. You will remember its electioneering proceedings have always been objectionable, and sometimes scandalous. The plan now actively going on is for the divisions to nominate candidates from which two are to be selected for the Association to push. It is a pretty scheme for the wire-pullers to engineer with an appearance of impartiality. Candidates nominated by divisions must sign a declaration that if elected they will in every way endeavor to give effect to the opinions and wishes of the Association, and also if not selected out of those nominated by divisions will not permit themselves to be brought forward against the two chosen by the executive of the Association. Thus under a pretense of a fair election the executive is determined if possible to exercise the power of the registered practitioners, and these last are so apathetic that the scheme is likely to succeed. But this is by no means the only way in which the Association seems to be growing into a danger to professional independence, and yet the reformers make no sign.

Doyen's serum has been brought before the Medico-Chirurgical Society by Drs. Alex. Paine and D. J. Morgan, who gave a summary of Dr. Doyen's work on malignant disease and related nine cases treated by his plan at the cancer hospital here, and an investigation as to the presence of *Micrococcus neoformans* in morbid growths. This organism was detected in 25 per cent. of various growths, malignant and non-malignant. A streptococcus appeared in 30 per cent. Some other microbes, were found, but 36 per cent. of the cases were sterile. The cases treated comprised those in which no influence on the progress of the disease could be observed; those in which injections were followed by pain; and some in which severe constitutional disturbance followed. In 200 animals inoculated with the serum only inflammatory reaction followed. It consequently seems that *Micrococcus neoformans* cannot be considered the cause of cancer.

Dr. Pattison gave an account of four cases in which the serum was tried. One was of cancer of the tongue in a man of sixty-eight, an inveterate smoker. He was taken to Paris and treated by Dr. Doyen with relief of pain and fetor as well as some general improvement. But a secondary patch in the alveolus of the lower jaw appeared, and death in a few months took place. The second case was in a woman of forty-eight. The uterus had been removed for malignant growth, but abdominal cancer developed with great pain and vomiting. She improved for a time, but relapsed. The two other cases presented no improvement, unless, perhaps, some relief of pain.

Other speakers mentioned that all Dr. Doyen's patients acknowledged relief of pain some risk occurred, an overdose acted like Coley's fluid, and microscopic appearances were not altered

Colitis was the subject of a paper at the Medical Society, by Dr. A. H. Caley, who considers that in some forms it is more common than is at present recognized. He discriminated between several clinical types, in some the inflammation being confined to the colon, in others being part of a general peritonitis. In chronic catarrhal colitis one form is characterized by loose mucous evacuations or periodical diarrhea, another by constipation accompanied by excess of mucus in the stools. This last might merge into the membranous form, and it is in relation with other intestinal disorders, especially of the appendix. It sometimes simulates appendicitis, particularly the chronic form. Membranous colitis is associated with chronic constipation, neurasthenia, and acute paroxysms of pain, besides more persistent local symptoms. Pericolitis spreads through the coats to the peritoneum; in the region of the cecum it is clearly the old perityphlitis. To avoid confusion Dr. Caley would distinguish between pericolitis dextra and sinistra. Ulcerative colitis formed another group, and for accurate diagnosis called for careful scrutiny of symptoms and systematic examinations of dejecta. In all forms these should be added to physical examinations of the colon.

Dr. Savill said he had found in 140 cases of neurasthenia 40 per cent. had been traceable to early colitis or other gastrointestinal disorders. He had no doubt the bowel

trouble was the cause of the nervous symptoms, for these disappeared under treatment directed to the colon.

Mr. Swinford Edwards advocated large enemata of antiseptic solutions which he found generally successful. He said the mucous membrane could be seen and applications made by the proctoscope and sigmoidoscope.

Dr. F. J. Poynton said large enemata were questionable if ulceration was suspected. Large and frequent doses of magnesium sulphate he thought the best treatment.

Dr. F. De Havilland Hall said colitis resembled the mucous disease in children described by Eustace Smith. He prescribed careful feeding, hot fomentations, and in certain cases copious enemata of weak boric acid solution.

Dr. J. J. Perkins read a paper at the same meeting on congenital syphilis and such results of the acquired disease as are amenable to medical treatment. Congenital lesions may appear in middle life or later. Fournier recorded cases at sixty. Argyll-Robertson pupil, though doubtless due to cerebral syphilis, might occur, Dr. Perkins considered, alone and apart from any general or progressive nervous disease. He insisted on the frequency of arterial thrombosis as a cause of nervous disease, and on syphilis as a cause of neuralgia and signs of pressure. High fever might be caused by syphilis, and would yield only to specific treatment. Abdominal gummatous tumors might be mistaken for malignant growths. Dr. Perkins thought he had seen amyloid disease of the kidney disappear under treatment.

Dr. Savill said Lancereaux described intermitting pyrexia in early and late cases and was confirmed by Bristowe and Murchison.

Dr. C. W. Chapman said the history of a small itching sore in the penis was a useful diagnostic indication. Dr. Pernet said that congenital syphilis might resemble that acquired in early childhood. He did not put much reliance on the history of a primary lesion in either men or women. Iodide alone was not a specific; mercury was the only true one.

Dr. Poynton, Dr. Paramore, and Dr. Dett. Hall agreed as to mercury, and the first named mentioned two cases of cretinism in syphilitics. The president, Sir L. Brunton, thought perhaps iodide did good by bringing into the incubation mercury which had been stored in the tissues, and he mentioned a case in which five-grain doses of iodide had been taken for years without effect, but on increasing it to fifteen grains recovery was rapid.

The Charity-voting Reform Association, founded in 1873, has steadily pursued its object of inducing the supporters of charities to abandon the voting and canvassing system, which involves great hardship on many hard cases and tends toward a trafficking in proxies by enthusiastic workers for individuals. The report for the past year has just appeared and enumerates some of the institutions which have adopted the reform. In most of these candidates are selected after an investigation of the claims of applicants by committees appointed for the purpose. In others contributors place their proxies in the hands of the managers or one of them. In some, as the National Hospital, the rule is adopted that any canvassing, trafficking in, or exchange of votes for those of other charities, disqualifies the candidate for whom it is attempted.

People who have money for the establishment of new hospitals are sometimes much misinformed as to the necessity of their proposed charity. A case in point is that of the late Mr. Chester, who left a sum for building and endowing a general hospital on Putney Common, where there is no need for such a charity, which would only tend to pauperize the neighborhood. A meeting of the local practitioners brought out a good deal of opposition to the scheme, and it was agreed that the most that would be useful would be a cottage hospital with a dozen beds. Moreover, that is quite as much as the legacy is likely to support, and yet there are some people who would ask the public to subscribe £20,000 for a site and buildings for such an institution. Above all, the profession is unanimously opposed to an out-patient department. If the hospital is not established within twenty years of the testator's death, which took place in 1900, the money is to go to Guy's Hospital. I would urge all interested to let it go to Guy's, where it would unquestionably do good rather than harm.

Lord Derby presided at the seventh annual meeting (on the 20th inst.) of the National Association for Prevention of Consumption. The debt has been cleared off during the year and a small balance remains. This favorable condition results from the meeting at the Mansion House, when the Lord Mayor presided and a sum of £765.80 was subscribed.

Lionel S. Beale, F.R.S., died the night before last, aged seventy-eight. He has been a great figure for many years. A long life of strenuous work in the metropolis is thus brought to a close—one may almost say a life in King's College and Hospital, of which respectively he was Emeritus Professor and consulting physician. He was born in London (in 1828) where his father was in practice, educated at King's College school and then at the King's medical department. Here he left his mark. When twenty-four years old he opened a private laboratory for original investigation and the teaching chemistry and microscopy. About a year later he was appointed to a professorship in his college—that of Physiology, from which he was afterwards transferred to the chair of Pathological Anatomy and later still to that of Medicine. This he resigned in 1896 after forty-three years of professional work. For forty of these years he was on the staff of the hospital as well. He had been Croonian lecturer to the Royal Society and Lumleian lecturer to the Royal College of Physicians, which conferred on him the Baly medal.

His works on the "Microscope," "Bioplasm," "Life, Matter and Mind" will be household words to many of your readers. The elder ones will also remember the "Physiological Anatomy and Physiology of Man" and the "Archives of Medicine," which he maintained for a considerable period. He contributed to the proceedings of the Royal Society, and to the several medical journals, and edited Todd's "Clinical Lectures."

Dr. J. M. Martin, J.P., F.R.C.S., M.D., of Blackburn, died suddenly on the 20th inst. from cerebral hemorrhage, aged fifty-eight. He had been for above twenty years Surgeon to the Blackburn Infirmary, retiring in 1904. He was educated in Edinburgh, Liverpool. He qualified in 1847, but later on added higher diplomas and degrees. His "Ambulance Lectures" passed through four editions. He took an active part in the life of Blackburn, was specially interested in the Volunteer Movement, and was Surgeon-Major in the Army Medical Reserve.

THIRD ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(From Our Special Correspondent.)

WATER SUPPLIES IN THE PHILIPPINES—INFANT MORTALITY IN MANILA—MEDICAL PRACTICE IN THE MARSHALL ISLANDS—RADIOACTIVITY—MALARIA—AN EPIDEMIC OF ESTIVOAUTUMNAL FEVER.

MANILA, P.I., March 2, 1906.

THE first scientific session of the third annual meeting of the Philippine Islands Medical Association was begun Thursday afternoon, March first, at 3 P.M. The first paper read was "Some Observations on the Water Supplies in the Philippine Islands," by Dr. John D. Long, of the Public Health and MarineHospital Service, also Assistant Director of Health. He said that so far as it had been possible to determine, at the present time only six towns in the Philippines had water supplies worthy the name. He stated that the Manila water system was built by the Spaniards, the work being begun in 1880, but even while this was classed as among the towns having a proper water supply, it was far from being satisfactory, because the water-shed was inhabited and cholera and other water-borne diseases had been encountered on its slopes from time to time, and this has been one of the most serious and vexatious problems with which the health authorities have had to deal in the two cholera epidemics which have visited the Philippine Islands since 1902.

In the new system which was now under construction, the reservoir would be higher up in the Mariquina Valley, at a point above which the water shed was uninhabited, and furthermore, the Government, having secured possession of all the land above that point, would insure its remaining free from habitation. He stated that the water system which had been installed, since the American occupation, at Mariveles, afforded an excellent index of how much the public health in the Philippines might be improved if a proper water supply could be obtained. At Mariveles, before the installation of the system, water was obtained from wells, or streams that ran through the village, etc., and dysentery, diarrhea, worms, and other intestinal diseases were very common, but since the installation of the new system the old method of procuring water had been entirely done away with, and since that time intestinal diseases had practically disappeared, the death rate of the village being reduced almost one half.

If the inhabitants could be induced to boil their water, the speaker said, possibly the present crude and clumsy methods of obtaining it might be satisfactory, but, after a most vigorous campaign to bring this about, it was safe to say that even in the presence of cholera not more than ten per cent. of the people boiled their water. He stated that the natives did not like boiled water, claiming that it produced disorders of the stomach, rumblings, indigestion, diarrhea, etc. A great many analyses have been made of the water taken from surface or dug wells, throughout the islands, and they have uniformly shown

amebas or monads, or both, with a high bacterial count. Amebas had also been found in the water from artesian wells which had a depth of over 500 feet, and that this was probably due to defective construction and probably could be remedied.

Dr. Long was of the opinion that the best solution of the water problem in the Philippine Islands was the boring of artesian wells, and proposed a scheme whereby the inhabitants of each village could tax themselves ten cents per month, and while this fund was accumulating, the Government would advance them sufficient money to install their wells. That by such a method, it would only be a few years until a proper water supply might be had over the greater portion of the Islands, at least.

The next was a paper by Dr. Edwin C. Shattuck, Medical Inspector, Bureau of Health, on "Some Observations on Infant Mortality and Its Causes in the City of Manila." This paper brought out nothing particularly new. The author maintained that the causes of the very high infant mortality in the Philippines could be accounted for in the same manner in which infant mortality in other cities is brought about. He stated that the very crude manner in which obstetrics was practised by the natives probably was a factor in the production of the high mortality; that the practice of winding a rope about the abdomen below the umbilicus, crossing the ends, and having two persons pull strongly, in opposite directions, in order to aid in the birth of the child, produced lesions in the latter which gave it a very bad start in life.

Dr. C. H. Otto Bartels read a paper entitled, "Ethnological and Medical Observations in the Marshall Islands." The author gave a very interesting account of the manner in which medicine is practised in those islands, and the readiness with which the natives accepted modern medical applications.

The next paper, on "Radium and Radioactivity," was read by Professor Paul C. Freer, Director of the Bureau of Science, formerly professor of chemistry, Ann Arbor University, and was a particularly interesting review of the literature on radium and radioactivity up to the present time. He stated that Bequerel was undoubtedly entitled to the greater portion of the credit in this work, and that the credit given to M. and Mme. Curie was entirely too high. He said that as yet little had been done in the Philippine Islands upon this subject, although a number of samples of water had been examined, which were taken from near volcanoes, but up to the present time no radioactive qualities had been found. Dr. Bacon, of the Bureau of Science, had made one observation which had not been recorded heretofore, namely, that the electrometer was apparently very much affected by sunlight, from which he concluded that there must be considerable radioactivity in the sun.

The next paper, "Observations on Malaria; Latent Infection in the Natives in the Philippines; Intracorpuscular Conjugation," was by Dr. Charles F. Craig, Assistant Surgeon, United States Army; Pathologist and Bacteriologist of the United States Army Division, Hospital Division, Manila; Member United States Army Board for the Study of Tropical Diseases. He stated that his observations had been made principally about Camp Stotsenberg, in Pampanga Province, the locality mentioned being one of the most favorable in the Philippines for the study of malaria; that owing to the character of the soil, even after the heaviest rains, the ground was perfectly dry, and that no standing or stagnant water existed within a mile of the coast. He stated that he was unable to find breeding places for anopheles within a mile of the post; but, when the grass around the post was allowed to grow to any length, the mosquitos increased greatly in numbers and shortly afterwards there was also a consequent increase in malaria. That, in the 380 cases of malaria which he had observed in the past five months, he was able to demonstrate the parasite in all of them; 248 occurred in Americans, and 138 among natives; 98 were infected with the tertian plasmodia, 8 with the quartan, and 272 with the estivoautumnal, thus showing the estivoautumnal fevers to be the most numerous. He believed that the source of the disease was the latent infection among the natives, and stated that in all, 225 natives without clinical symptoms were examined, of which number 115 were found to be infected. He stated that this agreed with the recent experience of James, in India. He laid particular stress upon the fact that it was useless to attempt to rid a locality of malaria unless all of the inhabitants were treated with quinine. The process of intracorpuscular conjugation, as seen in malaria, was not a sexual act, because no difference in sexes can be distinguished in conjugating bodies, but it is a process which is very common in many classes of protozoa, and tended to preserve the reproductive powers in which it occurs. By continued division many of the protozoa eventually became exhausted, and to prevent this conjugation occurred, the two conjugants, which are not sexually differentiated, becoming one, thus bringing about a restoration of the former reproductive activity, due to rejuvenescence of the vital activities of the organism, and if it were not for this latter process, many of the protozoa would soon cease to exist.

The last paper of the day's session, "An Epidemic of Malarial Fever of the Estivoautumnal Type," was divided into three parts: the first, "Clinical Observations," by Dr. Giles B. Cook; second, "A Topographical Study of the Infected Region and the Mosquitos Found There," by Dr. Charles S. Banks, Entomologist of the Bureau of Science, and third, "A Report on the Blood Examinations and a Study of the Fatal Cases," by Moses T. Clegg, Bureau of Science. This was a brief study of an epidemic that occurred in the camps along the route of the new water construction that is now being carried on in the Mariquina Valley, and was an excellent example of a bad site having been chosen for a camp, and showed that the ordinary prophylactic doses of quinine which are recommended, namely, three to five grains, were not sufficient to protect persons who inhabited infected regions.

THE ETIOLOGY OF PNEUMONIA.

To the Editor of the Medical Record:

Sir:—In your issue of April 7, 1906, Dr. Beverley Robinson, in speaking of the pneumococcus, says: "What endows it with special virulence in certain cases we do not know." I beg to call the attention of Dr. Robinson and of others to the fact that in the *Medical News*, November 18, 1905, and in the Medical Record, January 27, 1906, I demonstrated the fact that the pneumococcus or the diplolanceo-bacillo-coccus, as I named it, in order to acquire virulence, must pass through a susceptible animal, like the house mouse; and for reasons explained in the above-mentioned articles, I consider the house mouse as the main factor in causing pneumonia. I furthermore showed, by experimental evidence, that the pneumococcus, which is our habitual host, is far from harmful, but seems to perform rather useful functions. The injection of large doses of the sputum of a tuberculous patient—who has since died of tuberculosis—into a white mouse and into a house rat, produced no effect on those animals, whereas my own sputum has always had a fatal effect on mice, and I never had any lung trouble, nor mouth trouble, not even a sore tooth.

I claim to have established the etiology of croupous pneumonia. If any one can disprove my statements, all he has to do is to come forward with facts. I really cannot see how any intelligent physician, in speaking of pneumonia, can repeat the old phrase about sterilizing the mouth, catching cold, etc., when there is absolutely no foundation in fact for it; no more than there was for the many ingenious theories which had been advanced concerning the etiology of malaria and yellow fever before the mosquito theory was established. Now their etiology is summed up in one word, "mosquito;" and I hope the etiology of pneumonia will also soon be summed up in one word, "mouse."

E. Palier, M.D.

New York.

Progress of Medical Science.

New York Medical Journal, April 7, 1906.

Remarks on Acute Intestinal Obstruction.—The histories of four cases are given by Howard Lilienthal. He notes that death from obstruction is rarely if ever due to the mere fact that the bowels do not empty themselves. It is usually due to strangulation with peritonitis in which the distention plays an important rôle. Nonoperative recovery is not an impossibility in rare cases, but we should disregard this very remote possibility and operate as soon as the diagnosis can be made. Visible peristalsis is an important indication of obstruction, while visible coils without peristalsis indicates paresis of the intestines. Hiccough and the frequent regurgitation of fluid from the stomach, even though this fluid be neutral, nonirritating, and clear, is of grave prognostic import. Gastric lavage should never be practised before making the diagnosis and laying out the plan of action.

What Causes the Pylorus to Relax?—A. L. Benedict does not believe that pyloric relaxation is due to the presence of HCl in the stomach contents, as has been asserted by Cannon and other investigators. His objections are thus formulated: (1) The local changes in reaction are physiologically inevitable. (2) The rela-

tive acidity of the chyme is not diminished by the passage onward of a small portion, yet the pylorus does not remain patulous. (3) While this failure of a conditinuous relaxation of the pylorus may be explained by the distal acidity, it is in close analogy with the action of other alimentary sphincters, which close without any exciting reflex that can be ascribed to differences in chemical reaction. (4) Fully half the stomach contents normally escape before it is conceivable that any great proportion of hydrochloric acid is present. (5) Clinical experience with dietaries shows that, other things being equal, meals that call for considerable hydrochloric acid secretion usually remain in the stomach longer than those which do not. (6) Clinical experience with stomach contents proves conclusively that deviation from the normal standard of hydrochloric acid secretion produces just the opposite effect to what would be expected if this were the cause of pyloric relaxation. Even in achylia gastrica, there is no necessary abnormality of pyloric function, certainly not in the direction of retention.

The Vasomotor Factor in Asthma.—Francis Hare says that the meaning and mechanism of many asthmatic paroxysms may be interpreted as follows: (1) hyperpyremia; (2) widespread vasoconstriction compensated for by bronchial vasodilatation, or the converse; (3) vascular distention of the mucosa of the bronchioles; (4) obstructive dyspnea; (5) exaggerated combustion (catabolic expenditure); (6) gradual dispersion of hyperpyremia; (7) cessation of the vasomotor variation; (8) subsidence of vascular distention and asthmatic paroxysm. The author says that the dyspnea of asthma depends on obstruction in the bronchioles and the obstruction mainly on vascular distention of the bronchial mucosa. In this vascular distention there are four essential factors: (1) a localized vasodilatation; (2) a generalized vasoconstriction; (3) the work done by the cardiac systole, and (4) the amount of blood in circulation. Increase of these factors increases dyspnea and vice versa. The most efficient thermal means of relieving asthmatic dyspnea is external heat combined with cold inhalations. Adrenalin is a most powerful constrictor. Nitre paper relieves by causing bronchial vasoconstriction. Amyl nitrates and nitroglycerine promote general vasodilatation. Morphine paralyzes the vasomotor system. The same is true of alcohol. Dry cupping is of great value. Emotions causing a diversion of vascular pressure may act similarly. Agencies reducing cardiac systolic action relieve asthma. Hemorrhage of any kind often affords immediate relief to the dyspnea.

The Treatment of Diffuse and General Peritonitis, with Special Reference to the Murphy Method.—J. H. Gibbon believes that the best results come from immediate opening of the abdomen, search for and removal of the cause of inflammation and thorough draining of the abdominal cavity with the least possible disturbance of the viscera. The technic of the plan followed by Murphy consists in making a small opening in the abdomen, closing the perforation or removing the appendix as the case may be, introducing a large drainage tube into the pelvis, placing the patient in a sitting posture of from thirty-five to forty-five degrees, and giving a quart of salt solution every two hours by the rectum. The abdominal contents are not mopped, washed, or handled. Saline laxatives are not employed. They only stir up a peristalsis which tends to spread the inflammation.

Journal of the American Medical Association, April 14, 1906.

Infantile Scorbutus.—Of the fifty cases analyzed by J. L. Morse, seven were developed under his own personal observation, six patients were brought to his office, nine were seen in hospitals and twenty-eight in consultation, only five of the latter having had the real nature of the trouble recognized. They were about equally divided between the sexes and nearly three-fourths were in the second half year of life. The youngest was four months and the oldest twenty-one months old. Analysis of the food showed unsuitable feeding. The lack of freshness and the heating of food seemed also to play a part. Improper diet seemed to be able to produce scurvy without necessarily impairing the digestion. There were signs of rickets in all but nine of the children, but no apparent relation existed between the severity of rickets and that of scurvy. The symptoms are analyzed in detail. The most general one was tenderness on handling. Next in frequency came paresis, followed in order by inflamed gums, swelling, hematuria, pallor, ecchymoses and hemorrhage from the bowels, mouth or orbit. Hemoglobin and number of red corpuscles were reduced in the two cases examined, and there was also a slight leucocytosis. Pain on motion of the extremities was present in forty-three cases. The hematuria cases form a special group, and this was the only symptom of scurvy in two instances and preceded the symptoms in two other cases. Blood was present in some cases in large amounts and the urinary albumin was in proportion to the blood. As regards the diagnosis, he remarks that the first symptom is usually loss of color, often associated with loss of appetite, but the first symptom to call attention is likely to be tenderness on handling, more frequently in the legs than the arms. Treatment consisted in insuring proper diet. One patient was given lemon juice. The others received orange juice, which was very effective. Lovett considers at least one tablespoonful a day as necessary and two tablespoonfuls, or the juice of half an orange, daily, ample to produce a rapid cure.

Fever in the Newborn.—W. J. Butler emphasizes the importance of the observation of temperature during the early days of infant life and discusses the literature. The chances of infection in the newborn are numerous, to-wit: By the contact of infectious material to the eyes, nose, or mouth, traumas incident to forceps delivery, unclean surroundings, or attendants, and the always-possible source of infection, the navel. He reports an interesting series of cases of infection of the respiratory tract in the newborn, the exact source of which was not demonstrable. The disease was confined to one ward in the hospital and contact transmission seemed highly probable. The symptoms were rather uniform, but not specially characteristic. The temperature was high and remittent, and there was evidence of acute rhinitis and laryngitis. In the one fatal case the child apparently died of uremic poisoning. The cases demonstrated the susceptibility of the newborn to infection of the respiratory passages and illustrated the rapidity of conveyance and briefness of incubation in infection with the *Micrococcus catarrhalis* and with the pneumococcus, and the contagiousness of what might ordinarily be called a cold. The treatment was mainly symptomatic. The treatment of this condition generally must be primarily prophylactic, strict asepsis at delivery and subsequently.

Iodine in Surgery.—J. E. Cannaday finds a sterilized glycerin or olive oil emulsion (10 per cent.) of iodoform to be a very satisfactory method of treatment of cold abscess in patients of lowered resistance. A 1 to 1,000 solution of iodine is of great value as an irrigation in uterine sepsis, suppurative arthritis, abscess cavities, empyema, boils, small abscesses, and carbuncles. After emptying and removing necrotic tissue, he uses plain official tincture of iodine. Lately he has been using a 0.5 per cent. solution of iodine for hand disinfection as a final application, and also for the operation site, with excellent results. The formula for the solution is given as follows: Iodine 2.5 gm.; potassium or sodium iodide 5.5 gms.; water 250 c.c. This can be readily diluted to any desired strength, and is very stable. He considers it the disinfectant *par excellence* for these purposes. The usual caution as to iodine poisoning is given, but he remarks that in abscess cavities and septic infection there is greater tolerance of the drug.

The Lancet, March 31, 1906.

A New Chauffeur's Fracture.—Under this title S. Raw refers to the case of a man whose car suddenly stopped. He quickly alighted but neglected to retard the starting device, and taking a light hold of the starting lever, he gave it a sudden pull, when, instead of starting, the engine fired back and he received a violent shock on the hypothenar eminence. When first seen by the author, ten days later, the man had a prominent swelling over the proximal half of the fifth metacarpal bone of the right hand. A diagnosis of fracture was made and confirmed by a skiagram, the fifth metacarpal showing a break at the point of its junction of base and shaft. The possibility of such accidents is so great and the whole subject of such present-day importance that we reproduce the author's comments entire. He notes that several cases of fracture of the lower end of the radius have been recorded as the result of firing back of motor car engines when attempts have been made to start them whilst the spark was advanced, but he has seen no case recorded in which a fracture of any other bone occurred during this manipulation. The fact that in this case it was the fifth metacarpal bone which gave way is sufficiently accounted for when the conditions under which the accident occurred and the various factors at work are considered. First, in the hurry, a tight and strong grip was taken of the starting lever, the driver's hand being passed so far round the handle that its olivary end rested on the hypothenar eminence; and secondly, the spark was so far advanced that any back-fire occurring was sure to be a sharp one and such as would allow no time for

the release of the handle. The quick recoil was therefore transmitted most forcibly through the most prominent part of the handle—namely, its olivary end—which was resting directly over the portion of bone fractured. Had a less tight grip of the handle been taken the principal effort required to start the engine would have been exerted by the thumb and index finger and therefore when the back-fire occurred one of two things might have happened—viz., either the handle would have flown from the grasp altogether, or the force would have been transmitted through the first and second metacarpal bones to the lower end of the radius, resulting in a fracture of that bone.

Tetanus After the Induction of Premature Labor.—Case reported by W. H. Gregory; his patient was a woman of forty-two years, in her eleventh pregnancy. The early months were characterized by several hemorrhages. Finally, toward the end of the fourth month a severe flooding necessitated induction of premature labor. There was no trouble with the placenta and no postpartum hemorrhage. The fetus was removed with the fingers inserted through the os. All went well for six days. On the evening of the seventh day the patient complained of stiffness in the cervical muscles. On the next morning the condition was typical. All measures for relief (including serum injections) proved futile, and death came on the fourth day from asphyxia due to spasm of the respiratory muscles. The author considers that the bacillus of tetanus must have entered the system through the placental site, as there was no tearing of the os during dilatation, and the strictest asepsis was maintained throughout the case. The patient lived in the country and there had been no cases of the disease in human beings or animals in the vicinity for years.

Primary Sarcoma of the Lung.— H. W. Webber reports the case of a man of twenty-nine years, complaining for three months of anemia and loss of strength, and sent from America to Europe for a change of air. On the voyage over he had pain in the left side and shortness of breath, considered due to pleurisy. On landing he was sent at once to a hospital. He was in extreme collapse and had a large left pleural effusion. One pint of claret-colored fluid was drawn off. He steadily failed, was tapped again, but finally died in about two weeks. Autopsy showed the stomach much dilated, the great curvature being half-way between the umbilicus and the iliac crest. The pylorus was normal, and there was no pyloric obstruction. The liver was large, friable, and fatty. There was excess of pericardial fluid and of epicardial fat. The left pleural cavity contained three pints of blood-stained fluid. The lower three-fourths of the left lung were replaced by a fleshy, nodulated, hemorrhagic growth, there being only part of the left apex remaining as lung tissue. Microscopically this was found to be a very hemorrhagic mixed-celled sarcoma.

Erythema Scarlatiniforme Sent Into Hospital as Scarlet Fever.—Two such instances occurred in the practice of J. Beard and T. W. N. Barlow. They note that in the absence of chemical and bacteriological methods of differentiation, we are often compelled to await developments before coming to a positive diagnosis. They consider that physicians in general show a tendency to rely too much upon the character of the rash and to pay too little attention to the consideration of other and equally important factors in the diagnosis—namely, the condition of the tongue (and whether that condition is in the relation which it should bear to the rash and other signs, having regard to the time which has elapsed from the commencement of the illness), the general characteristics of the throat, the character of the onset, and the past history of the individual with respect to infectious sickness, exposure to infection, age of patient, etc. The most striking point of distinction between the two conditions noted in the title is the early commencement of desquamation in erythema scarlatiniforme, which may last for several weeks and sometimes indefinitely. In the case of a person who has had previous attacks, the history is helpful, but if there is any doubt the case should be isolated. It is also very probable that some of the cases of so-called recurrent scarlet fever are really due to this disease. In conclusion, they call attention to the important points in differential diagnosis, three of which should be borne in mind—viz., the very early onset of desquamation, the desquamation taking place while the erythema is in the florid stage, and thirdly, the erythematous base observed after desquamation and which remains for some time, with its peculiar glistening and greasy appearance.

British Medical Journal, March 31, 1906.

Antidiphtherial Serum by the Mouth.—J. D. Rolleston expresses doubt as to the efficacy of this remedy by the mouth and believes that the conclusions drawn by a recent writer as to its benefits were predicated upon too few cases to be conclusive. While he is a believer in antitoxin, he maintains that there is no doubt that a certain number of diphtheria cases can dispense with the remedy without any untoward results. The value of the oral administration of antitoxin as a preventive measure cannot be gauged from so small a number of cases, especially if one considers how large a number of those exposed to infection escape an attack of diphtheria without prophylactic treatment, not only among the nursing and medical staffs of large fever hospitals, but also among the more susceptible population of younger persons. On the other hand, the value of preventive injections is well established.

Ventrofixation.—B. M. Bone's patient was a woman of forty-five years, with the hypertrophied cervix protruding through the labia. On reduction of the mass, the uterine body was found retroverted. After some preliminary treatment to build the patient up, ventrofixation was performed in the following manner: An incision was made in the median line and the uterus pushed up by an assistant from the vagina, and a No. 4 silk suture passed through its muscular wall fairly deeply; gentle traction was then made upon this, and the uterus drawn up into the wound as far as it would come. Then while still held by the suture the silk fixation sutures were passed, three in number, of No. 3 size. They were all passed in the following manner: first through the parietal peritoneum from below upward, and then over a space of about one-eighth of an inch, and then from above downward; then through the uterine tissue, and finally through the parietal peritoneum at the opposite side in the same manner as described. The suture used for traction in the first instance was passed through the skin on either side after the fixation sutures had been tied and cut short, and after the incision had been closed with silkworm this suture was tied over the gauze pad, being subsequently withdrawn on the fifth day. As she was not fit to bear the further prolongation of the anesthetic a plastic operation upon the perineum was done two months later. Recovery was uneventful and complete.

Death from Enlarged Thymus Gland.—J. Rooth's patient was a boy of eighteen months, subject to attacks of dyspnea almost from birth, of the nature of laryngismus stridulus. Enlarged tonsils and adenoids were found, but the child died before the day set for operation. On opening the thorax a large thymus was found, embracing the bifurcation of the trachea and weighing one ounce and six drams (average weight, two drams). Its length was three and one-half inches. The spleen was of the same measurement and weight of the thymus; no evidences of rickets and no deposits of lymphoid tissue other than those noted. Two theories as to the cause of death in such cases have been advanced, the toxic and the mechanical. Considering the small space between the manubrium and vertebræ in a child and the intimate relation of the thymic mass to the innominate arteries and veins, cardiac auricles, and trachea, the mechanical theory presents no difficulties, the author thinks; in three cases in which death has come from some shock (young adults in whom the status lymphaticus is present), toxic agencies may also be a factor. Some cases of death from "overlaying" are, in the author's view, undoubtedly due to the status thymicus, and many women are therefore wrongly accused of suffocating their infants.

The Prognosis in Posterior Basic Meningitis.—The study of O. Hildesherm is based upon 133 cases. Of this number 43 were sent out of hospital alive. The author declares, however, that this does not indicate that one-third of all cases recover, because (1) the more severe cases are more commonly sent to hospitals, (2) mild cases are treated in dispensaries, and (3) many who are sent out alive die subsequently. The older the child, the better the prognosis. Any prognosis early in the disease is pure conjecture. The author has been able to follow up 17 cases sent out as cured. None of these have died, although the history extends over several years; 8 are completely cured; 5 have very minor troubles, which may be of no significance; 2 belong to the group "retarded development." There remain 2 who have developed hydrocephalus since leaving the hospital, but neither of these was really normal on leaving—one was still frequently vomiting, and in the other the limbs were still slightly spastic—so that one may conclude that once a child appears to

be completely cured of the disease the prognosis is very good; but when one turns to those who were sent out "better" or "improved," the outlook becomes distressing. Out of 7, only 3 survive. Of these, 1 has hydrocephalus, another is paralyzed, and the third shows "retarded development"; at 3½ she cannot walk alone; 4 died, 1 from scarlet fever (the exanthemata not infrequently carry off these patients during convalescence), and the other 3 from the disease itself or its sequelæ. Out of 13 cases sent out "in *statu quo*," 4 developed hydrocephalus while in hospital; 2 others died of "water on the brain" subsequently; 1 died of the disease itself, and 1 of measles; 3 are permanently disabled, and only 2 are cured.

Berliner klinische Wochenschrift, March 26, 1906.

The Upper Limit of Dullness in Accumulations of Fluid in the Pleural Cavity.—Krönig calls attention to a hitherto little-regarded observation made by Garland in 1878, to the effect that when considerable amounts of fluid are present in the pleural cavity, a triangular area of resonance, having its base upward, one side formed by the vertebral column, and the other by a line forming the beginning of Ellis's S-shaped curve, exists at the upper limit of fluid. This fact, he says, has been either denied or passed over without mention by most German authors, and he states that its existence was independently discovered by him before he had learned of Garland's observations. The triangle of resonance, according to his own observations, is, however, smaller than that recorded by Garland. The occurrence of aerated lung in this situation is to be expected when it is considered that the root of the lung occupies this situation, so that when the organ is compressed it must be pushed in this direction. The author believes that the demonstration of this paravertebral zone of resonance has importance not only from a theoretical standpoint, but also practically in making exploratory punctures for the demonstration of fluid.

Pulmonary Tuberculosis in School Children.—Roeder says that a true idea of the prevalence of this disease in children cannot be gained from hospital statistics, inasmuch as it has been found that a very large proportion of children so afflicted do not complain of illness until the disease has reached an advanced stage. Therefore it is necessary to make thorough physical examinations of all school children at regular intervals. Statistics of this sort recently obtained in Prussia show that tuberculosis is by far the most dangerous enemy of children during the ages from five to fifteen years. Roeder recommends for the purpose of combating this tendency, regular examinations of all school children, and instruction concerning the dangers of the disease. All children found affected should be sent to suitable convalescent homes or sanatoria, which must be provided in sufficient numbers. After an adequate period of treatment in these, the children should be transferred to settlements and schools situated in the country. Tuberculous children and those with a predisposition to the disease should be watched until the school course is finished, at which time all children should be examined and be provided with a certificate stating their condition of health.

Münchener medizinische Wochenschrift, March 27, 1906.

The Pharyngeal Reflex.—Baumann states that although the absence of this reflex is generally mentioned as an indication of hysteria, the subject has apparently not been studied very extensively in normal persons. He reports the result of a series of observations made on a large number of soldiers, of high school children, and of hospital patients, and comes to the following conclusions: A true retching movement is not essential to the pharyngeal reflex. A plainly visible contraction of the pharyngeal muscles is sufficient to be regarded as the reflex. Actual absence of the pharyngeal reflex is very rare, and when it is observed is usually only temporary. The reflex is exaggerated in young individuals oftener than in adults, and sometimes a psychical inhibition of the reflex may be noticed. Chronic pharyngeal catarrh ordinarily does not produce any exaggeration of the reflex, and in acute catarrhal conditions there is no regularity in its behavior. In hypertrophy of the tonsils without inflammatory swelling, a diminution of the reflex is ordinarily very rare.

Arteriosclerosis in Surgery.—Siegel says that although the administration of anesthetics to persons more than fifty or sixty years old and having arteriosclerosis, is usually a matter involving considerable anxiety, he has obtained the impression that such persons stand the anesthesia comparatively well, provided that the cardiac and renal activity is good, and that no pulmonary complications exist. The combination of emphysema and bronchitis, on the other hand, renders the outlook much less favorable. Very old persons, that is, those who have passed the eightieth year, and who require surgical intervention for some such cause as strangulated hernia, nearly always do well under chloroform anesthesia. Premature arteriosclerosis is often the cause of unpleasant surprises in the course of the narcosis, sudden collapse, followed by extremely feeble heart action, being not uncommon. Deep narcosis is less injurious to persons with arteriosclerosis than a more superficial anesthetization, which permits the heart to be influenced by persisting reflexes. Wounds usually heal satisfactorily in arteriosclerotics, although intestinal resections seem to form an exception to this general rule. The author suggests as causes of premature arteriosclerosis, abuse of alcohol, excessive cigarette smoking, and extreme depressions of temperature such as occur in those who take very cold baths in winter. Presenile gangrene is said to be especially common in Russian Poland and in Japan.

The Treatment of Joint Tuberculosis.—Gebele and Ebermayer present an outline of the methods of treatment for this condition in use in v. Angerer's clinic in Munich. The general position is taken that discrimination is necessary in selecting the plan of treatment to be followed, and that the extremely conservative methods that are popular at present are just as undesirable as the ultraoperative tendency which was dominant twenty-five years ago. The conservative treatment usually employed by the authors consists in fixation of the affected joint by means of a plaster-of-Paris or similar dressing. The injection of 10 per cent. iodoform and glycerin, in doses for adults of 5 to 10 c.c., repeated at intervals of from eight to fourteen days, has been found a useful adjuvant. Bier's method of treatment by hyperemia is also employed in selected cases, particularly in those accompanied by suppuration and sinuses, fixation ordinarily being used in conjunction with it. Due stress is laid on such accessories as good nourishment, ventilation of dwellings, and sojourn out of doors. The statistics of the clinic show that about a fourth of the patients operated on, in spite of arthrectomy and in some cases in spite of secondary amputation, were either not cured or died. The prospects of permanent cure after operation are much smaller for adults than for younger patients, and the authors believe that if operative measures are to be employed on grown patients, resection should not be used as a routine measure, but that if the case is advanced and is accompanied by demonstrable tuberculosis of the internal organs, primary amputation should be practised.

Deutsche medizinische Wochenschrift, March 29, 1906.

The Treatment of Pulmonary Tuberculosis by Means of Artificial Pneumothorax.—Schmidt speaks favorably of a plan of treating pulmonary tuberculosis, old unabsorbed pleural exudates, bronchiectasis with cavity formation, and emphysema by means of injections of gas or fluids into the pleural cavity. Gases such as pure oxygen and sterile air are used when it is desired to effect compression of the apex of the lung, and salt solution or oil when the base is to be influenced. The author has carried out the measure twenty times without encountering any complications. The procedure is effected by means of a special trocar in two parts. The first of these consists of a sharp needle of large caliber, provided with a heavy flange which prevents the point from penetrating more deeply than enough to pierce the intercostal muscles without puncturing the pleura. Through this instrument the cannula proper, which has a blunt end with lateral openings, is forced into the pleural cavity.

Experimental Observations on the Infectiousness of Syphilitic Blood.—Hoffmann reviews the recorded instances in which human beings were experimentally inoculated with syphilitic blood. Eighteen such observations have been described, with a positive result in seven of the number. This shows that the infectiousness of the blood is not very great, even in fresh, untreated syphilis, as the material for these experiments was in nearly every instance taken from early cases of the disease. Hoffmann's own experiments were made on four monkeys that were inoculated with virus from recently infected individuals. Two of the number developed chancres, while two did not. The *Spirochæta pallida* could be demonstrated in the lesions of the monkeys that were successfully inoculated.

Book Reviews.

Materia Medica for Nurses. By John E. Groff, Ph.G., Apothecary in the Rhode Island Hospital, Professor of Materia Medica, Botany, and Pharmacognosy in the Rhode Island College of Pharmacy. Third Edition, revised, with an appendix giving list of questions for self-examination. Based upon the eighth decennial revision of the U. S. Pharmacopeia. Philadelphia: P. Blakiston's Co., 1906.

The subject of Materia Medica as presented in this volume, while naturally condensed, is still sufficiently comprehensive to answer all the requirements of nurses. The book is written in a simple style, the arrangement is good, and the questions for examination are unusually sensible and practical.

Massage and the Original Swedish Movements, Their application to various diseases of the body. Lectures before the Training School for Nurses Connected with the Hospital of the University of Pennsylvania, German Hospital, Woman's Hospital, Philadelphia Lying-In Charity Hospital, the Philadelphia Polyclinic and College for Graduates in Medicine, and the Kensington Hospital for Women, of Philadelphia. By Kurre W. Ostrom, from the Royal University of Upsala, Sweden. Sixth Edition, revised and enlarged, with one hundred and fifteen illustrations. Philadelphia: P. Blakiston's Son & Co., 1905.

In this new edition the subject-matter of the book has undergone careful revision; the practical instructions for giving massage have been enlarged; and there are new sections dealing with headache, the prostate gland, colds, affections of the bladder, varicose veins, and hernia. The book is written by one who has enjoyed considerable practical experience in massage and Swedish movements, and it will be of service to physicians, nurses, and professional masseurs and masseuses. There are numerous illustrations, but they are not of a high order of artistic merit.

A Manual of Materia Medica and Pharmacology, comprising all organic and inorganic drugs which are or have been official in the U. S. Pharmacopeia together with important allied species and useful synthetics. By David M. R. Culbreth, Ph.G., M.D., Professor of Botany, Materia Medica, and Pharmacognosy in the University of Maryland Dental, Medical, and Pharmaceutical Schools. Fourth Edition, enlarged and thoroughly revised. Philadelphia and New York: Lea Brothers & Co., 1906.

This, the fourth edition of Culbreth's work, is brought up to date and made to conform to the U. S. Pharmacopeia. It opens with a general discussion of materia medica and the physiological action of drugs, including the form in use, avenues through which they enter the circulation, the means by which they are carried through the human system, and the channels by or through which they are eliminated, the conditions which exist to modify their action, and the doses. This is followed by remarks as to classification, the chemical, morphological, botanical, and therapeutic action and characteristics.

The larger part is taken up with a description of organic drugs from vegetable and animal sources, inorganic drugs from the mineral world, carbon compounds, and a partial list of the synthetics, including those incorporated in the lately issued Pharmacopeia. Finally a chapter is given to the study of the microscope as it applies to materia medica. The chapter on non-pharmacopeial organic carbon compounds (synthetic remedies) is useful, as it gives information concerning the new remedies together with doses. After all, these products have an established place in the physician's armamentarium, and it is wise to give such information concerning them as will help to their proper uses. The book will be found useful to students in pharmacy of medicine, both as a textbook and for reference.

International Clinics. A Quarterly Review of Illustrated Clinical Lectures. Edited by A. O. J. Kelly, A.M., M.D., with the collaboration of Wm. Osler, M.D. (Oxford), John H. Musser, M.D. (Philadelphia), and others. Vol. IV. Fifteenth Series. Philadelphia and London: J. B. Lippincott Company, 1906.

A beautiful colored plate of Psoriasis attracts attention at once on opening this volume to Dr. Gottheil's excellent article on the subject. Another striking contribution is that of Warthin of Ann Arbor, on an experimental study of the effects of *x*-rays upon the blood-forming organs, with special reference to the treatment of leukemia. Including the illustrations, it takes up thirty-four pages. Ectopic pregnancy has been interestingly and artistically depicted by Ashby of Baltimore, followed by sixty cases of extra-uterine pregnancy by Newell of Boston. The *x*-ray in joint tuberculosis by Freiberg of Cincinnati is an interesting study of the clinical course of the disease, and these are only a few of the articles of worth.

A Systematic Course of Qualitative Chemical Analysis of Inorganic and Organic Substances. With explanatory notes. By Henry W. Schimpf, Ph.G., M.D., Professor of Analytical Chemistry in the Brooklyn College of Pharmacy. New York: John Wiley & Sons, 1906.

This manual differs from some of its class by presenting a series of explanatory notes which cover essential facts in chemistry that aid the students in understanding the analytic processes in which he is engaged. The work is written by a practical teacher, and every effort has been made to simplify his subject and to render its essentials more easily grasped by the beginner. The most important portion of the book from the viewpoint of medicine is the chart devoted to the detection of the most common organic pharmaceuticals, such as acetphennetidin, aloin, quinine, etc., etc. Professor Bartley's scheme for a systematic examination and identification of unknown organic substances commonly used in pharmacy, medicine, and the arts is also included in the book. A rather scanty scheme for the detection of poisons, and an entirely inadequate scheme for uranalysis (especially deficient as to the microscopical examination) complete the volume.

A Textbook of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease. By Arthur R. Cushing, M.A., M.D., Aberdeen, Professor of Pharmacology in the University College, London, England; formerly Professor of Materia Medica and Therapeutics in the University of Michigan. Fourth Edition, thoroughly revised. Illustrated with fifty-two engravings. Philadelphia and New York: Lea Brothers & Co., 1906.

The many admirers of Dr. Cushing's excellent work will be pleased to see the appearance of this revision which has brought the text into conformity with the New United States Pharmacopeia. The chief changes noted are those entailed by this modification, though numerous sections, notably those on chloroform and wood alcohol, have been brought into harmony with the results of recent investigation and experience. The book is one of the most valuable of its class, and fully deserves the popularity it seems to have attained.

A Manual of Bacteriology. By Herbert U. Williams, M.D., Professor of Pathology and Bacteriology, Medical Department, University of Buffalo. Revised by B. Meade Bolton, M.D., Expert, Bureau of Animal Industry, Washington, D.C. With 108 Illustrations. Fourth Edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co., 1905.

The previous editions of this work have been favorably noticed in these columns, and the changes apparent in the present revision are sufficiently numerous to keep it abreast of the progress that has been made in bacteriology. The chapter on immunity especially has been subjected to considerable amplification and does justice to the hypotheses of Metchnikoff, Bordet, and Arrhenius, as well as to the rather more popular one of Ehrlich.

The Changes Produced by Inflammation in the Conjunctiva. (Hunterian Lectures, R.C.S., 1905.) By M. S. Mayou, F.R.C.S., Jacksonian Prizeman and Hunterian Professor, Royal College of Surgeons, England; Ophthalmic Surgeon to the Hospital for Paralysis and Epilepsy, Maida Vale; Chief Clinical Assistant to Royal London Ophthalmic and London Hospitals. "Fiat Lux." New York: William Wood & Co., 1906.

This book, which is one of 179 pages, is devoted to a description of observations made in original research work. It is well illustrated, having four colored plates and one black and white plate and forty-four figures in the text. The first lecture describes briefly the development of the eyelids, with special reference to the condition of the conjunctiva before the separation of the margins of the lids, the studies being extended to animals other than man. The cytology of the normal conjunctiva and a description of the changes in the surface cells that occur in xerosis conjunctivæ are given. The second lecture takes up the consideration of changes that take place in the conjunctiva (1) as a result of wounds, (2) in the development of lymphoid tissue, (3) due to conjunctivitis produced by micro-organisms. In the third lecture the author takes up the consideration of trachoma, discussing it from the viewpoint of the histologist, based on data obtained by careful laboratory work with material skilfully selected and studied. An attempt is made to differentiate between follicular conjunctivitis and trachoma. The arrangement of sanatoria and the treatment of trachoma are entered into. Phlyctenular and vernal catarrh are also fully discussed.

The book marks a decided advance in our knowledge of the conditions discussed. It represents a great amount of labor and careful research. It is well written and is deserving of the careful study of all ophthalmologists.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held March 15, 1906.

DR. CHARLES L. DANA IN THE CHAIR.

A Study of the Spirochæta Pallida, with Demonstrations.— Mr. L. B. GOLDHORN gave a lantern-slide demonstration of his personal work done on cases of primary, secondary, and congenital syphilis. He said he had had an opportunity to examine over sixty cases of primary and secondary lesions, and in all, with the exception of eight or nine, he had succeeded in finding the organism. This organism was stained by him in a peculiar manner, which he had described in a paper before the Pathological Society three months ago. The method used enabled him to discover the organism almost constantly. He drew especial attention to the fact that, in order to succeed, one must remove any exudate present; it would be impossible to find the spirochete when there were pus corpuscles on the smear. He advised the use of the curette, applied at the edge of the lesion rather than at the center. He emphasized the importance of examining more than one lesion. He had as yet no conclusions to offer regarding the diagnostic value of the spirochete. He related one case of interest in which there were simultaneous initial lesions occurring on the tongue and penis in which he failed to find *Spirochæta pallida*. In seven weeks no secondary lesions had appeared.

Dr. SIMON FLEXNER referred to the paper he had read before the Academy three or four months ago (see MEDICAL RECORD, November 11, 1905, page 798). Cultures and inoculations had not been successfully carried out at the time of writing his paper; up to the present moment certain requirements had not been fulfilled. But the demonstration of Mr. Goldhorn made such a chain of evidence that it must be believed. At the same time he believed we should go slow in the interpretation of the findings on the smear at present, because the methods of staining used to-day were imperfect at best. He thought the clinical demonstration of the *Spirochæta pallida* in the office was practical.

Dr. HARLOW BROOKS called attention to the difficulties attending present and older methods of staining, and said that Mr. Goldhorn had presented a very much easier method. The constancy with which the spirochete appeared in fresh lesions was quite striking.

Dr. LAPOWSKI and Dr. NORRIS discussed the demonstration.

The Condition of the Air of the Rapid Transit Subway.—Dr. GEORGE A. SOPER read this paper (see page 609).

Dr. S. ADOLPHUS KNOPF said he was glad to hear Dr. Soper call attention to the dangers of infection attending sneezing and dry coughing, and believed that if signs were placed telling of the dangers of sneezing and coughing in one's face, the people would take it to heart and be more careful. The results of prohibitory signs had not been entirely successful, and he wondered if it would not be better to provide a number of spittoons and over each place the sign, "Spit here." Dr. Knopf was alarmed regarding the health of the employees, who were obliged to work in the dust-laden atmosphere of the subway 10 and 12 hours a day. The consequent irritation of the respiratory tract invited such diseases as tuberculosis and pneumonia, and he ventured a suggestion that, since the subway and elevated roads were run by the same company, the employees of each road alternate, at least until the time came when the danger of this dust was done away with. By so doing he believed the danger of the employees becoming diseased would be reduced by at least 50 per cent. The odors in the subway were produced not only by the oil and the material in the roadbed, but by the crowds who traveled this odor could not be designated; it was an odor like that of prisons, among the poor, etc., an odor that was quite characteristic of crowded humanity. He hoped the subway authorities would take to heart the suggestions offered in the paper of Dr. Soper, and especially the health of the employees.

Dr. BASSLER asked Dr. Soper whether there was any difference in the heat point between stations, or in the amount of CO_2.

Dr. Soper said he keenly felt the limitations of his work, and hoped that it would only be a preliminary report upon something which would be better in every way. We were on the eve of beginning an era of subway building, and every effort should be made so that the subway travel should not be injurious to health. The health of the employee should also be considered. It was the purpose of the Commission to have investigations made regarding the health of the employees in order to determine whether any injury was being done to their physical condition or not. There seemed to be ample air in the subway. There were 35,000,000 cubic feet, on 21 miles of roads. The air was examined between the stations both for temperatures and CO_2, as well as for bacteria, but no material differences were found, a rather surprising discovery and one which afforded much relief. To let more air in and out of the subway the lid should be lifted. It was noted that the air above Fiftieth street was far better than the air below, because the proportion between the area of openings and the cubic contents was much lower below than above that point.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Regular Meeting Held March 20, 1906.

DR. WILLIAM F. CAMPBELL IN THE CHAIR.

Custom and Fashion in Surgery.—Dr. JOHN CHALMERS DA COSTA of Philadelphia read this paper. He said that the tendencies of modern surgery showed the effect not so much of custom as of fashion. We passed into error because we did not stop to think. There were fashions in surgery as in neckties and bonnets. Fashions in millinery were obtained in Paris; fashions in surgery were imported from Germany. One of the customs of surgery that had been carried to an extreme and blindly followed was that of exploratory incisions. In the time of Charles the Second, Butler in his Hudibras referred to the custom of "being dissected to see what part is disaffected." At present the exploratory operation had developed extraordinary refinements. Not alone did surgeons cut into the peritoneal cavity, but they had lately been advised to cut down to the peritoneum, and palpate it from without. Likewise an incision as far as the parietal pleura had been advised. As the result of an exploratory operation the surgeon might decide on a radical or a palliative operation, or he might find that a further operation was inadvisable or impossible. He who attempted an exploratory operation must have great experience. He should have a mental picture of what he might expect to find; such a sharply-defined image could be acquired only by experience. The finger felt and the eye saw what the brain made the finger feel or the eye see. One man might feel and see what another man could not feel or see. The normal thickening of the pyloric sphincter might be mistaken for a stricture. An inflammatory thickening of the head of the pancreas might be mistaken for a stone in the common duct, etc. One should protest against the exploratory operation when it was not required. Not only should it not be performed without experience, but it should not be resorted to until all the clinical means at one's disposal had been exhausted. But a calamity might require immediate operation. Every abdominal and brain operation was to a certain extent exploratory. In some cases the exploratory incision

was a benefit itself, in other cases it showed what further surgical procedures should be resorted to. The indiscriminate use of the exploratory operation had frequently led to this habit of thought: "Why strain the mind to make a diagnosis when by making a simple incision the exact condition is plainly revealed?" It is remarkable that in the evolutions of modern surgery a decided advance had been made in surgical technique, and but little progress had been made in surgical diagnosis. It was high time to protest against the attitude which only too frequently made the surgeon but an ignorant knifeman like the barber of former days. The surgeon ought to become the best of diagnosticians. He who never thought of making a diagnosis without an exploratory operation would many a time make a needless exploration. The abdomen was frequently opened with as little concern as a drawer might be pulled from the bureau in order to examine its contents. To every patient the exploratory operation was of considerable moment. No incision ought to be merely exploratory; it should be ultimately diagnostic.

One of the prevailing fashions of surgery was the strict cultivation of aseptic and antiseptic methods. The history of antiseptic surgery revealed the same habits of thought and practice as other branches of human philosophy and art. Creeds passed away not because of the arguments that were hurled against them, but because men's minds were predisposed against them. Argument was usually accepted only as a justification for the abolishment of a certain system of thought and policy. The annals of antiseptic surgery illustrated this truth. Semmelweis in 1847 suggested that puerperal fever was infectious. In 1863 Jules Lemaire advocated the use of carbolic acid in the treatment of wounds. The teachings of Lister did not at first fall upon attentive ears. Even as late as 1882 only four surgeons in Philadelphia followed the teachings of Lister. The 19th century was the age of turmoil, of revolution in methods, ideas, and ideals. Medical men accepted antiseptic surgery not because they believed in it, but because they were predisposed in favor of it. In fact the refinements of aseptic surgery have been carried too far. Desault said one hundred years ago that the simplicity of an operation was the test of its perfection. This was true of the methods of hand sterilization. The operating room had developed into a palatial theater, of which the charity patient reaped the benefit. The rich rarely shared the luxury. To be sure certain things were essential in the operating room, but some were useless, some mere accessories, and some were not desirable. Complicated methods resulted from working a theory to an extreme. The main danger to be avoided in an operating room was dust. A wooden table covered with blankets was wellnigh as good as a table of glass or metal. The facial mask was unnecessary, as were the "fisherman's boots." Fallacies regarding the various antiseptics had grown apace with these requirements. It was not generally known that iodoform was not germicidal when dusted on free surfaces, but was germicidal in an inclosed space like a tuberculous cavity. Heilé had explained the antiseptic efficiency of iodoform on the theory that the tissue juices decomposed the drugs. Thus iodoform was a good clinical but a poor laboratory germicide. On the other hand, corrosive sublimate, which was a good laboratory germicide, was but a poor one clinically. It was too often forgotten that the test tube had no vital resistance. The simpler methods of hand disinfection were much more satisfactory than the complicated ones. The basis should be thorough mechanical cleansing. Surgeons frequently forgot to use the brush crosswise so as to get into the transverse crevices of the skin. The water should be very hot so as to produce a profuse flow of sweat. There was no advantage in the use of germicidal soaps. Sand soap or marble soap was not advised. Prolonged scrubbing loosened the epithelium and made it liable to fall into the wound. The scrubbing should last five minutes and should be followed by the alcohol sublimate method of disinfection. Gloves were to be reserved for infected cases; it was also safer to wear them when invading the peritoneum or the large joints.

Another one of the fashions of modern surgery was the intravenous injection of salt solution. There were different ideas as to the proper temperature at which the saline injection should be given. It was ordinarily given at 103°, but Dawbarn gave it as high at 118°, It was hardly realized that the saline injection was not only sometimes harmful, but was also frequently dangerous. The intravenous saline injection had been frequently resorted to in infectious diseases so as to wash out the toxins and to produce an increased diuresis. But the latter was the exception rather than the rule. Often the injection of a large amount of fluid into the blood might actually suppress diuresis; it might lead to an increase in a pleural effusion; it might cause a retention of sodium chloride in the tissues. The injection of salt solution had been hailed as a powerful curative measure in shock. This condition might be due to exhaustion of the vasomotor center, or to collapse from injury of the vasomotor center, or heart failure following hemorrhage. Crile had shown that shock was only temporarily relieved by saline injection. But in shock due to hemorrhage the method was of value. On the other hand it had been productive of harm in urinary suppression of renal or cardiac origin, and had even produced fatalities in edema of the lungs and dilatation of the heart.

Another one of the customs of modern surgery that required thorough overhauling was that of the respective use of heat and cold in inflammatory conditions. It was overlooked that inflammation was a process and not a state. Cold was of value in the proper stages of inflammation, but it should not be applied so as to chill the tissues. The indiscriminate use of the ice-bag might produce dangerous stasis and necrosis in the parts underlying it. Cold should be applied only in the earliest stages of inflammation, during the condition of pure hyperemia which lasted for but a few hours. In the latter stages the ice-bag might relieve the pain and lessen the muscular rigidity, but it masked the symptoms. Still worse, it inhibited the emigration of leucocytes. It thus counteracted nature's effort to limit the area of inflammation with a barrier of leucocytes. It thus might favor the spread of the inflammation. If the cold was too intense, if its application was too prolonged or too late, when stasis, exudation, and swelling had resulted, then cold did serious harm. It lessened nutritive activity of the cells, it lessened phagocytosis, it lessened vitality. In most cases of appendicitis the application of the ice-bag was harmful, for three reasons. (1) The patients were never seen so early as to warrant the use of cold; (2) the ice-bag masked the symptoms; (3) the cold prevented the migration of the leucocytes. Not only was the ice-bag responsible for the delaying of the operation, but it was also responsible for the gangrene that so frequently occurred. When stasis was confined to the focus of the inflammation, cold should be used continuously and not intermittently, owing to the reaction that would occur in the intervals between each application. Cold might be comfortable and yet do harm. It should

never be used for a period longer than twenty-four hours. As regarded heat, it might be continuous or intermittent, dry or moist. A high degree of heat had the same action as cold. Heat does harm in a surface inflammation, or in erysipelas. In subcutaneous or deep inflammations, heat in whatever form did good. It produced a moderate degree of venous dilatation and drained the inflamed area. This venous drainage established the circulation and the swelling abated. Moreover, phagocytosis was increased, and pain, rigidity, and tenderness were diminished.

Dr. Frederick Holme Wiggin of New York opened the discussion. He said that Dr. Da Costa's paper was an exhaustive one. A few points alluded to required further emphasis. One of these was that one should never perform an exploratory operation unless there was a good reason for it. On the other hand a patient might be dying on account of the delay occasioned by differences of opinion as to the nature of the surgical diagnosis. The necessity of experience and skill in him who undertook an exploratory operation was also worth further emphasis. The speaker alluded to a case in which two physicians made an abdominal section and then called him in to complete the operation, after several hours, as they did not know what to do. As regarded mechanical cleansing of the hands he found that gauze was better than the brush, not causing the peeling of the epithelium. Following thorough cleansing with gauze and tincture of green soap, the hands were washed in 65 per cent. alcohol, and then placed in a strong alcoholic solution of bichloride (1-300) for a few seconds. In recent years, instead of rubber gloves he had used a thin coating of celloidin for the hands. This was flexible and could be removed with equal parts of ether and alcohol, but this method is adapted only for hospital work. Celloidin might be used in a similar 10 per cent. solution for sealing the abdominal wound. The speaker agreed with the author of the paper in holding that too much reliance had been placed on the use of the saline injection. As regarded the prevention of shock, he had found that the moderate use of ergot for a week or ten days previous to the operation tended to reduce the possibility of shock and also tended to calm the nervous system. It put the patient in such a condition that frequently the pulse rate would not exceed 85 at any time during the operation. Ergot might also be administered shortly before, during, and after the operation. It might thus obviate the use of morphine. The speaker confined the employment of the saline injection to cases of hemorrhage. He had found that an enema of one pint of the saline solution every four hours was frequently sufficient. He agreed with the author as regarded the mutual indications for the use of heat and cold in the treatment of inflammatory conditions.

Dr. J. Riddle Goffe expressed himself in sympathy with a more careful attitude regarding exploratory operations. Reckless operations should be avoided. But the exploratory operation had its place. By its means alone was Emmet able to place his hand in the pelvis and show that what had been regarded as a pelvic cellulitis was frequently really a salpingo-ovarian abscess. As regarded shock, he did not believe that the last word had been said. As a sheet-anchor in this condition was morphine, promptly and freely administered. His experience in the use of saline solution had been so satisfactory that he would not give up this therapeutic procedure in the treatment of various conditions confronting the surgeon until something better presented itself.

Dr. John Welsh Croskey of Philadelphia closed the discussion.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, March 12, 1906.

The President, Dr. Thomas E. Satterthwaite, in the Chair.

Report of the Committee on the Death of Dr. Emmet C. Dent.—By Dr. Robert Coleman Kemp, Chairman. (Read by the Secretary.)

Report of the Committee on the Death of Dr. William E. Swan.—By Dr. Samuel Lloyd, Chairman.

Symposium on the Present Status of Radiology in Diagnosis and Treatment.—Dr. A. D. Rockwell opened the discussion in a paper on *x*-ray therapy. (See page 617.)

Dr. John H. Musser of Philadelphia discussed the value of the *x*-rays as a diagnostic aid in cardiovascular and gastrointestinal conditions. While in many obscure cases, especially those relating to the abdomen, the evidence furnished by the rays was simply confirmatory, it was to be expected that with improved technique and enlarged experience this method of diagnosis would prove of much greater value in the future. In speaking of the use of the *x*-ray in cardiovascular conditions, Dr. Musser said that the presence of an aneurysm in the thoracic cavity had been positively demonstrated by this means over and over again, and in that connection he called attention to the possibility of multiple aneurysms being present. By means of the *x*-ray the shape, size, and position of the heart could readily be demonstrated, and for that purpose the method was particularly valuable in dealing with fat people and with women. The presence of mediastinal growths and enlarged glands could also be shown by the rays. In dealing with pulmonary conditions, the rays enabled us to distinguish between consolidation and effusion, and to localize pulmonary abscesses.

Drs. Henry Pancoast and W. S. Newcomet of Philadelphia showed a number of radioscopic pictures in illustration of the remarks made by Dr. Musser regarding the value of the *x*-rays in the recognition of certain cardiovascular and gastrointestinal conditions. In those relating to the esophagus, stomach, and intestines, Dr. Pancoast explained that the radiographs had been taken immediately after the patients had swallowed an emulsion of bismuth, by which means a very distinct outline of the organs of the gastrointestinal tract could be obtained by the proper time and degree of exposure.

Dr. William B. Coley read a paper on the value of the *x*-ray in cancer, in which he offered the following conclusions: (1) That the *x*-rays had an undoubted and oftentimes remarkable influence upon cutaneous carcinoma or superficial epithelioma, resulting frequently in the entire disappearance of the lesion, and sometimes in a permanent cure. There was, however, a strong tendency to recurrence, and it was still an open question whether it was not better to excise even superficial growths when possible, reserving the use of the *x*-rays for cases beyond operation. (2) In deep-seated cancer, both carcinoma and sarcoma, the influence of the *x*-rays was in most cases slight and temporary. The few cases in which there had been an apparent disappearance of the tumor had, in almost every instance, been quickly followed by either local or metastatic recurrence. For that reason the *x*-rays should never be used in operable deep-seated cancer. (3) The temporary improvement observed in a certain number of cases, as evidenced by decrease in size or cessation of growth, together with considerable diminution in pain, justified the use of the *x*-rays in cases of inoperable, deep-seated cancer as a palliative measure. (4) The use of the *x*-rays as a preoperative measure in operable cancer was strongly to be condemned. (*a*) because the disease might, and often did, extend locally, or, more especially, by metastases, during the period of preoperative treatment; (*b*) aside from such real dangers, the speaker said he could not see any advantages to be gained

by such a course of treatment. If the tumor did not decrease in size, there was certainly nothing gained; if it did decrease in size, and the neighboring glands became smaller, there was the danger that the operation would be less radical than if done at first, and that infective tissue might be left behind as a source of future recurrence. (5) The value of the *x*-rays as a prophylactic measure after operation for primary malignant tumors, so strongly advised by most *x*-ray workers, at present rested entirely upon theoretical grounds. There were absolutely no data to prove such value, while there were many observations that would tend to disprove the same, or to reduce it to a minimum. It would require many more observations and a much longer period of time before a positive opinion could be expressed. In advising such treatment after operation, the patient should be told that it was entirely experimental, and, furthermore, should not be kept ignorant of the fact that in a number of cases the prolonged exposure to the *x*-rays had caused cancer in a previously healthy individual.

Dr. Carl Beck, in discussing the *x*-ray in surgical diagnosis, emphasized particularly the value of the rays in the recognition and treatment of fractures. Whereas formerly text-books were written on this subject, and the nature and treatment of various fractures were fruitful sources of controversy, this entire field of surgery had practically been revolutionized by the introduction of the *x*-rays, and could now be covered in a few pages. The *x*-rays showed what the condition was, and, knowing that, the treatment naturally suggested itself. In addition to fractures and their operative correction, Dr. Beck referred to the value of the rays in the recognition of foreign bodies, and in differentiating between osteomyelitis, necrosis (the extraction of sequestra under the guidance of the Roentgen rays), acute inflammatory atrophy in osseous tissues, tuberculosis of the bones and joints, osteomalacia, arthritis, syphilis, neoplasms (especially osteosarcoma), and the special features of osseous cysts, acromegaly, and exostoses. Sclerotic changes in the arteries and veins were also touched upon, as well as concretions of the biliary and urinary tracts.

The Value of Radium in Surgery.—Dr. Robert Abbe said that the great difficulty in obtaining radium of sufficient strength was due to the fact that its source of supply was very limited. The radium seemed to exert a more intense action on morbid than on healthy tissues, and of the former, carcinoma and rodent ulcers of the face were especially amenable to it. It possessed the same penetrative power as the *x*-ray, and apparently produced a retrograde action of the morbid cells, which were, perhaps, in the nature of slumbering cells or "rests," and which had grown up into morbid growths. In some cases in which the Roentgen ray had failed, radium had succeeded very strikingly, showing that we are dealing with somewhat different types of rays. To illustrate the value of radium in surgery, Dr. Abbe showed a number of colored models of various pathological conditions before and after successful treatment. Among these were cases of warts on the face and hands, epitheliomata of the nose and lip, rodent ulcer of the face, old, intractable cases of lupus, a case of alveolar sarcoma of the eyelid, and one of giant-celled sarcoma of the lower jaw. Also cases of mammary carcinoma and cancer of the tongue (still under observation), and in goiter of the exophthalmic type.

Dr. Henry G. Piffard said he was not an enthusiastic advocate of the *x*-ray as a therapeutic measure. He had seen so much harm done by it, and had seen and heard of so many cases that could have been treated to better advantage in other ways, that he had not resorted to it to the extent that many had done, nor did he value it as much as he did other and older remedies. Many men used the *x*-ray who had not a proper knowledge of the subject. A man who bought an *x*-ray apparatus and turned on the switch did not thereby make himself a radiotherapeutist. The treatment could not be administered properly without some knowledge of the rays themselves. The majority of cases of skin diseases and superficial affections could be cured more easily and more cheaply by methods that were in vogue before the introduction of the *x*-ray. There were two conditions of the skin, however, in which the application of the ray was apparently superior to other methods, namely, mycosis fungoides and ringworm of the scalp.

Dr. Edward B. Bronson said he would limit his remarks to the good effect of the *x*-rays in some of the simpler forms of disease of the skin. Such simple affections as acne, rosacea, rebellious callosities of the palms and soles, inveterate squamous or psoriatic forms of eczema, and many other chronic cutaneous troubles of a superficial character, when they did not readily yield to the commoner methods of treatment, might often be made to succumb to Roentgen radiation with a facility that was surprising, nor need there be any ill after-effects worth considering. Thereby not only might the skin be restored to its normal appearance in a comparatively short period, but also in many cases would the disposition to recurrences be markedly diminished. The tendency of the action of the rays was to produce involution or atrophy. Newly-formed cells were the first to undergo destruction, and the problem was to avail ourselves of this involutional tendency just to the extent of counteracting the disease process, without overstepping the margin of safety. It often happened that the best results followed a slight local inflammatory reaction. This was especially true of acne and rosacea. The reaction should be slight, but definite; just a moderate degree of erythema. The sooner this was effected, the better, and the less prolonged the treatment. Perhaps, in the treatment of psoriasis with the *x*-rays, a quicker and more permanent result would be obtained were the radiations pushed to the reaction point. This, Dr. Bronson said, he had never ventured to do, as the lesions disappeared rapidly enough under the combined use of the rays and chrysarobin. But it was always the rayed patches, even if the worst, that showed the most rapid involution; much more rapid than those treated only with chrysarobin. He was also inclined to believe that the rayed areas were less disposed to relapse. The speaker said that his experience with the rays in hirsuties had not been unfavorable, and for some bad cases it answered better than electrolysis. While there were few, if any, diseases in which the use of the *x*-rays was to be commended as an exclusive method of treatment, as an adjuvant to other methods, or, rather, as an extra force introduced for the purpose of overcoming an inertia otherwise intractable, it had a distinct and extraordinary value, but a value unfortunately not devoid of risks.

Dr. Charles W. Allen said that a few years ago the subject of *x*-ray therapeutics was spoken of as being in its infancy. Personally, he thought it was just as much in its infancy now as it was then, and that we were just beginning to realize what the *x*-ray had done for medicine and for humanity. He objected to the free tendency of the surgeon to suggest excision as the only alternative in the treatment of skin cancers, and claimed that there was a virtue in caustic paste which was not second to that of the knife and that there were strong reasons often for preferring it. Apart from the inherent value of the *x*-ray, it had done good in giving the patients a certain degree of confidence that something could be done for them, and thus permit of other efficacious measures. If the lesion was such that it did not respond to the *x*-ray, then we could resort to caustic paste, or, if necessary, the knife, and in many instances the older methods give more prompt if not better results.

Dr. J. Edward Stubbert spoke of the value of the *x*-ray as a diagnostic aid in the recognition of tuberculosis, empyema, pleurisy, and miliary tuberculosis. In the latter he considered it of great value. Even in cases of incipient pulmonary tuberculosis he had found it a valuable adjunct to other methods of diagnosis, and in a few instances he had been able to make the diagnosis by the *x*-ray findings alone, before any physical signs could be detected. As a therapeu-

tic agent, the ray was of value in promoting absorption of slight consolidations, and in reducing the various cocci in mixed infection of more advanced cases. Its greatest value, however, was in diagnosis.

Dr. Sinclair Tousey, in discussing the subject of the application of the *x*-ray in surgery, said that recent improvements in technique had made it possible to take pictures through the entire thickness of the head with such a degree of clearness of detail as to be of positive assistance in the diagnosis of disease of the antrum and other pneumatic sinuses. To illustrate this fact, the speaker exhibited two radiographs, one revealing the presence of pus in the ethmoidal cells, and the other in the antrum. Dr. Tousey said that a knowledge of the amount of *x*-ray which it took to produce certain physiological effects was of paramount importance. It was necessary to know this in order to enable one to apply the ray safely both for examination purposes and in order to produce the desired curative effect in cases of cancer and other conditions in which the applitions were deemed advisable. His own method, which he had used for a year, was applicable to each and every exposure; it consisted of an intensimetric scale by which the intensity of the rays could be estimated with a reasonable degree of accuracy. The scale was based upon the measurement of the distance to which the *x*-ray would carry and still produce visible fluorescence in a fluoroscope which was held to the examiner's eye.

Dr. Lewis Gregory Cole said that some of the pictures of fractures shown by Dr. Beck might prove misleading if only a single radiograph of the lesion were taken. A picture which showed the fragments in perfect apposition in one direction might disclose a marked displacement of the fragment with overriding of an inch or more in another direction. Dr. Cole said that two distinct kinds of rays were emitted by the *x*-ray tube in about equal amounts. These he described as direct and indirect rays; they were distinctly different radiographically, and why not therapeutically? When once their true significance was understood, the efficacy and safety of *x*-ray therapeutics would undoubtedly be much enhanced.

Dr. J. Herman Branth said that to rely for diagnostic purposes simply on a fluoroscopic examination would often lead to mistakes. A skiagraph was by far more reliable, but by no means infallible. To illustrate this, Dr. Branth showed a number of skiagraphs of bones, and although the latter were in separate pieces, the lines of separation in the pictures were concealed and invisible. The skiagraphs emphasized the importance of the fact that the plane of the fracture should be placed vertical to the plane of the photographic plate in order to bring out the fracture line. As a therapeutic measure, the Roentgen rays furnished perhaps even more variable results than in skiagraphy, for there entered as factors the idiosyncrasy of the patient, the constitutional condition, the progress and stage of the ailment, etc. If it was too far advanced, even the best remedy would avail nothing, and it would be an error to condemn the *x*-ray on such experience. Another question that came up was, Should the *x*-ray be used exclusively, or should it be combined with medical treatment, so as to bring the body into the best possible defensive condition, in order to facilitate repair and restore the vital processes to a proper balance?

Temperamental Dietetics.—According to a statement ascribed to Prof. Boyd Laynard by the *St James's Gazette*, eels must not be eaten by brain workers, chilly persons should cultivate a taste for sardines, while irritable people are warned away from ginger, and the melancholy man must not touch bacon. Whitebait is inadvisable for persons who are of an amorous nature, asparagus is forbidden to those who suffer from excitement, and languid persons are told to be careful when they indulge in peas, potatoes, arrowroot, and macaroni. Duck is described as unsuitable for the bashful, the irate, the pale, the drowsy, and the inebriate.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

Eighteenth Semi-Annual Meeting, Held at St. Joseph, Mo., March 22 and 23, 1906.

Dr. John E. Summers of Omaha, President.

(*Concluded from page 604.*)

Club-Foot, with Special Reference to Post-Operative Treatment.—Dr. M. M. Edmonson of Kansas City, Mo., said that by beginning treatment early the foot could always be corrected by force alone. The soft tissues were easily stretched, and the bones that were malformed, especially the astragalus, were soft and cartilaginous, so that they could readily be moulded to conform to a normal position. At this stage it would require very little force to maintain this position, and it could be accomplished without causing pain. In its new position, the foot would develop normally with the rest of the body. The contracted tendons and soft tissues having been stretched, the elongated tendons would become contracted. In maintaining the corrected position at this age, a fixed dressing was probably used more than any other, especially plaster-of-Paris, but in this the ankle-joint was immobilized and all the advantages of muscular exercise were lost. It was often difficult to apply the dressing so that the position was as good as that gained by the hand. The Barwell dressing had all the advantages and none of the disadvantages of the plaster-of-Paris or any fixed dressing. It was simply and easily applied. No case should be cut that could be corrected by force. Following any method of correction, some mechanical support was necessary; as the primary cause still existed, some aid must be given in maintaining this muscular balance until nature alone was sufficient, and this could be reached only when the foot could be everted and flexed as easily as it could be inverted and extended. Feeling the need of a simple, yet effective retaining force in those cases, about four years ago the author devised a brace which he had found more nearly met all requirements. The shoe used in connection with the brace was the usual one made for the normal foot. It, however, should be heavy and made of the best material. This brace and its method of application were described, and cases in point cited.

The Indirect Effects of Valvular Lesions.—Dr. W. F. Milroy of Omaha said that all cell life and activity depended upon a proper blood supply. For this the heart was responsible. Therefore, a defective circulation might manifest itself in any part of the body. Valvular defects were met by compensatory hypertrophy, and yet this never restored a perfectly normal circulation. The author called particular attention to the wide range of symptoms not obviously connected with the heart. These were associated with the gastro-intestinal, respiratory, or the nervous system, or were more general, as loss of weight, power of concentration, or endurance. The date of origin of the symptoms was uncertain, their duration often many years. It was particularly insisted that in the vast majority of cases the development of symptoms was slow and insidious. Endocarditis, which caused the lesion, was secondary to many general infections. A history of rheumatism suggested an examination of the heart for valvular disease, but in the writer's opinion too much importance was given this infection in the etiology. Valvular disease was of far more frequent occurrence than was generally supposed. Clinical teachers and textbook writers were at fault in not emphasizing sufficiently their indirect effects. Gross errors in diagnosis were of very common occurrence. They suggested the necessity

for more attentive study of the art of physical diagnosis by the practitioner and the wisdom of an invariable rule in making such examinations a part of every diagnosis.

Rupture of the Male Urethra.—Dr. B. A. McDERMOTT of Omaha discussed some of the principles in the treatment of this condition. After speaking of the clinical pathology, the symptoms in penile rupture, and the symptoms of rupture of the membranous and bulbous portion of the urethra, both local and constitutional, he pointed out the indications for surgical interference, based upon the following reasons: (1) In cases of rupture of the urethra, immediate perineal or suprapubic section, with suture of the ruptured ends of the urethra, should be practised. (2) By this procedure not only were the sufferings of the patient lessened, as well as the danger of urinary infiltration and abscess, but in a large number of cases the formation of a later stricture might be prevented. (3) In early operation the search for the posterior end of the urethra was much easier than it was later, as the tissues were not so infiltrated and the posterior end was not so retracted. The hemorrhage from the branches of the arteries of the bulb served as a guide to the end of the canal.

Some Advances in the Office Treatment of Rectal Diseases.—Dr. R. D. MASON of Omaha advocated the treatment of all minor rectal diseases by the use of local anesthesia, using weak eucaine solutions of one-half to one per cent. when injected, and as high as ten per cent. if applied locally to the mucous membrane. He advocated the injection method of treating a certain class of internal hemorrhoids, and described the cases to which it was adapted as those of the old indurated variety in which the tumors were hard and painless, and caused inconvenience more because of their constant protrusion through a loose sphincter muscle than because of any actual suffering. The author also discussed the use of sterile water as a local anesthetic, and showed that it was useless except in tissue where it would be held for a sufficient time to make pressure on the nerve ends and drive out the blood. Because of the large amount of water required, the tissues were so distorted that operation was difficult. A method for divulsing the sphincter under local anesthesia was described. The use of the actual cautery for the cure of hemorrhoids, ulcers and other conditions that needed treatment was discussed, and the technique described.

The Removal of the Uterus for Chronic Inflammation.—Dr. T. C. WITHERSPOON of St. Louis considered chronic retrosalpingitis. He advocated the removal of the chronically enlarged uterus, whose density and vascularity were increased, which, associated with chronically inflamed and altered tubes, caused local and general symptoms that made life burdensome. This was the condition for which, for a long time, he was unwilling to advocate a procedure quite as radical as removal, and did in its place the so-called conservative operation—partial removal of the tubes, resection of the ovaries, correction of retrodisplacements, by various techniques. His results were not good, often not even satisfactory, and for this reason he began to institute a more radical treatment. The starting-point of chronic retrosalpingitis was practically the endometrium. The inflammation might primarily awaken the infectious agents or the predisposition to infection, especially by altered nutrition of the endometrium, the result of repeated congestions, faulty position of the uterus, subinvolution, growths of the uterus or adenxa, or some general infection or constitutional debility. Removal of the uterus brought about entire relief, but much depended upon the technique of the operation. Three things must be imperatively observed: (1) Removal of the uterus with practically all of its endometrium. (2) Avoidance of the large sympathetic pelvic brain, which, with its many central and visceral connections, was situated at the cervicovaginal junction. (3) Complete closure of the peritoneum covering the pelvic floor in order to avoid bowel adhesions. The best technique in the removal of the inflamed uterus was, according to the author, the following: After entering the abdomen by a median suprapubic incision, the tubes were tied off carefully, avoiding injury to the ovaries. A clamp was applied upon either side of the uterus, letting its tip reach well down to the cervix; the body of the uterus was freed from the broad ligament attachments by cutting along the clamps. Amputation was to be performed through the cervix by an exaggerated V-shaped incision, the apex of the V reaching nearly to the external os. The cut ends of the utero-ovarian artery loop were tied, after releasing the clamps, with catgut. The stump was closed, suturing to it the ovarian and round ligaments. All raw surfaces should be covered with peritoneum. Iodine catgut should be used as suture and ligature material. The author felt certain that he had seen considerable reflex irritation from silk and linen ligatures used in tying off the uterine and ovarian arteries *en masse*. The iodine catgut was to be preferred to the cumol gut, in that it resisted infection.

Ligation of the Common Femoral Artery for Large Aneurysm in Scarpa's Triangle; Recovery.—Dr. L. J. DANDURANT of St. Joseph, Mo., reported the case of a man, forty-two years of age, and exhibited patient, who was first seen November 20, 1905. Inquiry revealed a specific infection dating back ten years; also a trauma occurring two years ago in the nature of a horse kick. Examination revealed a large pulsating tumor filling the greater part of Scarpa's triangle, which the author diagnosed as an aneurysm of the femoral artery. He advised the removal of the patient to the hospital and at once began the administration of large doses of iodide of potassium suggested by the specific history. An effort was then made to induce coagulation by compression, with no result whatever from this procedure. He then determined to increase the dosage of the iodide of potassium, and to try the rest cure advised by some writers. Under this treatment the tumor remained stationary for a short time only, and then began to enlarge very rapidly. The author ligated the common femoral artery, without any further delay, just below Poupart's ligament. This was done December 23. From the subsequent history of the case the patient did not present a single untoward symptom. All pain ceased, and the tumor began to decrease in size. The circulation in the leg and foot was apparently not disturbed. They have remained warm ever since the operation, and there has not been a sign of edema at any time. In placing his ligature, he followed the suggestion of Hunter, tying it tight enough to check the pulsation, but still permitting some blood to flow through the tumor. At the end of four or five days, however, this was entirely shut off, and to-day there is a well-organized clot, with perhaps a cavity at its center. The patient left the hospital at the end of five weeks. He succeeded in keeping him quiet a few weeks longer, but at present patient felt no inconvenience on account of the tumor. The author referred to the scarcity of literature on this subject, and to reported cases. He spoke of the importance of conservative management in these cases.

The County Sanatorium for the Treatment of Pulmonary Tuberculosis.—Dr. RICHARD C. MOORE of Omaha said that the indications for the successful management of this disease were surveillance, disinfection, and by appropriate means to increase the

natural power of resistance. These indications could be followed out most satisfactorily by establishing and maintaining sanatoria. He called attention to the statistics of the deaths from consumption in several states, taken from the report of the census of 1900. He believed that a sanatorium in Nebraska would be the means of saving many lives, and would be a center from which information could be promulgated for the early management of such cases, and would thus in time, by instructing the people in prophylaxis and in the home treatment of consumption, greatly reduce the mortality from this cause. Theoretically, the modern treatment of pulmonary tuberculosis could be carried out in the home of the patient, but practically it had been the author's experience that it was impossible to convince the laity, and in fact many members of the profession, that night air was not injurious and that wind, rain, or snow should not be excluded from the apartment occupied by the patient, when by such exclusion the free circulation of pure air was also shut out. To carry out this treatment, the patient must be placed in a suitably arranged apartment, and be absolutely under the constant surveillance of a trained nurse or experienced physician. To accomplish this desideratum, the well-equipped sanatorium was probably the best, but such institutions were very costly to construct, and very expensive to maintain, which rendered them prohibitory in many communities. In Nebraska, where the consumptives, as shown by statistics, were not numerous, the cheapest and most practicable manner of taking care of such cases would be in properly arranged county hospitals. Instead of the ownership and management being under State charge, each county could take care of its own consumptives as it now did its indigent sick and paupers. What was needed to carry out this plan was a well-drained site upon which the county authorities could erect suitable buildings for its tuberculous patients in connection with proper facilities for the culinary department and housing of nurses. The author was inclined to favor a plan similar to that suggested by Dr. Irving Fisher, of New Haven, the main feature of which was an arrangement for ventilation by means of shutters, which were changed automatically with the direction of the wind. Mr. Kimball had given special attention to the construction of tents and wards for the modern treatment of tuberculosis, and had embodied in his plans many valuable and original ideas.

The Expectant Mother.—Dr. E. T. Shelly of Atchison, Kansas, said that the physician owed it to the expectant mother and to himself to give her the best professional attention he was capable of bestowing. As a necessary part of such attention, he should, during the pregnancy, give her such guidance as her condition called for, and to furnish it in a permanent and accessible form. The author spoke of the desirability of supplying the prospective mother gratuitously with an easily understood original pamphlet, issued by the physician himself, and giving her such information as in his opinion, she ought to have in order to pass through her ordeal as comfortably and safely as possible. Such a pamphlet he outlined.

Rachitis.—Dr. A. E. King of Blockton, Iowa, refered to the etiology of rachitis; to the relation to and production of laryngismus stridulus, and spoke of the large number who were afflicted with this disease, and yet whose cases were not recognized by the medical profession. He pointed out the importance of making an early diagnosis, and of instituting proper treatment.

The Surgery of the Paralyses.—Dr. John Prentiss Lord of Omaha said that the education of the general practitioner in this specialty had been limited, and therefore he had too little working knowledge of the benefits to be derived from surgical intervention. The deformities resulting from paralysis were all of a progressive character; therefore, effective treatment instituted before the deformity began would prevent subsequent deformity. It was essential that the general practitioner should recognize that neglected paralysis would surely produce certain deformities, and measures should be taken to prevent or minimize their results. The mere maintenance of a limb in a corrected position not only prevented deformity, but prevented overstretching of muscles which unstretched and treated might be of some service. This was more especially true in spastic conditions. Paralyzed children were entitled to all that science could do for them, and even then the results were small. Oftentimes massage, electricity, bathing, movement, and use would do much in maintaining growth in bone, muscles and ligaments, and limit deformity. The present tendency was to limit the use of apparatus and resort to such surgical measures as would render the limbs most useful. These operations should be judiciously applied to the individual cases, and supplemented by such treatment as would furnish the greatest aid in completing the results. Time was a great factor, and proper knowledge should be displayed lest its proper use be abused and valuable time lost. Reference was made to the great advancement in this branch of surgery; also to nerve transplantation and neuroplasty, or nerve anastomosis.

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

A Textbook on the Practice of Gynecology. By William Easterly Ashton, M.D., LL.D. Second Edition. 8vo, 1,079 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price, cloth, $6.50; half morocco, $7.50, net.

A Treatise on Surgery. By Dr. George Ryerson Fowler. Volume I. 4to, 722 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price per set of two volumes, cloth, $15; half morocco, $17, net.

A Textbook of Materia Medica, Therapeutics, and Pharmacology. By George F. Butler, Ph.G., M.D. Fifth Edition, revised and rewritten by Smith Ely Jelliffe, M.D., Ph.D. 8vo, 694 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price, cloth, $4; half morocco, $5, net.

Diseases of the Eye. By G. E. DeSchweinitz, A.M., M.D. Fifth Edition. 8vo, 894 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price, cloth, $5; half morocco, $6, net.

The Operating Room and the Patient. Dr. Russell S. Fowler. 8vo, 172 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price, $2, net.

Nursing in the Acute Infectious Fevers. By Dr. George P. Paul. 8vo, 200 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price, $1, net.

Essentials of the Genito-Urinary and Venereal Diseases. By Dr. Starling S. Wilcox. 12mo, 313 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price, $1, net.

On Professional Education, with Special Reference to Medicine. By T. Clifford Allbutt, M.A., M.D., F.R.S., etc. 12mo, 80 pages, muslin. Macmillan & Co., New York. Price, 75 cents.

Notes on General Practice. By Dr. S. M. Hebblethwaite. 12mo, 78 pages, muslin. The Scientific Press, London, England. Price, 3/6, net.

Case Teaching in Medicine. By Richard C. Cabot, A.B., M.D. 8vo, 214 pages, muslin. D. C. Heath & Co., Boston.

The Crux of Pastoral Medicine. By Rev. Andrew Kiarmann, A.M. Second revised and enlarged edition. 12mo, 221 pages, muslin. Fr. Pustet & Co., New York. Price, $1.25, net.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cas and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending April 14, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	390	183
Diphtheria	328	35
Measles	1512	47
Scarlet Fever	220	20
Smallpox	5	
Varicella	93	1
Typhoid Fever	30	10
Whooping Cough	34	6
Cerebrospinal Meningitis	41	30
Malarial Fever		
Totals	2,653	332

Human and Bovine Tuberculosis.—Valée and Carré have completed certain researches in this line of work undertaken by Nocard. In the first experiment a cow free from tuberculosis was inoculated in the udder with a culture grown on potato, of human bacilli recently isolated from the sputum of a tuberculous patient. During the following year the only results noted were a change in the milk and a slight induration of the mammary region inoculated. From the thirteenth month the bacilli appeared to become adapted to their new quarters, and a serious tuberculous mammitis developed. Four calves who at two different times had drawn milk from this infected udder contracted an extensive abdominal and pulmonary tuberculosis. At the end of the twenty-second month of the experiment the inoculated cow was killed. Besides the tuberculous mammitis, there were found specific abdominal and pulmonary lesions. The human bacillus that had been inoculated was previously recognized by Nocard as lacking in the qualities pathogenic to cattle. In the second experiment a monkey swallowed a small quantity of very virulent culture of bovine tuberculosis. This same culture, inoculated into the udder of a cow, killed the animal in thirty-two days. The monkey contracted a generalized tuberculosis, from which it soon died. The bovine bacilli which lodged in the mesenteric ganglia of the monkey lost their virulence for the cow. They had to be passed successively through the udders of two milch cows in order to partly regain the initial virulence for cattle. The culture finally killed a third cow in sixty-five days after inoculation. These experiments established clearly the fact of the ease with which the bacilli of Koch are changed, and also their faculty of adaptation to species of animals other than those from which they are taken.—*Le Bulletin Médical.*

To What Extent Should Insurance Organizations Educate Their Insured as to Healthful Living?— E. S. Sherrill calls attention to the statistics concerning 5,379 deaths. He gives a list of well-known diseases represented in this mortality—typhoid fever, malarial fever, consumption, diabetes, apoplexy, organic heart disease, angina pectoris, pneumonia, liver and gall-bladder diseases, appenditicitis and peritonitis, and Bright's disease Here is a total of 3,093 deaths, nearly 60 per cent., from these diseases. The writer believes that a physician of fair ability who could have had the oversight in a somewhat authoritative way of the lives thus ended could have made a very great change in the death rate. Many of the deaths were due to preventable diseases. These cases cited are selected lives. The five hundred who died from tuberculosis are supposed to have shown no trace of the disease at the time of examination. The German Sick Benefit Societies find it an actual financial advantage to send members to sanatoria for treatment for tuberculosis rather than pay them sick benefits at home. Fraternal insurance in this country is following the example. The project developing at Las Vegas, the writer thinks, will doubtless prove equally advantageous. He believes that insurance organizations should enter upon a careful plan of instructing policyholders along lines which will tend to lengthen life expectancy.—*The Medical Examiner and Practitioner.*

Epidemic Mumps and Whooping-Cough.—Paolo Galli calls our attention to the statement of Bernardone that parotitis and pertussis may possibly be antagonistic. He has observed some evidences of such antagonism. The author records the history of an epidemic of parotitis coincident with one of pertussis observed by him at Faenza. Where the parotitis existed the pertussis did not appear in some districts, and vice versa, so that the two diseases seem to confer a temporary immunity against each other. In other districts the pertussis was very mild in character after the parotitis had occurred, in many children. Hence the author thinks we are justified in saying that mumps has favorably influenced pertussis in some cases, but that more observations are necessary before we come to any definite conclusions.—*Rivista Critica di Clinica Pediatrica,*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending April 14, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Arkansas, Fort Smith	Mar. 24–31	1	..
California, Los Angeles	Mar. 24–31	15	..
San Francisco	Mar. 17–31	27	4
District of Columbia, Washington	Mar. 31–Apr. 7	1	..
Florida, Jacksonville	Mar. 31–Apr. 7	1	..
Georgia, Augusta	Mar. 26–Apr. 2	4	.
Kentucky, Covington	Mar. 31–Apr. 7	2	..
Louisiana, New Orleans	Mar. 31–Apr. 7	5	..
Maryland, Baltimore	Mar. 31–Apr. 7	3	..
Michigan, Detroit	Mar. 24–Apr. 6	2	..
Grand Rapids	Mar. 31–Apr. 7	1	..
Mississippi, Natchez	Mar. 31–Apr. 7	1	On vessel.
Missouri, St Louis	Mar. 31–Apr. 7	2	..
New Jersey, Hudson County	Apr. 1–8	4	..
New York, Buffalo	Mar. 24–31	1	..
New York	Mar. 31–Apr. 7	2	..
North Carolina, Greensboro	Mar. 31–Apr. 7	3	..
Ohio, Cincinnati	Mar. 30–Apr. 6	3	..
Cleveland	Mar. 30–Apr. 6	1	..
Tennessee, Knoxville	Mar. 31–Apr. 7	1	..
Utah, Ogden	Mar. 1–31	3	..
West Virginia, Wheeling	Mar. 30–Apr. 6	2	..
Wisconsin, Appleton	Mar. 31–Apr. 7	4	..

SMALLPOX—FOREIGN.

Africa, Capetown	Feb. 24–Mar. 3	4	
Austria, Galhcia (Province)	Feb. 18–Mar. 3	36	
Voralberg (District)	Feb. 18–Mar. 3	17	..
Canada: Seven Islands	Mar. 21	..	Present.
Winnipeg	Mar. 24–31	1	"
Chili, Iquique	Mar. 3–10	..	..
China, Hongkong	Feb. 10–24	24	17
Ecuador, Guayaquil	Mar. 4–22	13	..
Egypt, General	Dec. 17–31	77	14
France, Paris	Mar. 17–24	6	1
Germany, Kehl	Jan. 1–31	..	1
Gibraltar	Mar. 18–25	4	..
Great Britain, London	Mar. 17–24	5	..
Greece, Patras	Feb. 27–Mar. 6	3	2
India, Bombay	Mar. 6–13	..	8
Calcutta	Feb. 24–Mar. 3	..	189
Karachi	Feb. 25–Mar. 11	53	20
Madras	Mar. 3–9	..	48
Rangoon	Feb. 24–Mar. 3	..	83
Italy, General	Mar. 15–22	35	..
Netherlands, The, Rotterdam	Mar. 24–31	3	..
Russa, Moscow	Mar. 3–17	19	..
Odessa	Mar. 17–24	6	..
Spain, Tarragona	Mar. 17–24	..	2
Turkey, Constantinople	Mar. 11–18	..	2

YELLOW FEVER.

Ecuador, Guayaquil	Mar. 4–22	..	36
Mexico, Merida	Apr. 10	1	..
Salina Cruz	Mar. 18–24	1	Imported.
Tehauntepec	Mar. 18–24	1	"
Vera Cruz	Apr. 9	..	1 (Imported.)

CHOLERA.

India, Bombay	Mar. 3–13	..	2
Calcutta	Feb. 24–Mar. 3	..	50
Rangoon	Feb. 24–Mar. 3	..	2

PLAGUE.

China, Hongkong	Feb. 17–24	17	16
India, General	Feb. 24–Mar. 3	3425	2739
Bombay	Mar. 6–13	..	411
Calcutta	Feb. 24–Mar. 3	..	59
Karachi	Feb. 25–Mar. 11	67	58
Madras	Mar. 3–9	..	4
Rangoon	Feb. 24–Mar. 3	..	30
Peru, Callao	Feb. 24–Mar. 5	1	..
Lima	Feb. 24–Mar. 5	1	1
Mollendo	Feb. 24–Mar. 5	1	..
Paita	Feb. 24–Mar. 5	2	2
Trujillo	Feb. 24–Mar. 5	13	6

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 17.
Whole No. 1851.

NEW YORK, APRIL 28, 1906.

$5.00 Per Annum.
Single Copies, 10c

Original Articles.

THE ETIOLOGY OF RELAPSES IN SYPHILIS.*

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VIENNA, AUSTRIA

ALTHOUGH syphilis is one of the best known diseases and has been made the subject of many researches both from its anatomical and from its clinical aspects, one of its most characteristic peculiarities, its relapses, using the term in its widest sense, has not yet been explained adequately from an etiological point of view. It is, therefore, easy to understand that the origin, the localization, and period of occurrence of syphilitic relapses should be made the objects of frequent researches. The subject has recently been discussed by Lesser,[1] and the case which served as the text for his disquisition as well as the practical conclusions to be drawn from it have impelled me to take up the matter again although I have already on several occasions spoken of it. In my last study in this connection,[2] the theories of the etiology of the relapse in syphilis are discussed and their pros and cons set forth in detail.

In regard to Virchow's hypothesis, quoted by Lesser which was probably the first theory founded on an anatomical and clinical basis, it must be admitted that it cannot be regarded as absolutely correct even for the earlier relapses in which a contamination of the blood stream can be taken for granted, the condition which Virchow evidently had in mind, since his theory assumed that the lymph glands formed the main repositories of the syphilitic virus from which intermittent infections of the organism took place. For relapses often occur in syphilis without demonstrable swelling of the lymph glands, and enlarged glands often persist for long periods of time without any relapse. But although there is no doubt that syphilitic glands are foci of virus from which this may penetrate into the juices of the body and evoke a new eruption in any region, repeated histological researches have demonstrated that every portion of the body which has been the seat of a well developed syphilitic product retains the residua of this, and during many years, like the lymph glands, may serve as a depot of virus which, under suitable conditions, may give rise to a relapse *in situ* in the neighborhood, or in a more remote region. The traces of syphilitic products which persist after the disappearance of the clinical manifestations are the only demonstrated sources of the temporary contamination of the blood, that is, of the relapse. This has been proven through relapses *in situ* which are sometimes often repeated and which may occur in consequence of definite irritations, or spontaneously. That these deposits in the course of the disease may diminish and finally completely disappear is in accordance with their biological character. In this way a sufficient explanation is furnished of the progressive diminution in frequency and intensity of the lesions, the unsymmetrical nature of the manifestations, the diminished or totally lost virulence, and the entire disappearance of relapses which is in proportion to the period of duration of the disease. I wish to emphasize the fact that the syphilitic lymph glands owing to their structure and function are especially well adapted to be repositories of the syphilitic poison. Lesser makes the following objection to this and to Virchow's theory: "If we regard only the manifestations on the skin, which are the most conspicuous and therefore the best known, the typical course of events is that at first a symmetrical exanthem appears, which in the beginning is spread over the entire or almost the entire body but is later on followed by less extensive but still symmetrical relapses, until finally, in the latest stages, isolated, unsymmetrical lesions appear. If these relapses are produced by the liberation of the poison contained in certain foci why do not the later and latest lesions display the extensive and symmetrical localization of the first eruption, which is formed as the result of the universal dissemination of the poison present in the circulating blood?" Without reflecting on Lesser's emphasis on the symmetry of the first and earlier syphilitic eruptions, I should like to remark that this argument would justify the conclusion that in time the syphilitic virus, quantitatively and qualitatively, and also the conditions of origin of the syphilitic manifestations, have undergone an alteration which would lead to the asymmetry and isolation of the lesions which are referred to by Lesser. It does not prove, however, that, so long as a relapse *in situ* is not in question, the virus causing the unsymmetrical and isolated lesions cannot arise in a neighboring or more or less distant lymph gland. It is not necessarily, but may be the case that the syphilitic virus may remain longer precisely in the lymph glands until through some cause it passes into the lymph stream, so that it seems plausible to believe that the lymph glands may also have their part in the virus which gives rise to the late relapses, if they do not furnish it entirely. Very remarkable and difficult to explain are those relapses which sometimes occur after a free interval of one or more decades. It must be admitted, however, that the existence of latent intervals of ten, fifteen, or more years has not been indubitably proven. Syphilitic symptoms may entirely escape even the most careful observation, provided this is not continuous in the strictest sense of the word, or their specific nature may not be recognized. This is especially true of symptoms which are frequently found in other conditions, such for example as anemia with all its concomitants and sequelæ, or visceral affections which, although

*Address delivered before the 15th International Medical Congress, Lisbon, April 19-25, 1906.

depending on a syphilitic basis, may be ascribed to other causes. Furthermore, manifestations unaccompanied by striking symptoms may attract the patient's notice but slightly or not at all and disappear spontaneously, so that they never come under medical observation. There is no doubt that the putative long periods of latency arise in this way, although I would not deny their existence absolutely. Unna's theory which considers every syphilitic relapse as a relapse *in situ* does not help us over the difficulties attending the solution of the question of periods of latency lasting three, ten, fifteen, or more years. It may, in addition, be regarded as an accepted fact that relapses occur also in portions of the body where no lesions occurred originally, although the relapse *in situ*, as I long ago and since then frequently have noted is much commoner than was generally considered formerly or even at present. I believe that in order to demonstrate the frequence of relapses *in situ*, which is of importance for the present question, the procedure advocated by Hjetman is to be warmly recommended, at least for the organ that is most suited to it, the skin. The dicta of Lang which are also cited by Lesser are, as a matter of fact, deductions from the clinical course of the syphilitic process in its most pronounced phases. An objective explanation of the pathogenesis of the syphilitic relapse, especially the late relapse after very long periods of latency, is, on due consideration, not afforded by them. If, in view of Schandinn's observations, one considers the powers of resistance and the length of life and of virulence of many pathogenic organisms—that, for example, the spores of anthrax after remaining in the soil for more than ten years entered the animal body again may unfold their full activity; that Hjelmann was able to demonstrate pathological products in the excised scar of a chancre of the frenulum thirteen and a half years after infection—it does not appear astonishing that the organism of syphilis after years of inactivity in an encapsulated, inveterate, syphilitic focus under the influence of favorable conditions may reacquire its former virulence, multiply, and, becoming active again, give rise to new lesions. That at the present moment we are unable to offer an explanation of the origin of late relapses of syphilis is, as Lesser has correctly observed, owing to our ignorance of the nature of the syphilitic virus and the causative agents of the disease. But I should like to point out that in the chronic infectious diseases, especially in the one which presents the closest analogy to syphilis, tuberculosis, in spite of our more accurate knowledge of the causative agent the explanation of the origin of the primary infection and of the relapses is still far from complete. So long as we remain in ignorance of the relations of the incitants of disease to the biological processes of the body we shall be unable to solve these questions in a satisfactory manner.

In regard to Lesser's case I refer to my observations[3] on the histological findings, in which the persistence of pathological products after the disappearance of the manifest clinical alterations has been proved in unimpeachable fashion. Lesser's case and that of Jadassohn cited by him, as well as one of Lesser's in which the roseola rings surrounded the areas of leucoderma on the neck, impel me to refer to an observation that I have repeatedly made and called attention to: that the anatomical changes persisting after the disappearance of the clinical manifestations usually extend far beyond the area of the changes visible externally. In consequence of this the cases cited are practically relapses *in situ* in which a distribution beyond the original area limits may have taken place. Jadassohn's statement, "one receives the impression that a virus is distributed irregularly from the central focus," is a fact that has been established by my own microscopical studies and later by those of others. The irregularity is due to the fact that the larger portion of the disease germs is buried in the adventitia and in the perivascular spaces of the irregularly disposed vessels.

In passing it may be remarked that in cases of relapse *in situ* the deeper situation which heretofore has been considered as characteristic for the late syphilitic relapses in general—for the skin in the subcutaneous tissues, for the mucous membrane in the submucous tissues, for the periosteum in the superiosteal tissues—is to be explained on the ground that in the recent syphilitic product the histological changes also extend deeper than might be inferred from the clinical manifestations.

In regard to the objection that has been made, "that if all the relapses, including the isolated and unsymmetrical ones occurring in the latest stages, are produced through a new infection of the blood from encapsulated foci, why do not the later and latest relapses exhibit the extensive and symmetrical disposition of the first eruption?" it may be said that for the production of relapses *in situ* circulation of the syphilitic virus in the blood is not necessary. That local stimuli, even of a purely functional nature, may suffice to effect this is a well-known and universally recognized fact. In this connection, I refer again to the relapses occurring in the mouth and pharynx where, in consequence of mechanical, chemical, thermic, and functional irritations, not only the cure of the syphilitic manifestations is protracted but the relapse *in situ* is also a common occurrence. In those portions of the mucous membrane which were occupied by a circumscribed erythema or in the immediate neighborhood, a papule is formed which later becomes an ulcer, and after the cicatrization of this, sooner or later a gumma forms, as has been shown by observations. I recall the cases of Portalier,[5] in one of which an ulcerative syphilide relapsed during five years in the same spots, in another a psoriasis palmaris returned again and again during ten years in a physician who had infected his finger. In the same connection I would mention an interesting case recently reported by me in which the original lesion formed papules on the posterior pharyngeal wall. During a space of five years at varying intervals ulcers appeared at the same spot followed by ulcerating gummata which destroyed the soft parts and then the anterior segments of the three upper cervical vertebræ until the cervical cord become involved and death resulted. In cases of late relapses *in situ* it follows from what has been said that there is no difficulty in explaining the asymmetry and the singleness of the lesions. But, as I have already observed, my clinical experience shows that on the skin, which is the most studied and most accessible organ, late lesions also occur in places in which originally no syphilitic manifestations developed, although, as I should like to point out, the latter in most cases are relapses *in situ*. Among forty-eight women who had chancres of the cervix and who came repeatedly under observation on account of various conditions, twenty-five, or fifty-

six per cent., in the space of from a few months up to fifteen years, had relapses which were located in the situation of the primary lesion. This figure might be considerably increased if only the relapses occuring five, ten, or fifteen years after the infection should be considered. Nevertheless there remains a considerable number of late relapses which are situated in regions where originally there was no syphilitic lesion. Such relapses as these are far from easy to explain in regard to their localization, singleness of occurrence, and special conditions of formation. I consider that Lesser's view in this respect deserves quotation verbatim: "Accordingly we assume that in the eruptive stage of syphilis the entire body is flooded with the virus of the disease; that then portions of the poison remain at first in a uniform manner in numerous parts of the body from which, in the further course of time, relapses originate, but that the longer the interval that has elapsed since the infection more and more of these remaining germs perish and finally disappear entirely. This affords a ready explanation for the fact that . . . the first relapses are numerous and are symmetrical, but that as time passes the eruptions become scantier and more irregular in distribution, in conformity with the isolated location of the germs that still exist and develop. If, finally, very late relapses occur, these are usually solitary or form only a few foci because only very few germs possessing vitality still remain." From this it may be seen that Lesser agrees with Unna in regarding the late relapses of syphilis—or to use the ordinary terminology, the tertiary lesions—as newly developing remains of old syphilitic products persisting from the years of the secondary or even of the primary stage. This view, which, in its essentials, has already been expressed by me,[6] is, strictly speaking, true only for relapses *in situ*. In the formation of relapses of the other category, the metastatic variety, probably the remains of the early syphilitic products also furnish the carriers of the syphilitic germ, but these must first effect an entry into the lymph or blood circulation, and must possess a degree of virulence which renders them capable of producing a new lesion when present in sufficient numbers on suitable soil.

The following considerations show that the germs of the metastatic relapse are formed rather by the remains of the early syphilitic lesions persisting for years, than by a circulating syphilitic poison continuously present in the blood or tissue juices. If there were continuously present in the blood syphilis germs in such quantity and of sufficient virulence to be able to produce syphilitic lesions in any portion of the organism, then some syphilitic manifestation would have to be present in the body at all times. This, however, is not true as has been shown by the most careful observations. Virchow, himself, has said[7] that "the conception of a chronic dyscrasia by no means involves the necessity that the blood at all times contains disease products; on the contrary periods of infection and periods of freedom from this (in the blood) may alternate with each other." I should not like to affirm that in the latent periods, even after the first two years following infection, the blood stream is absolutely free from syphilis germs, but I assume that during the period of latency any germs that may be circulating in the blood stream are not capable of evoking a lesion in the body *itself*, either through quantitative or qualitative weakness or both of these together. When I say in the body *itself*, I do this in view of the frequently observed fact that a pregnant woman with latent syphilis who does not exhibit any symptoms of the disease during her pregnancy brings forth syphilitic offspring. This fact that from the blood stream of the mother with latent syphilis, germs which have passed into the fetus may produce severe lesions although they do not give rise to any manifestations in the body of the former; the fact that individuals with latent syphilis who do not display any symptoms may transmit syphilis through an inconspicuous fissure by contact, causing a typical chancre to develop; that, therefore, germs which in the first organism were unable to produce a lesion evoke typical changes in the second, among other things lead to the conclusion that in the tissues themselves certain conditions must exist in order to cause a syphilitic lesion to be developed. This is what is ordinarily called "a predisposed or suitable soil" also "*locus minoris resistentiæ*, lessened resistance," but this is only an excuse for our defective knowledge. The conditions which control the localization of the metastases in a single organ or portion of an organ are still unknown—which, by the way, is also the case in other infectious diseases. I have mentioned these facts because they serve as sign posts in the darkness of the origin and the localization of the scanty and isolated appearance of the metastatic, late relapses of syphilis. As I have already expressed my opinion concerning the value of deductions from analogy, and have therefore protected myself against the accusation of regarding these as adequate proofs, I observe that if we keep in mind for example the route which the syphilis germs must travel in their passage from the organism of the mother into that of the fetus we shall come to the conclusion that there is justification for the view that syphilis germs which have entered the blood stream from some residual focus are capable of traveling long distances in the body. In this way the first condition of the production of metastatic relapses of syphilis is shown to be a possible and real occurrence; furthermore these facts indicate that the small amount of the syphilis germs which pass into the blood from the residual foci is probably the chief cause of the scanty and isolated appearance of metastatic, late relapses; but it is not the only cause, for, as has been stated above, in the case of an infection produced by a small fissure on the lip of an individual with latent syphilis the number of syphilis germs transmitted—which still is able to produce a chancre at the place of contact—is very small, while the much larger number of germs present at the same time in the infecting organism does not give rise to any manifestations. There must, therefore, exist in the tissues themselves certain conditions, and this is the second factor in the explanation of the asymmetry and singleness of late syphilitic relapses.

If, furthermore, we consider the well-known fact that in individuals with latent syphilis a syphilitic lesion is to be produced by inoculation even with highly virulent syphilitic secretion only after the application of considerable irritation—that is the production of suitable conditions in the tissues—it will be apparent that in an organism which has for a long time been the seat of latent syphilis the situations in which the conditions necessary for the development of a syphilitic product exist are few and far between.

Herewith I believe that I have explained as

well as possible and in the briefest form the questions constantly arising in the nosology of the relapse of syphilis, especially in late syphilis. The evidence furnished by the histologically demonstrated cell-rests as persisting signs of healed syphilitic lesions has been recognized by the majority of authors. Only isolated writers deny this testimony, such for example as Caspary,[8] who, in discussing persisting signs of hereditary syphilis, has stated that my teaching required corroboration. In opposition to this, Galewsky, Rille, and Meissener have brought forward further proofs in favor of my explanation of the relapse in syphilis. Galewsky has laid stress on the development of late manifestations in old scars, particularly at the site of the chancre, as has now been universally recognized. Meissener points out that in syphilitic infection shortly after the appearance of the primary lesion, before the development of the roseola, the vessels in cutaneous areas far distant from the chancre already show changes which disappear again after antiluetic treatment. It is true that Jadassohn considers that the assumption of residua is not necessary in the explanation of local relapses, believing that the well-known facts of provocation suffice in this respect, and says that scars also are more easily affected by irritation and may give rise directly to the provocation. Jadassohn has often found collections of cells in old scars, but affirms that ordinarily we have no criterion for the cell infiltrations occurring in normal skin.

This question is closely associated with that of the duration of the infective stage in syphilis, a topic which was discussed at length in the Third International Dermatological Congress in London in 1896. Hutchinson believes that it has been proven that, during the primary and secondary stages the blood and all other secretions contain the syphilitic virus and that transmission to other persons is possible. He considers that after two years have elapsed the syphilitic poison has disappeared from the tissues and fluids of infected individuals, and the danger of transmission is over. He permits patients to marry two years after the appearance of the chancre, and usually does not pay much attention to moderate relapses appearing after this time (!). Hutchinson mistrusts in general the reports to the effect that a man has transmitted syphilis to his wife ten or even more years after infection. The period of hereditary transmissibility appears to be longer in women than in men, and the ability to transmit infection also appears to persist longer in women. He also believes that hereditary or general transmission during the tertiary period, excepting in extremely rare cases, is out of the question. This view of Hutchinson's must now be regarded as incorrect. The same author considers that mercury attacks the syphilitic virus directly and destroys it, and that secondary symptoms appear when the administration of the drug is interrupted. Campame calculates the period of infectivity of a syphilitic individual as three years. Lassar[9] is of the opinion that the question of contagion has not been sharply enough differentiated from that of infection. Contagiousness in syphilis may be lost without effect on the infectiousness, although the reverse is hardly likely. From a single papule an indefinite number of infiltrations may result, which probably can be explained only on the assumption of permanence of infectiousness. In view of the different forms of the disease it is almost impossible to determine in what stage a given patient may be. There is much in favor of the view that infectiousness lasts throughout the entire course of the disease, although on the other hand it cannot be denied that the danger of contagion decreases as the disease progreses. Several observations made by Lessar prove that syphilis may remain contagious even in very late stages; for example, transmission being reported ten, twelve, fifteen, or sixteen years after infection. The problem of the capacity for infection in syphilis has not yet been solved. Feulard has stated that he does not counsel marriage to a syphilitic before the expiration of the fourth year, and that in rare instances hereditary transmission has occurred ten years after infection. Tarnowsky was able in a series of 1,000 syphilitic patients to demonstrate typical specific symptoms in 802 during the first five years after infection, in 176 after the first five years, in 26 after ten years, and in 5 after fifteen years. A syphilitic individual can therefore transmit the disease fifteen years after infection. Blaschko has observed a case in which a husband infected his wife five and a half years after acquiring a chancre.

These observations accordingly appear undubitably to explain the occurrence of relapses. The proliferated cells are, however, to be regarded only as the carriers of the virus and not as the virus itself. Through the discovery of *Spirochæta pallida* by Schaudinn the entire question has received a positive basis, and it will not be difficult in future to extend ther esearches that heretofore have been devoted to pathological products, to the study of the spirochetes. In this way the hopeful prospect is afforded that in the future one of the most important questions—that of the nature of the relapse—may be solved.

Conclusions. (1) The late syphilitic relapses, the relapse *in situ* as well as the metastatic relapse, have their origin in the microscopically demonstrable syphilitic products, including the syphilitic lymph glands, which persist after the disappearance of the clinical manifestations. These may exist a very long time, even more than a decade.

(2) The complete elimination from the organism of all the germs of the disease as promptly as possible therefore follows as a fundamental indication in the treatment of syphilis.

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Trachoma and Its Treatment. — Cornelius Williams declares that trachoma flourishes in any place in which there is crowding and lack of cleanliness. He condemns the application of crystal of copper sulphate in the treatment of this affection, preferring the silver nitrate method, since it has given better results in his experience than any other remedy. He believes it advisable to suspend the use of the silver salt now and then, substituting for it a very weak solution of iodine in saline solution, with the addition of iodide of potassium.—*St. Paul Medical Journal.*

HEPATIC INSUFFICIENCY

ITS CAUSES, RECOGNITION, SIGNIFICANCE, AND TREATMENT.

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Whenever an organ fails to perform its functions properly we say that it is insufficient. This term may denote both qualitative and quantitative variations from the normal. The more complicated and the more active the functions of an organ the more liable it is to insufficiency. The liver, therefore, possessing as it does the most manifold functions of any organ of tne body, is particularly subject to functional derangements. Its exposed situation, moreover, and the peculiar arrangement of the four systems of capillaries that form an intricate labyrinth around and through each hepatic cell render the latter especially liable to injury by circulating toxins. These poisons reach the liver cells continuously from the general circulation in the hepatic artery, through the lymphatic circulation (especially from the peritoneum), the portal circulation and the bile channels.

Causes.—One may differentiate for clinical purposes between mechanical, parasitic, and toxic causes of hepatic insufficiency, remembering always that the three may be and usually are correlated and intimately connected.

Chief among the *mechanical causes* are all sclerotic changes causing overgrowth or contraction of interstitial liver tissues and thereby producing mechanical compression of liver cells or of their afferent blood-vessels. Then there is mechanical stenosis, occlusion or obliteration of large blood-vessels by embolism, thrombosis, or pressure from without, causing similar nutritional changes, and later, necrosis of large areas of liver cells. Again, the bile ducts of the liver may become similarly narrowed or occluded by biliary concretions or by the invasion of these channels from without by parasites and in either instance producing stagnation of bile and mechanical compression of liver cells or of the blood-vessels that nourish them. Finally, certain heart lesions must be included among the mechanical causes, for, by producing stasis of venous blood in the capillaries of the liver, they too exercise mechanical compression upon the hepatic cells and cause derangement of their function.

As has been intimated, the *parasitic causes* of hepatic insufficiency occupy an intermediary position between mechanical and toxic causes, for any microorganism that invades the liver channels or the liver tissues proper may act either as a foreign body by mechanically destroying liver cells by pressure or by occluding the blood-vessels or bile channels, or it may lead to the formation of chemical poisons that intoxicate the liver cells.

The *toxins*, finally, that can produce hepatic insufficiency are so manifold that it would be useless to attempt to enumerate them in this place. It is sufficient to say that all the poisons generated in the bowel, the spleen, or the pancreas must travel first to the liver before they can reach the general circulation beyond; that all the manifold array of metabolic poisons that can be formed in the system at large always come into particularly intimate contact with the liver cells owing to the intricate interlacing of the capillaries of the hepatic artery and the hepatic lymph-channels in the liver. Finally, the liver, possessing as it does a most active metabolism of its own, continually manufactures toxic intermediary bodies within its substance; and this is particularly the case if its function is in any way derang d.

Symptoms.—The changes that the liver may undergo as a result of all these causes may vary from mild transitory functional derangements to destructive histological lesions of the hepatic cells. The symptoms of hepatic insufficiency are, therefore, very numerous. This is self-evident when we consider the many functions of the liver, any one of which may become qualitatively or quantitatively perverted. Our knowledge of the finer mechanism of the intermediary metabolism going on within the liver is, however, still so woefully incomplete that it is unfortunately well nigh impossible to interpret slight derangements of many of these functions correctly. For this reason we are as yet unable to recognize as early as we might wish the first manifestations of hepatic insufficiency, as we can, for instance, recognize early functional changes of the kidneys in the urine, or mild derangements of the stomach function in the gastric contents long before anatomical lesions supervene. From the standpoint of prophylaxis and therapy this is particularly deplorable.

In order to understand the symptomatology of hepatic insufficiency it is necessary to have a clear understanding of liver physiology, because it is manifestly impossible to understand the pathology of any group of functions unless we understand their physiology, to appreciate or correct the abnormal until we understand the normal.

The normal function of the liver may be summarized under the following five heads: (1) formation of urea, (2) conversion of sugar into glycogen and the storage of the latter, (3) formation of bile, (4) elaboration both by anabolism and catabolism of circulating radicals of the fats and albumen, (5) general disintoxication of circulating poisons and the formation of antitoxic bodies. Perversion of these five mentioned functions must lead to the following results:

(1) A diminution of the circulating urea and a flooding of the blood-stream with bodies that have failed to undergo conversion into urea in the liver, notably ammonia salts and amido-acids, with the appearance of corresponding urinary symptoms, *i. e.* a decrease of the urinary urea and a corresponding increase of the urinary ammonia and amido-acids.* At the same time, as urea is the most potent physiologic diuretic, a decrease in the amount of urine.

(2) Owing to the inability of the liver to convert sugar into glycogen and to store the latter, a flooding of the blood-stream with an excess of sugar that is derived from the ingested sugar or starches, with resulting hyperglycemia and glycosuria. This condition may be obscured if the patient does not happen to have eaten much starch or sweet foods, but it should readily appear, even in mild degrees of hepatic insufficiency, as an *alimentary glycosuria* if the patient is given appreciable quantities of starch or sugar in the food.

(3) The inability of the liver to form bile leads to numerous serious consequences that have already been indicated above. Chief among these is stasis of bile with the biliary channels and as a result diapedesis of poisonous bile constituents from the bile-capillaries into the blood-capillaries, in other words icterus. In this connection a very important point should be mentioned, viz., that jaundice occurs only in relatively mild degrees of hepatic insufficiency, whereas in very severe degrees jaun-

*See also "An Analytic Study of Uremia"—*Journal of the American Medical Association*, January 6, 1906.

dice can not possibly occur for the reason that the liver cells no longer form bile. Here the intoxication is especially severe because the products that should normally be disintoxicated by the liver and excreted into the bile pass through the liver cells unchanged and are returned to the circulation in a highly toxic form. This condition has been called by the French *grande insuffisance hepatique*. Another result of failure of the liver cells to produce a normal amount and the normal kind of bile is interference with the function of the upper portion of the intestinal tract. The withdrawal of the bile or the entrance of abnormal bile into the bowel allows intestinal fermentation to go on unchecked, renders the normal emulsification of fats impossible, and produces numerous other results that have been enumerated above. At all events the withdrawal of normal bile from the bowel in itself causes an increased flow of toxic bodies to pour into the liver through the portal vein and the intestinal lymphatics, and hence promotes the causes that produce hepatic insufficiency. The derangement of the bile-forming function therefore produces a vicious circle that is highly dangerous.

In the urine this condition usually becomes manifest by an increase *of the aromatic sulphates*, notably *indican* and the appearance of *urobilin bile pigments*, and *bile acids*.

(4) Failure of the liver to perform properly its share in the metabolism of the albumin and fats causes fragments of the latter to be returned to the circulation, either unchanged or disassimilated into abnormal products. This, too, produces a general intoxication and may, in its ultimate consequences, lead to a syndrome that is not distinguishable from uremia, that is, moreover (as I have attempted to show recently), in all probability *uremia* (Croftan 1. c.). Here the urine contains abundant *ammonia salts*, relatively *small quantities* of *urea* and usually an abnormal amount of *fatty acids* possibly of *leucin* and *tyrosin*.

(5) The loss or reduction of the normal disintoxicating power of the liver finally is the most serious result of hepatic insufficiency and usually constitutes a terminal stage of the affection. Here the portals are thrown wide open to the invasion of the body with poisons of a thousand kinds that are formed in the bowel and in the tissues at large. That the organism cannot long withstand this toxic flood is self evident. In such cases that *toxicity of the urine* will be found to be enormously *increased* while, at the same time, the kidneys invariably became affected, for, upon them is now thrown the task of ridding the body of circulating poisons, a function that normally they shared with the liver. When renal insufficiency complicates hepatic insufficiency a severe toxemia must develop in very short order, and again a fulminating syndrome is presented that closely simulates uremia.

Treatment.—The treatment of hepatic insufficiency may be considered under two headings: (1) The suppression of its causes. (2) The symptomatic treatment of its manifestations.

Causal treatment is in most instances synonymous with prophylaxis. Three factors, as I have mentioned above, chiefly determine insufficiency of the liver cells, *i. e.* infection, intoxication mechanical causes.

The latter, unless we are dealing with some lesion that mechanically compresses a common duct and that can be removed surgically, is not amenable to treatment so that in this instance we are limited to symptomatic therapy. There is an exception to this rule, *i. e.* syphilis. Here we may be dealing with a gumma located in such a way that it produces compression of a large bile duct or of an important blood-vessel, or we may be dealing with a syphilitic interstitial hepatitis. In both of these instances anti-syphilitic treatment may remove the cause, mechanical though it be. To an extent this also applies to what may be called mechanical hepatic insufficiency due to venous stasis in the liver following heart lesions. Here cardiotonic treatment may cause the symptoms of hepatic insufficiency to disappear.

In the case of the intoxicating factors the source of poison is in the overwhelming majority of cases the gastrointestinal tract. Here causal treatment should be carried out according to the following principles: To regulate the diet in such a way as to limit the ingestion of substances that are in themselves poisonous or that undergo changes in the bowel that lead to the formation of poisonous bodies; to reduce to the lowest possible minimum intestinal putrefaction; to prevent as far as possible the absorption of whatever poisonous bodies may have gained entrance to the bowel or may have been formed there; to promote the destruction of the latter in case they enter the circulation, and above all to hasten the rapid elimination of circulating toxins. The latter indication prevails with equal force in the case of poisons that are not formed within the bowel, but that are generated within the tissues of the body (endogenous poisons) as in infectious diseases and in a variety of metabolic disorders.

Under the head of causal treatment all those measures might also be included that we know are capable of stimulating the hepatic cells to renewed activity when their energies begin to flag, but this treatment must be carried out with conservatism, as I will have occasion to show further on.

Symptomatic treatment includes the treatment of the protean array or sequelæ of hepatic insufficiency. As derangement of the liver function in its ultimate consequences may lead to the greatest variety of psychic, nervous, cardiovascular, renal, and metabolic disorders, symptomatic treatment of hepatic insufficiency in the broader sense covers a large field of therapy. I had occasion to show in a recent article that intestinal putrefaction, by producing hepatic insufficiency may be considered one of the main causes of a great variety of chronic diseases involving almost every tissue and organ of the body. This trite statement has been preached by medical investigators since time immemorial. Such words as hypochondriasis and melancholia, meaning as they do etymologically "under the ribs" and "the black bile flow," and introduced into medicine by the physicians of ancient times, indicate clearly how well these old doctors recognized the important rôle of the liver in the production of psychic phenomena, and nowadays we know that autointoxication from the bowel chiefly by deranging the liver function can exercise a most profound influence upon the kidneys, the heart and arteries, the general metabolism, and the nervous system. I will limit myself in this place to a brief discussion of the dietetic treatment, the use of certain physical means and the use of certain remedies, including organotherapeutic measures, that can meet the indications formulated in a general way above.

Dietetic Treatment.—Probably the most important dietetic rule in the treatment of hepatic insufficiency is a negative one, *i. e.* that all alcoholic beverages should be rigidly excluded from the diet. There is much exaggerated prejudice

in the minds of physicians and the laity in regard to the dangers of alcohol in most diseases. Alcohol constitutes a very valuable remedy, and, in a sense, a food. But we do not realize sufficiently that pure ethyl alcohol is the least toxic of all the alcohols that are used in the food of man. The higher alcohols and certain aldehydes and essential oils that are found in cheap liquors and that bestow the aroma or bouquet upon the various wines, liquors, and cordials are much more poisonous even in the small quantities in which they are used; thus *e. g.* absinthe contains some eleven different principles all of which are poisonous. Alcohol itself, therefore, unless taken in enormous quantities is not so terribly dangerous, but no one drinks pure dilute alcohol but rather alcoholic beverages of various kinds and as the latter are poisonous on account of the impurities they contain, it should be a cardinal rule in the treatment of hepatic insufficiency to exclude them rigidly from the diet.

On the same grounds spices and condiments should always be excluded because they contain essences of alkaloids that are toxic to the liver.

A second cardinal rule is to limit the ingestion of fats, for they are very poorly digested owing to the deficiency of bile acids from the bowel; it is clear that in this case, as stated above, they are not properly saponified and emulsified, undergo rapid decomposition in the bowel, and in this way lead to the formation of acid and acrid products that are highly irritating to the liver and the bowel. It has been shown that in cases of hepatic insufficiency the urinary toxicity increases greatly when much fat is given. While it is not necessary, therefore, to exclude the fats altogether from the diet, they should be reduced to a minimum.

Meat and eggs should also be reduced, for they furnish the bulk of the most toxic intestinal products whenever intestinal putrefaction goes on unchecked and this we know to be the case when the bile is deficient or its composition is changed.

There remain, therefore, as chief articles of food, vegetables and carbohydrates; the latter, in particular, are not toxic nor do they lead to the formation of toxic bodies in the bowel; and besides, sugar, as we know, stimulates the liver functions to activity. Of course, care should always be exercised not to administer a diet containing too large a proportion of carbohydrate food for otherwise fermentative dyspepsia, constipation, and a variety of digestive disorders may supervene. One should simply increase the amount of carbohydrate food to replace the deficit of fat. Milk can always be given with impunity. An exclusive milk diet, however, is for many reasons objectionable.* To summarize, the patient should be placed upon a bland mixed diet, containing no alcoholic beverages, a minimum of fat, a small amount of albuminous food, and plenty of fresh fruits, vegetables, milk, cereals, starches, and, with care, sweets. That the details of this diet should be regulated in such a way as to consider individual idiosyncrasies and tastes, and above all complication in other organs, notably the kidneys, need hardly be emphasized.

Medicinal Treatment.—In view of the fact that the chief source of the poisons that intoxicate the liver and produce hepatic insufficiency is the intestinal tract, it is of paramount importance to attempt *intestinal antisepsis* in every case of hepatic insufficiency that comes under observation. This is especially necessary early in the disease before the liver cells have undergone anatomic changes. It is impossible within the narrow frame of this article to discuss the means at our disposal for promoting intestinal antisepsis. We are unable, of course, to render the long intestinal tract completely sterile, nor is this desirable for many of the saphrophytes that abound in the normal bowel contents play an important rôle in disassimilating the food elements. In this way they undoubtedly aid the normal digestive ferments in degrading complicated bodies into simpler assimilable substances, moreover, they produce by gas formation or liquefaction certain physical changes in the bowel contents that favor normal peristalsis and the act of defecation. All that we can attempt to do is to hold in check the pullulation of virulent and putrefactive bacteria, and this object, I believe, can be accomplished by a number of remedies.

That the absorption of bowel poisons after they have once been formed can be restricted by the use of evacuants is clear. A saline laxative given at frequent intervals, combined possibly with enemas to clean out the lower bowel, is a useful measure. Purgatives or drastics that can irritate the liver should be used cautiously.

All attempts that have so far been made to promote the destruction of poisons after they have once been absorbed have been abortive. A. Robin, as is well known, introduced a so-called oxidizing treatment and advised the inhalation of oxygen, the use of iron and manganese preparations. I have never seen any tangible good results follow this treatment. Cold hydrotherapeutic measures, thanks to the leucocytosis, the increased metabolism, and the better circulation of lymph they produce, are of much use.

The elimination of absorbed poisons by the various emunctories of the body is always indicated. Here elimination by catharsis and diaphoresis, preferably brought about by hydriatic measures has a useful place. To attempt elimination by forced diuresis is, however, dangerous, as the toxins that are forced through the kidneys are bound to irritate them, and injury to the kidneys should of all things be avoided.

The last and the most important task is to attempt to restore the function of the destroyed hepatic cells. Here the same principles must obtain as in the treatment of any organ that has become fatigued. In very mild cases slight stimulation may at once restore normal tone, in more chronic conditions, however, rest is the prime requisite, for when the affected organ is spared nature soon reestablishes functional equilibrium. We follow this plan exclusively in diseases of the stomach by withdrawing food for a while or by reducing the daily ration. We do it in diseases of the nervous system when we give a rest cure. We do it in diseases of the heart when we put the patient on a mild nonirritating diet and an ice bag over the heart. We are beginning to apply the same plan in diseases of the kidneys, and it certainly has a grateful field of application in the case of the liver.

Following a period of rest, what might be termed gentle exercise of the organ may be instituted either by throwing upon the liver tasks that it should normally be able to fulfill or by gently stimulating it with remedies or physical measures that we know can fulfill this purpose. Active stimulation with powerful remedies should be reserved as an emergency measure in extreme cases, for nothing will produce complete functional inadequacy of an organ that is functionally impaired so rapidly as over-stimulation in the beginning.

For the purpose of stimulating the function of the liver we can have recourse in the first place to certain hydrotherapeutic measures. It has

*See Croftan. "The dangers of an exclusive milk diet, etc."—*Medicine.*

been established by careful studies that general hot baths or the short application of cold locally over the liver, preferably in the form of a stream of cold water directed for a minute or two against the hepatic region, will energetically stimulate *the flow of bile*. The same result can be obtained by the application of a so-called Priessnitz compress over the liver region. A towel is wrung out of cold water and laid over the liver and covered with a flannel. Many remedies are said to stimulate *the formation of bile*. Unfortunately, most so-called cholagogues do not possess this power at all, but simply irritate the stomach, the intestine, and the liver. Best of all are the salicylic preparations and the bile acids.* Preference should be given to the latter remedy because the salicylates are undoubtedly irritating to the kidneys. The stimulation *of the glycogenic function* of the liver can be brought about by an active alkali therapy. Antipyrin, too, possesses this power. Best of all, however, are the starchy and sweet foods, and as these are already properly included in the diet, as mentioned above, it really seems unnecessary to give any medicine for this particular purpose.

We know of no remedy that can stimulate *the urea-forming function* of the liver. The administration of abundant albuminous food constitutes a physiological stimulant to this function, and, if sufficient care is exercised that the bowel is kept aseptic, there is no reason why plenty of albumen should not be given for this purpose, especially in mild stages of the disease. Some writers have advised the use of urea, itself, claiming that a certain amount of urea is necessary, especially in order to promote diuresis, and that where its formation is deficient it should be supplied. This plan does not appeal to me, and, despite the various favorable reports on this therapy I have never been able to convince myself of its value.

In conclusion, a word in regard to the use of *liver extracts* in this disease. A number of French authors, chief among them Gilbert and Carnot, have published very enthusiastic reports in regard to the amelioration following the use of powdered calf's liver or pork liver given suspended in milk or water by enemata or even subcutaneously. Symptomatically I have seen some good results from the ingestion of liver extract in cases of cirrhosis of the liver with hepatic insufficiency, especially in the direction of an increased urea excretion, an increased tolerance for carbohydrates, and an apparent improvement in some of the nervous manifestations. That the administration of liver extract stimulates the regeneration of liver cells, that is, produce a vicarious hypertrophy of those portions of the liver that are not affected, is hard to prove.

Finally, something may be said in regard to the *danger of operative interference* in cases of hepatic insufficiency. There is in most of these cases a tendency to hemorrhage due, possibly, to the circulation in excess of bile acids; for the latter have a distinct hemolytic power and interfere with the coagulability of the blood. Besides, the administration of chloroform is a very dangerous procedure in any case, even of mild hepatic insufficiency, for, in predisposed subjects who, we must assume, possess an idiosyncrasy against chloroform, a condition may develop which closely simulates acute yellow atrophy of the liver, both chemically and anatomically.† I think it is just as important for this reason that surgeons should, as far as possible, examine the functional state of the liver before an operation as they do, or should, study the condition of the kidneys. If any of the evidences of hepatic insufficiency that have been enumerated above should be present, then chloroform at all events should not be administered as an anesthetic and the possibility of profuse capillary hemorrhage be remembered. If it were not for this difficulty of operating upon cases of hepatic insufficiency the so-called Talma operation might prove of value, relieving the liver of much work and aiding it to regain its normal powers.

100 State Street.

*See Croftan: "The Bile Acids as a Remedy."—*New York Medical Journal.*

†For literature on this subject and an interesting case report, see a recent article by Bevan and Favill.—*Journal American Medical Association.*

THE OFFICE TREATMENT OF ANAL FISSURE.*

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Anal fissure is a common, persistent and most distressing affliction and is very frequently improperly diagnosed and treated. Fissure in ano may be defined as an elongated rent, or ulcer of the anal mucosa at its juncture with the skin, characterized by tearing, or dull, radiating pain and prolonged contraction of the anal sphincter. True fissure is invariably accompanied by severe and frequent sphincteralgia and must not be confused with superficial cracks in the skin or mucosa unaccompanied by sphincteric spasm. Fissure in ano is one of the most frequent of all affections encountered about the anus in the well to do; occurs more frequently in men than in women; and may be met with in both adults and children. These lesions are parallel with the long axis of the gut, are nearly always single, are usually located at the posterior anal commissure, vary from one to three-fourths of an inch in length and may extend partially or completely through the mucosa. In the latter case, the sphincter muscle can be seen crossing the rent at a right angle.

There are two types of fissure in ano from an etiologic standpoint. The first type is caused by injuries, such as tearing of the mucosa by foreign bodies or the passage of scybala, or the rent or ulcer may be the remains of an improperly treated sore or wound, or the result of over stretching of the anus with the fingers, anal dilators, or other mechanical instruments devised for divulsing the sphincter. The second type, first described by Ball, is produced by the detachment of a semilunar valve. Subsequent passages extend the injury, since each action causes the torn piece of mucosa and valve to be dragged further downward, separating it from the musculature beneath, in a manner similar in many respects to the formation of a hang nail on the finger. Eventually the rent extends to the skin and the mucosa becomes edematous and the skin inflamed and swollen, forming the typical sentinel pile, in the center of which is to be found the fissure (Fig. 1), the rent being easily exposed by separating the margins of the anus. With the exception of this so-called sentinel pile, the characteristics of both types of fissure are the same.

Symptoms and Characteristics.—In a recent fissure the edges are clear cut, it is not sensitive, bleeds frequently, there is slight, if any sphincteralgia and but little pain, which is of a tearing or burning character and subsides shortly after defecation. Chronic

*Read before the South Essex District Medical Society, Lynn, Mass., February 20, 1906.

or true fissure presents quite another picture, the anus is tight and drawn upward, efforts to examine the rent cause spasm of the sphincter and sharp pain and when it is exposed the ulcer will be found to be exceedingly sensitive and the edges inflamed, thickened and rounded. In neglected cases, the patient experiences sharp, tearing or burning pain at the anus during, and for a short time following stool. The stretching of the fissure during defecation starts up intermittent, spasmodic contractions of the muscle, which induce very sharp pains. In a short time the contraction becomes almost, if not tonic, and the patient forthwith begins to suffer from continuous, dull, agonizing pain in the sacrococcygeal region which may subside in a short time or last for many hours. These pains and the sphincteric spasm are the pathognomonic symptoms of fissure in ano. Patients suffering from fissure often complain of vesical and urinary complications because of the reflected pain and the excitation to spasmodic contraction of the muscles of the rectovesical region. Hemorrhage is never dangerous in fissure cases, the bleeding begins during defecation and the blood may be noticed as a streak upon the feces or in larger amounts on the toilet paper. The discharge

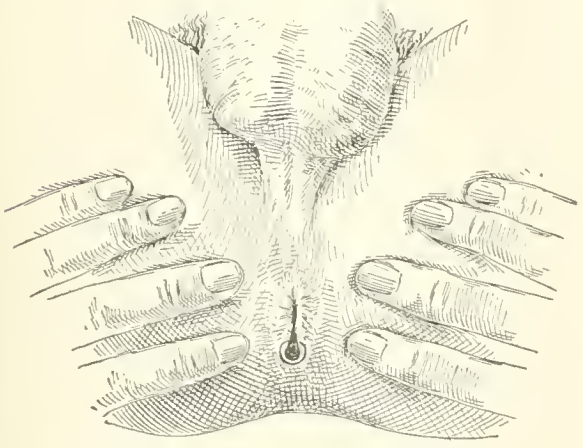

Fig. 1.—Showing fissure and sentinel pile.

from a painful ulcer or fissure is not abundant, but is sufficient to keep the mucosa and skin about the anus constantly irritated, causing a persistent and annoying pruritis. Constipation is always a symptom of fissure, due largely to the fact that defecation causes great suffering and the patient defers going to stool as long as possible. Persons suffering from this complaint are usually extremely nervous and not infrequently melancholic owing to the great pain, loss of sleep and, in many cases, to the difficulty experienced in obtaining permanent relief.

Diagnosis.—Fissure in ano is often mistaken for other anal affections and vice versa; this is unnecessary, however, and rarely occurs in the practice of surgeons who have a routine method of examining the anal canal. In suspected cases, the fissure can be brought into view by carefully separating the margins of the anus (Fig. 1), and, in women, this can be accomplished by inserting the finger into the vagina and everting the anus. If no rent can be located in the above manner, the patient has no fissure and a digital and proctoscopic examination of the rectum should be made to determine the nature of the trouble.

Treatment.—The writer knows of no other ailment more often improperly treated than fissure. A patient is not infrequently tortured for weeks or months by cauterization, divulsion or topical applications by some ignorant practitioner, when the lesion should have been speedily and almost painlessly healed, had it been properly handled. The treatment of fissure is simple, requires but a short time, causes but little suffering and is universally successful when carried out by some one who is capable and bold enough to resort to radical methods, even though the patient pleads for some seemingly less severe procedure. A fissure of recent origin unaccompanied by sphincteralgia can be cured in most instances without recourse to surgical interference. The patient should be placed on a light diet and instructed to take a laxative in order to secure each day one or two semi-solid evacuations. It is not necessary to stop work, but violent and prolonged exercise should be discouraged. The fissure should be wiped out after each stool; this can be effectively done by twisting a piece of cotton on the end of a wooden toothpick and dipping it in some antiseptic solution; the medicated cotton is then pushed up the rectum for about one inch and withdrawn through the fissure. This procedure causes but slight pain and rarely requires to be repeated. After it has been thoroughly cleansed, topical applications of silver nitrate, 10 per cent., ichthyol and glycerin 15 per cent., or balsam of Peru, should be made by means of the toothpick applicator, or citrate of silver or calomel ointment may be applied twice daily. Good results are sometimes to be had from dusting the surface of the fissure with orthoform, or calomel. As a rule, however, the writer prefers the use of liquids to powders, for the reason that the latter sometimes cake, and cause an annoying pruritis and pain. The applications should be continued until the ulcer has been completely healed and the patient should be warned against allowing the stools to become hardened, until the cicatrices have been firmly formed.

As a general rule a chronic fissure or one which is accompanied by sphincteralgia requires surgical interference in order to effect a permanent cure. Some patients suffering from the affection refuse to have an operation performed at all and others until after non-surgical measures have been tried and failed. In such cases the diet should be regulated, a laxative should be prescribed and the fissure cleansed in the manner already described. In the true, or deep fissure, drainage is not so good as in the superficial variety because of the depth of the rent and the contraction of the sphincter. For this reason it is essential that the topical applications should be made upon gauze and allowed to remain *in situ* until the patient has an action, since the gauze will absorb the discharge. The favorite remedies of the writer to be applied by means of gauze in the treatment of true fissure, are nitrate of silver 20 per cent., ichthyol 50 per cent., and balsam of Peru full strength. These stronger agents are used for the first few applications only, and are followed by the milder solutions and ointments referred to in the treatment of superficial fissures. The pain caused by topical applications can be minimized by aplying a 10 per cent. solution of eucaine or cocaine before they are used. Caustics, such as stick silver, copper sulphate and like agents, should not be used in these cases, because they induce the most intense pain and sphincteralgia which may continue for hours after the application. When cauterization is resorted to it should be done by means of the galvanocautery after the fissure has been anesthetized by the injection into its base of a sufficient quantity of sterile water, or weak solution of eucaine. It can then be thoroughly burnt without causing any suffering.

Surgical Treatment.—uSrgical procedure should be employed whenever possible, because it is the quickest and most satisfactory method of treatment, for the reasons that a cure can always be effected, and with a minimum amount of suffering. Under the old regime, patients often refused surgical interference in these cases, and justly so, because it was the custom of surgeons generally, to send these sufferers to the hospital, require them to take a general anesthetic, and remain in bed from one to three weeks. This practice of giving ether or chloroform to this class of patients and detaining them in the hospital for a considerable length of time is unnecessary and should be strongly condemned, because a radical cure can be effected in the office or at the home of the patient, by means of a local anesthetic, thereby avoiding the danger of general anesthesia and long delay from business or social duties. It has been the custom of the writer for a number of years to operate upon all fissures by means of local anesthesia. He has demonstrated in hundreds of cases that the various surgical procedures suggested for the relief of this ailment, viz.: incising the sphincter, divulsion and excision of the fissure, can be successfully, quickly, and painlessly done by means of local anesthetics.

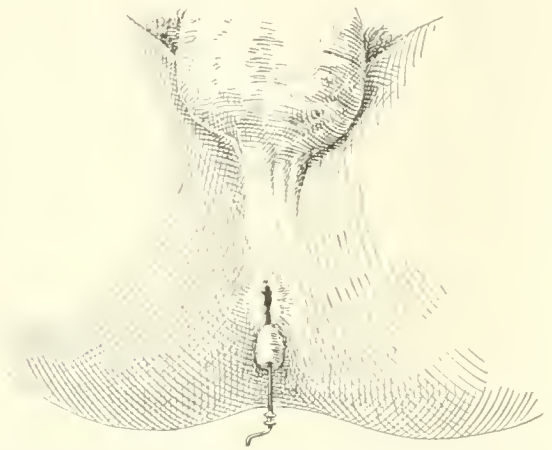

FIG. 2.—Showing swelling and blanching of the tissues caused by the solution, and also needle and Gant curved extension piece used in making the injection.

Incision.—It has been conceded by proctologists for a great many years that a fissure does not heal, because the wound seldom remains quiescent on account of the spasm of the sphincter beneath it. To overcome the undue activity of the muscle, the operation of divulsion was devised with the object of sufficiently stretching the sphincter to induce temporary inactivity at the anus and thereby give the wound an opportunity to heal. While this procedure was a great step in advance over the older methods of treatment, it has not proven entirely satisfactory and will, in the writer's opinion, soon give way entirely to the incision operation. Many cases can unquestionably be cured by means of divulsion and topical applications, but on the contrary, many others will not be so fortunate, because the muscle regains its activity before the wound has healed. Incision or division of the sphincter is unquestionably the operation of choice. When properly performed and the after treatment carefully carried out, a permanent cure will be quickly and almost painlessly effected in every case. Some operators advise a partial division of the external sphincter, but in the experience of the writer it has not been satisfactory, because it is extremely difficult, owing to the thinness of the muscle, to limit the cut and further because when it is only partially severed it does not always insure the desired rest that invariably follows the complete operation. The old operation consists in administering a general anesthetic, inserting a sharp pointed curved bistoury into the rectum, when it is withdrawn, severing the external sphincter. This operation should be discarded for the reasons that a general anesthetic is given and further, because a cure is not infrequently delayed for weeks owing to the difficulty in keeping the cupshaped incision properly drained. The writer has devised a simple operation for the permanent cure of fissure which is invariably successful and which can be performed in five minutes, the only anesthetic required being sterile water or a one-eighth of one per cent. eucaine or cocaine solution. This operation has been performed by him three hundred times without serious accident or complication and in not a single instance has it been followed by unpleasant sequelæ. A cure has been effected in every case and the post-operative pain has been much less than that following the older method. As will be seen in the description of the technic of this procedure, the success of the operation is due entirely to the nature and extent of the cut through the muscle and adjoining structures, which insures complete inactivity of the sphincter, permits perfect drainage of the wound, and the insertion of dressings with but little if any pain.

Technique of the Gant Operation.—The patient, previously prepared, is placed upon a low table in the lithotomy position, or upon his left side with his legs flexed upon the abdomen. The buttocks are held apart by an assistant; the operator then seizes a fold of skin in the median line one inch from and posterior to the anal margin and compresses it between the thumb and forefinger to lessen the pain caused by the puncture. A syringe holding not less than one ounce, filled with sterile water or fitted with a Gant curved extension piece and sharp needle, is filled with sterile water or, preferably, one-eighth of one per cent. eucaine solution. The needle is introduced between the layers of the skin and a sufficient amount of the solution is injected to produce a whitish swelling, which indicates anesthesia at that point. The needle is then inserted further and further until anemia of the skin from the point of entrance up to the anal margin has been produced. It is then directed inward and a sufficient amount of the solution deposited to form a firm, round, whitish tumor about the size of a pigeon egg. The external sphincter and posterior rectal wall for a distance of one and a half inches are now injected and anesthetized in a similar manner, when the operation can be proceeded with painlessly. In producing local anesthesia by this method, it is not necessary to waste time in endeavoring to locate any particular nerve branches, because absolute anesthesia is immediately obtained where a sufficient amount of the solution has been deposited to produce edema, or anemia of the part to be incised. The only instrument used in this operation is a strong pair of scissors having fairly long blades, one of which is sharp and the other probe pointed. The sharp pointed blade is pushed through the skin in the median line, one inch posterior to the anus; at the same time the probe pointed blade is inserted through the anal orifice; the scissors are now pushed upwards for a distance varying from one and a half to two inches, when with one bold cut all the tissues between the blades are severed, making a triangular wound in the posterior median line, two inches in length and one-half inch in depth, which includes the skin, subcutaneous structures,

sphincter muscle, posterior bowel wall and adjacent tissues behind it. Skin tags or piles are now excised and the wound is lightly packed to prevent bleeding; it is then covered by a gauze pad kept in place by means of a well adjusted T-binder. The post-operative treatment following this procedure is most simple and consists in cleansing the wound daily after each stool and inserting a piece of gauze loosely in the cut as a drain and to keep the edges apart. After the first week the gauze is moistened with ichthyol or balsam of Peru to stimulate and increase the healing process. These patients are not confined to their rooms, they are permitted to eat whatever they choose and are advised to secure at least one semisolid action daily in order that the feces may not become hardened and injure the wound then expelled.

Some of the advantages claimed for the Gant operation are as follows: (1) It relieves contraction of the sphincter and sphincteralgia immediately. (2) It effects a cure in every case. (3) It can be performed in from three to five minutes. (4) No general anesthetic is required. (5) It obviates necessity of confinement in a hospital. (6) It is not dangerous or followed by unpleasant sequelæ.

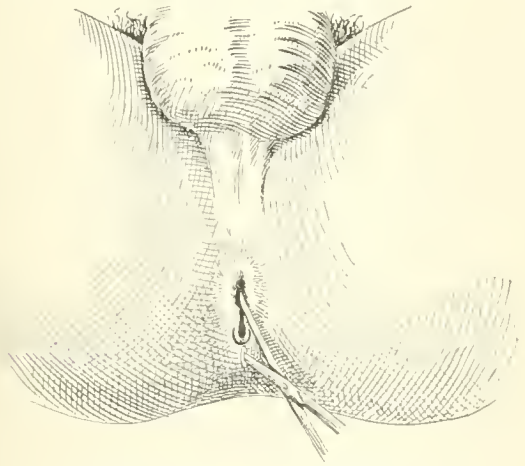

Fig. 3.—Showing scissors in position for dividing the sphincter and adjacent structures in the Gant operation.

(7) The only instruments required are a syringe and pair of scissors. (8) It permits perfect drainage, obviating danger of abscess and fistula, and delay in healing. (9) Owing to the nature of the wound, after dressings can be quickly and almost, if not quite painlessly inserted. (10) It is so simple that it appeals to the common sense of patients who readily submit to it, many of whom would have declined the older method with its many disadvantages.

Divulsion.—Is usually done under general anesthesia, but the writer regards this as unnecessary, since a satisfactory anesthesia can be quickly produced in the office, which permits a thorough stretching of the muscle. The technic in anesthetizing the sphincter is the same as for the incision operation, except that the solution is injected into the muscle and adjacent tissues both at the posterior commissure and sides of the anus. When this has been properly done, the sphincter can be quickly and thoroughly divulsed. The stretching should always be done with the fingers or thumbs and not with large specula, dilators, or other mechanical devices, having no sense of touch and which are apt to do serious injury to the parts before one is aware of it. This procedure has been discarded by the writer in favor of incision operation, for the reasons given above.

Excision.—This operation consists in freshening the edges of the fissure and bringing them together by the aid of catgut sutures, either with or without division of the muscle. Few surgeons resort to this method of treatment, however, because it is more difficult than divulsion or incision and is more dangerous than either, owing to the possibility of infecton.

In concluding his remarks upon the subject of the treatment of fissure in ano, the writer would emphasize the fact that we now have at our command a simple operation for the permanent cure of fissure, which can be quickly, effectively, painlessly and safely performed in the office, or at the patient's home, by means of local anesthesia, thereby obviating the necessity for a general anesthetic and confinement of the patient in a hospital.

43 West Fifty-second Street.

A COMMON FORM OF INSANITY.*

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During the year ending September 30, 1904, 2,426 persons were admitted as patients to the public hospitals for insane in Massachusetts, and to the McLean Hospital at Waverley, who had never before been committed as insane to any hospital. Of these 2,426 cases, 454 (18.7 per cent.) were classified as dementia præcox; 321 (13.1 per cent.) as senile insanity; 276 (11 per cent.) as alcoholic insanity; 257 (10.5 per cent.) as maniac-depressive insanity; 227 (9.6 per cent.) as paresis, or general paralysis of the insane; 133 (5.4 per cent.) as mental deficiency, or imbecility; 91 (3.3 per cent.) as epileptic insanity, and 86 (3.1 per cent.) as organic brain disease.

Each of these types might be called a common form of insanity. But it has seemed best to use the most common type as the subject proper for my paper, some other types being introduced principally for comparison. If it were my purpose to take up type after type of insanity in an effort to help the young graduate to a clearer understanding of the many phases of mental alienation, I could not do better than to begin with that type which he is most likely to meet in general practice. If it happens that the most common form of insanity is that form to which young manhood and young womanhood is most predisposed, this might be an added reasons why we should be keenly alert to recognize the danger signals, and thoroughly posted as to the natural course and probable prognosis of a type of insanity which is preeminently the insanity of youth and adolescence and which is probably responsible for more chronic mental cripples than any three other forms of insanity combined.

As you may infer from this introduction, I have in mind that type of insanity variously known as "pubescent insanity," or "adolescent insanity," or "precocious dementia," or "primary dementia," or "dementia præcox." These terms are generally used in medical literature in a nearly synonymous sense. One author will object to the name pubescent or adolescent insanity because he insists that it is absurd to call a clinical form of mental disease pubescent or adolescent when the patient may be thirty-five years old or older when his mental derangement is first clearly manifest. Others say it is not fitting to apply the term dementia to a

*Read before the Brockton Medical Society, December 4, 1905.

case of mental derangement which may prove curable and in which the most prominent symptoms are hallucinations and delusions, even if the delusions are not of a fixed or systematized type. We must admit the validity of these criticisms. It is true that the outset of precocious dementia is occasionally delayed till the individual is well past thirty. It is also true that there may be times when he does not seem demented at all, even though there be no question about his insanity. Indeed, it is not always easy for those most familiar with mental cases to decide at the first examination whether a patient is suffering from the beginning of a dementing psychosis with a bad prognosis or a mild type of so-called "mania" which we now think of as the exalted phase of "maniac-depressive insanity," in which the prognosis is among the most favorable of all forms of mental disease. Admitting the validity of the objections that may be urged against any of the names in common use, we still recognize the fact that puberity marks the beginning of a decade full of peril to the mental health of any young man or woman handicapped by a strongly neurotic, psycopathic, or intemperate heredity. We must admit also that a large majority of the cases classified as adolescent insanity or primary dementia or dementia præcox do occur during that evolutionary period when the sex organs are ripening and learning, as it were, to functionate, and the reproductive instinct is steadily working that subtle transformation of boyhood and girlhood into manhood and womanhood.

In the study of brain physiology and mental pathology we recognize three epochs that bear an important relation to insanity. These are the periods of puberty and adolescence, the climacteric, more important for women,—and that involutionary period which follows the beginning of senile changes in the brain. We have noted that dementia præcox, —the dementia of adolescence, is, in Massachusetts, the most common of all types of insanity, and that senile insanity ranks next in numbers admitted to our hospitals for the insane. Nomenclature will vary widely according as we follow English, French, or German classification. Indeed, it will vary somewhat widely according to the individual teacher we recognize as most worthy to be followed. But, fortunately, the question of classification is of minor importance. Some well-informed physicians think we had better not attempt divisions and subdivisions of types, which must be more or less artificial. Truly many clinical forms do overlap and verge one into another. The important questions are: Is the individual insane? What is the treatment and what is the prognosis? If it will help the physicians to make a prognosis, or if it makes a difference in his plan of treatment, then, surely, classification is worth while. If we tell the anxious family of a husband and father manifesting the early symptoms of paresis that a few weeks of rest, with a bitter tonic or a trip abroad, will put him right again, we wrong the family and we injure our profession. If we are privileged to watch the case for the next three years, we will learn something about paresis, but the lesson will bring humiliation unless we are very thick skinned. On the other hand, if we hold in mind the hopeless prognosis in general paralysis of the insane, and forget that there is a fairly hopeful type of alcoholic insanity which very closely simulates paresis, then we may suffer loss of prestige because a patient recovers whom we had thought and perhaps declared could not get well.

And so it is in the insanities of adolescence. We learn from the statistics compiled by the State Board of Insanity that 454 cases of dementia præcox were admitted to the hospitals of Massachusetts for the first time during the year ending September 30, 1904. During this period there were sixteen recoveries from this same class of patients. Sixteen is but 3.5 per cent. of 454. Surely we must conclude that the prognosis in this type of adolescent insanity is not very hopeful. But we learn further that fifty-seven cases were discharged much improved and we may fairly expect that some of these have gone on to full recovery at home. If we add the fifty-seven cases much improved, whom we may consider so nearly well as to be capable of self-support, we have a percentage of sixteen capable of self-support from this class of admissions. If we study the question of relapses, we find there were 167 cases of dementia præcox admitted to these same hospitals in Massachusetts during the same year not included in our first count because they had been insane before. Looking a little further, we find ten cases of this class were discharged recovered and nine more much improved. Ten is about six per cent. of 167. Therefore it would seem that the relapsed cases are nearly twice as likely to recover as the cases never before insane. On the face of it, this seems paradoxical, but the key to the seeming paradox may be found in this proposition. The natural course of precocious dementia is a slowly progressive mental weakening without much emotional disturbance or excitement but with foolish and disgusting conduct and absurd ideas about himself and others. Nearly half of these cases improve more or less under favorable conditions to remain mental cripples for life. In a smaller number of cases there is more excitement and less palsy of brain function. Here the symptoms approach the manic-depressive syndrome with a tendency to recover and a tendency to relapse. Here we find an apparent overlapping of two disease forms. Here precocious dementia is impregnated, as it were, with the tendencies of manic-depressive insanity. And so the apparent paradox is reduced to this: Even as one attack of insanity predisposes to another attack, so one recovery points to nutritive and vasomotor disturbances as underlying causes rather than to incurable degeneration of brain tissue. This may sufficiently explain why the percentage of recoveries in relapsed cases of dementia præcox seems to be nearly twice as great as in those cases never before admitted to any hospital for the insane.

If it were true that pubescent and adolescent insanity always means precocious dementia, then the outlook would be dark indeed for any young man or woman attacked by insanity between fifteen and thirty years of age. But, fortunately, such is not the case. A careful survey of the question, we think, justifies this conclusion. Precocious dementia, or dementia præcox, if you prefer the Latin form, is the most common and the most characteristic type of the adolescent insanities. But it may be necessary to differentiate between a whole class of hopeful insanities, due to bacterial and autotoxic agents, to which youth, as well as adult manhood and womanhood is exposed. We have now in mind what is known as the toxic insanities. And the toxic insanities, as Dercum and others have pointed out, are marked above all other insanities by the symptom-complex of delirium, confusion, and stupor. The onset of the toxic insanities are acute as compared with precocious dementia and the element of heredity may be absent or not important. Delirium or confusion or stupor may form the background of the clinical picture and dominate the whole, but

this fact should be kept in mind—that they are closely related states and that delirium comes first in the regular order with mental confusion and stupor as later phases of the toxic type of insanity. Not so many years ago—before we learned the value of the internal and external use of cold water in typhoid fever—toxic insanity, marked by delirium, confusion, and stupor was a very common attendant on that disease. Toxic insanity, however, is not always marked by fever. We make this brief digression to another more hopeful, clinical picture in the interest of a differential diagnosis.

To return again to precocious dementia—New England alienists are now generally pleased to follow the German school of psychiatry which recognizes three clinical forms of precocious dementia, viz., the hebephrenic and the katatonic types, corresponding to the hebephrenia and katatonia of Kahlbaum, and the paranoid type corresponding to the dementia paranoides of Kraepelin.

In the simple dementia of old age, marked mental depression is not common, while an exalted state is very rare indeed. In the dementia of adolescence, moderate depression is a common early symptom, while exaltation and excitement are very frequent symptoms as the case develops.

The younger cases are more apt to follow the hebephrenic course. These are they who seem most demented, manifest least emotional disturbance, and are least likely to be dominated by delusions. Cases somewhat older are more likely to follow the katatonic course. Sometimes silent and depressed, sometimes exalted, loquacious, and incoherent, these cases during the silent periods may sit with rigid muscles resisting passively all efforts to move them, or stand for hours in any place or position in which they may be placed. During the exalted, loquacious periods they may be very entertaining, because of the grotesque delusions of which they talk freely in an amusing way.

The oldest cases are more likely to follow the paranoid course. These are they who are angry, suspicious, and dangerous, because of hallucinations of hearing and sometimes of sight. Their delusions are more apt to be of persecution. A paranoid condition is often used to describe them. They differ from the true paranoiac—the old time monomaniac—in that they have a variety of delusions, which change as the mental degeneration rapidly progresses to a degree of dementia, which is not likely to be reached for many years by the true paranoiac. But in passing to another phase of our subject, I would repeat by way of emphasis, that precocious dementia is almost always an incomplete dementia. Especially is this true of the paranoid type which resembles most true paranoia—the so-called "reasoning insanity."

The very manifest absence of intelligence in the hebephrenic type of precocious dementia, and the grotesque motions, grimaces, and manners with occasional kataleptoid motor symptoms in the katatonic form mark fairly well these two types. The limit of this paper will not admit the report of cases to illustrate the paranoid type.

In five years, according to Dr. T. S. Clouston, 1,800 patients were admitted to the Royal Asylum in Edinburgh, Scotland. Of these, 320, about 18 per cent., were between the age of fourteen and twenty-five Ninety of these, about one-third, had been mentally defective or epileptic from birth, leaving 230, about 12.5 per cent., of all the admissions during that period—in whom it was possible for puberty or adolescence to cause or influence the disease. It is interesting to note that of these 230 cases only one occurred during the fourteenth year and one during the fifteenth year of life. Ten occurred at the age of sixteen and twelve at the age of seventeen. The next three years, the eighteenth, nineteenth, and twentieth, only produced an average of sixteen each year, "while from the twenty-first to the twenty-fifth year the vast majority of cases occurred, viz., 157 of the 230, or an average of thirty-one each year—as compared with an average of eight for each of the first five years of the pubic-adolescent period." Therefore it seems to be true, as Dr. Clouston states, "at fourteen and fifteen the liability to insanity is practically *nil,* and from twenty-one to twenty-five it is very great." This harmonizes well with our own experience.

If this paper should discourage the painstaking treatment of any case of adolescent insanity, it were better had it not been written. If the impression has been made that adolescent insanity is almost hopeless, then the impression is altogether wrong. The truth is that if we exclude iodocy, imbecility and the dementias of epilepsy and infantile paralysis—the insanities occurring between the ages of fourteen and twenty-five are very hopeful.

Recoveries from toxic insanity and manic-depressive insanity in the young range from fifty to seventy-five per cent. as reported by different authorities, although relapses are very common in the latter form.

In regard to treatment, the only safe rule is to consider every case a toxic case or due to some derangement of the physiological functions of the body. "Reflex irritation" has been overworked by certain specialists, each of whom claimed to be able to cure insanity by treating those organs which come within his sphere of influence. But because of the exaggerated claims of some we should not ignore the grain of truth. It is a fact that the central neurons of the neuropath and psychopath are excedingly sensitive to every peripheral stimulus, whether from the eyes, the reproductive organs, or the great internal viscera whose unconscious contributions make up so large a part of organic life Hence it is that to treat insanity most successfully means first of all to treat most skilfully every physical part of the human organism. But there are abnormal mental states seemingly due primarily to morbid thoughts—to worry or prolonged excitement over fancied or really distressing conditions. Here the central neurons suffer first and most, while the abnormalities of peripheral organs may be merely important or unimportant concomitants.

If we can win the full confidence of our patient, the battle for recovery is half won—then will the harassed brain throw off a large part of its load. A brisk purge may be the best of all medicines at first. Every organ whose function is to eliminate must be made to do its best, not forgetting the importance of the skin. If any organ is crippled so it cannot eliminate, then other organs must do double duty. Home environments are often the greatest obstacles. The adolescent who is idle, apathetic, irritable, resistive, and threatening at home commonly falls into line at once among strangers in the routine of a well-ordered hospital.

Next in importance to elimination is oxidation. An excess of outdoor exercise must be insisted on. As well let a freezing man sit still and doze under the stars of a winter's night as to let a morbid adolescent sit and brood over his "lost manhood" or

the coquettish girl who has jilted him for another youth. A robust nurse of good sense and strong will is essential for successful home treatment. For an excited or resistful patient two such nurses are necessary. Hydrotherapeutics and massage are important means to curative ends. Electrotherapeutics is sometimes of value, largely, in my opinion, through its effect on the imagination. Details of treatment, which will vary with each patient, should be left to the individuality of the physician. In regard to food and drink, I should say avoid alcoholic stimulants and advise a generous but non-stimulating diet. Avoid the bromides, hyocine, chloral, opiates, and all narcotic drugs if it is possible. A warm bath or wet pack, with a glass of hot milk and a brisk rub, is a good hypnotic. All hypnotic drugs, in my opinion, are bad, but may be the least of evils in the presence of unbearable pain or continuous excitement when nurses and family are worn out with long watching.

THE PRACTICAL MANAGEMENT OF TYPHOID FEVER.*

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GENTLEMEN: I will omit the customary introductory rhetorical apology for the triteness of the subject of this paper. The subject was your choice, and no apology is necessary, for typhoid fever, like the poor, is always with us, and general practitioners, like the members of the Bronx Society, are more interested in its practical management than in the morphological distinctions which may obtain between the various bacilli which may be extracted from the typhoid intestine for painstaking cultivation in a laboratory. Valuable as the laboratory study of this disease during the past ten years has been, there is some truth in the shrewd intimation of a recent writer that if the same time were spent in studying the patient which is now spent in studying his blood and his secretions and excretions, we might be able to save some of the 50,000 lives lost in this country every year, to say nothing of the 250,000 who recover with systems racked by the disease. If from 1821 to 1859 the mortality in the Massachusetts General Hospital was 12.75 per cent., while from 1859 to 1899 it was 15.5 per cent.,[1] it cannot be said that we are managing this disease any better than were our predecessors, who were ignorant of the bacillus of Eberth, and of the Widal reaction, and of the advantages of a differential leucocyte count. Lest I be misunderstood, however, let me distinctly disavow any intention to underrate the beneficent results of this laboratory knowledge. If Pittsburg can afford to allow her drinking water to remain loaded with typhoid bacilli that her citizens may furnish a death rate of from 124 to 144 per 100,000, while Dresden, in Germany, a city of about the same size, is anxious to remove the bacilli and reduce the death rate to 4 per 100,000,[2] that demonstration alone justifies all the time and study given to the bacillus. It is only my purpose to deplore the fact that, although prophylaxis has made mighty strides by help of the biological knowledge of the disease, treatment of the developed cases has not kept pace with prevention.

What is the reason for this? Are we doing too much, or too little? Or are we doing the wrong things? One of the first things expected from us in private practice is a prescription at the first visit. My personal practice is to write one calling for calomel and soda in a fair-sized dose, to be followed by a saline in six hours if necessary. I prefer one good dose of calomel to the repeated administration of fractional doses, especially for children. My next duty is to write out directions regarding diet, treatment of the discharges, and the bed linen. Everything should be done for the patient, and not by him. A bedpan is the first thing to buy. The two essential aims in the treatment of typhoid fever are to feed the patient and to starve the disease. By feeding the patient is not meant stuffing him, and if the relatives can be convinced that manslaughter is not premeditated by me, I would prefer to give the patient nothing but plenty of water for the first few days. The water may be cold or warm, flavored or unflavored, colored or acidulated. Patients like to have an irrigating bottle with tube and shut-off near the bed, from which they can help themselves when the constant attendance of a nurse is not procurable. Emptying the bowels thoroughly at the outset seems to me to furnish the best condition for arresting the growth of the bacillus, although I am quite well aware that anything like intestinal disinfection during the progress of this disease is a hopeless task. The symptomatic treatment of typhoid by intestinal antisepsis excited a great deal of interest ten years ago, owing to the sturdy claims of the late Dr. Woodbridge. This treatment was tried by me at that time in the wards of Bellevue and the Gouverneur Hospitals[3] without beneficial results. Similar measures have since been advocated by others, especially recently by William Ewart,[4] who uses liquid paraffin as a nonirritating mechanical laxative both for lubrication and for cleansing ,with vegetable charcoal to absorb the toxins, and castor oil daily to secure at least one action of the bowels. Ewart is particular to state, however, that sound principles rather than therapeutic formulæ should guide each case.

After the bowels have been thoroughly moved I direct the use of milk, eggs, and water, as the essential foods during the febrile period. Fruit juices and fruit jellies and a daily cup of strained vegetable soup or broth, flavored with beef or bacon, will supply the patient with the necessary mineral salts and satisfy his longing for something besides milk and albumen water. In cases where milk disagrees, or is not digested, whey may be substituted and is preferred by some writers.[4] In other cases, buttermilk, koumiss, or peptonized milk can be taken by patients. Ice cream makes a diverting change. Alcohol may or may not be required, according to the state of the heart and the toxemia. The average case will not need it until later in the disease. Consommé, either hot or frozen, clam juice, oyster soup, thin barley gruels, the commercial malt foods or peptonoids, clarified honey, cream, and the freshly expressed juice of broiled beefsteak furnish agreeable variants. A cup of hot coffee, well diluted with milk, taken early in the morning is unobjectionable. Natural sleep should not be disturbed for food, but where a patient is stuporous he should be thoroughly aroused before food is given, to diminish the danger of inhalation pneumonia. In spite of the fact that solid food is advised by many during the febrile period and that 1,000 cases of mixed and liberal feeding, with a mortality of only 7.7 per cent., have been reported by one observer,[5] my own practice is based upon the conviction that the diet should be liquid, with the additions cited, until the evening temperature has been normal for a week. I believe that the

*Read before the Medical Society of the Borough of the Bronx, February 14, 1906.

measures of diet herein enumerated will provide ample nourishment, will leave the least possible amount of unabsorbed residue to irritate the upper intestine, and will afford abundant variety and support to the patient during the febrile period.

The indications for the use of alcohol are: First, weak heart action as shown by small, feeble, irregular pulse, with feeble cardiac impulse and faint first sound; second, profound toxemia, as shown by delirium, tremor, carphologia, or subsultus tendinum; third, respiratory complications, as bronchitis, bronchopneumonia, croupous pneumonia, or pleurisy; fourth, previous habitual use of alcohol; fifth, persons of feeble constitution and those past middle life. A contraindication to its use is acute nephritis, or chronic nephritis with an acute exacerbation due to the typhoid infection.

In private practice we are expected to order drugs. The most useful prescription, in my opinion, is a combination of hydrochloric acid and liquid pepsin given after the food. To this may be added, when indicated, strychnine. Strychnine will be needed under about the same circumstances as alcohol. But there are some cases in which the typhoid toxins affect the nervous system in a manner similar to strychnine. These cases may be recognized by marked exaggeration of the knee jerk and a tendency to opisthotonus and to trismus. In them, strychnine should not be given.

Ten years ago,[3] I expressed the hope that the serum diagnosis of typhoid fever would soon be followed by successful serum therapy. That hope is yet to be realized. At the present day the most successful agent in the management of typhoid fever is water. The use of water, inside and outside, is not new. Since the publication of Ernest Brand of Stettin, in 1861, advocating systematic cold bathing, the method of tubbing in typhoid fever represents the most marked advance in the management of this disease. The details of this procedure are familiar to you all. Its good effects are by no means limited to the reduction of temperature. In fact, if a case of suspected typhoid fever during the first week shows a drop of more than 2½° F., after a Brand bath, it would be well to revise your diagnosis and look for some other disease. The other beneficial results of the tub bath are shown in the nervous system by lessening of the toxic features; in the circulation by reduction of the pulse and rise of the blood pressure; in the respiratory organs by diminution of the initial bronchitis and passive congestion; in the skin by lessened liability to bedsores; in the kidneys by augmented excretion of urine and of toxins, and in the mortality by a reduction which, when first reported, seemed incredible. It is the only routine measure of treatment for which I leave a standing order in hospital practice. But the labor and expense cannot always be borne by families. It has been estimated that the average cost of each Brand bath in private practice is two and a half dollars, and when a serious case requires several baths in a day for several successive days, the cost might be prohibitive. We are then often obliged to accept a substitute for it. Cold sponging is an excellent alternative and will suffice for a case of moderate severity, but cases with very pronounced nervous symptoms will require the cold pack with sprinkling or rubbing with ice over the pack. Other practical home modifications of the bath treatment may be devised, or will be found described in special treatises, but none of these can fully take the place of the tub bath.

Special symptoms and complications in typhoid fever require the utmost watchfulness on the part of the physician. Headache in the first week is better treated by quietude, darkness, and cold locally, than by coal tar derivatives. Sleeplessness may be persistent and exhausting and demand bromide or chloral. Opium has a bad influence upon digestion and the secretions in the early days of typhoid fever. Somnolence, stupor, and delirium must be treated by stimulants and external antipyretics, and a delirious typhoid patient must not be left alone for an instant. Tremor is an indication for the use of alcohol and strychnine. Dry tongue and sordes will not be prominent if mouth disinfection has been carefully attended to. Vomiting, when occurring early, means either profound infection or extreme gastric irritability. Later in the disease it may be of uremic origin. Constipation, after the first week, should be treated by enemas cautiously given. Diarrhea may require change of diet, especially if much milk be taken, and full doses of bismuth combined with small doses of Dover's powder. If tympanites develop, in spite of the empty bowel treatment which has been advised at the outset, the old-fashioned turpentine stupe, with perhaps turpentine enemas, will be useful. F. F. Caiger, in the Bradshaw lecture for 1904,[6] advises oil of cinnamon (in doses of 2½ to 5 minims, every 2 to 4 hours in gelatin capsules or emulsion) for this unpleasant symptom, as well as for its influence as an intestinal antiseptic and its soporific effect in many patients. A rectal tube may be of service if the gas is in the lower bowel.

For intestinal hemorrhage occurring in typhoid my standing order used to be immobility, ice, and opium. Latterly I have discarded the opium, because it masks the signs of perforation—which is apt to occur in hemorrhagic cases. These signs must be recognized promptly if the patient is to have any chance for his life. Ergotine, hypodermically, or adrenalin, now takes the place of opium, but it is extremely doubtful if any drug of the vasoconstrictor class has any real effect in checking intestinal hemorrhage. Collapse is best met with the subcutaneous injection of sterilized salt solution, about a pint being given in from 2 to 4 places. External heat, absolute quiet, absolute deprivation of fluids by the mouth, posture, and hypodermic injections of stimulants will all be required in addition; but we must carefully steer between overstimulation on the one hand and fatal syncope on the other. There is no longer any doubt about the necessity for surgical operation in cases of perforation, nor any wisdom in selecting cases for operation. Every patient should have this chance of rescue from certain death, and the only contraindication to operation is a moribund condition. Early diagnosis and early operation mean the saving of one-third of these cases, and the weight of opinion and experience is now against waiting until the second twelve hours. The symptoms of perforation should be constantly in mind in every case of typhoid, and should be promptly recognized before peritonitis supervenes to cloud the picture and to render surgical help futile. A peculiar change in the facial expression associated with a feeble running pulse and shivering often precedes the development of the characteristic pain. This pain is of sudden severe onset and increasing intensity, localized at first in the right iliac fossa but soon becoming general. Tenderness and rigidity, followed by symptoms of collapse, and later by adbominal distention, make up a suggestive picture, but it is doubtful if there is a single distinctive symptom, although muscular rigidity *newly arisen*, with coincident in-

crease in the pulse rate, may furnish the keynote of diagnosis.

Conditions which may simulate perforation are pleurisy, pneumonia, cholecystitis, perforation or rupture of gallbladder, acute gastrointestinal indigestion, iliac thrombosis, appendicitis, sloughing of a mesenteric gland, peritonitis, renal calculus, distended urinary bladder, rupture of an acute splenic abscess, and abdominal myositis. In cases of doubt it is better to operate, as typhoid patients stand exploratory laparotomy very well. Cases of peritonitis not due to perforation will not be injured by laparotomy. It must never be forgotten that perforation often occurs without the fulminant symptoms supposed to be characteristic.

Besides intestinal perforation, one other spectre stands by the side of every typhoid patient, and that is cardiac asthenia, due to poisoning by the typhoid toxins. The treatment of this condition consists in its prevention by elimination and support during the early stages. Once developed, its immediate outlook is bad, and its remote prognosis very uncertain.

The chest complications of typhoid fever may be overlooked if careful watch of the respirations, as well as of the pulse, is not kept up. In a case attended by a trained nurse, a bedsore should not be accepted either as a symptom or as a complication of typhoid fever. It is neither. It is a blunder. A moderate range of temperature requires no treatment. High temperature does not demand either antipyretic drugs or guaiacol externally Water will control it more easily and safely. The nervous symptoms of typhoid will likewise respond to ice and water much more comfortably than to depressants, hypnotics, or opiates. Cholecystitis occurs in typhoid fever much oftener than it is recognized, and is believed by John H. Musser and others to be the condition existing in many cases of so-called relapse. If its symptoms are very severe and progressive, operation may be necessary. A true relapse, however, is a fresh attack of typhoid fever and must not be confounded with the many other causes of post-typhoid sepsis. Besides cholecystitis, there may be inflammation of the urinary bladder, or of connective tissue, and although all these are due to the typhoid bacillus, they are not typhoid fever. These septic temperatures will not respond to baths as will typhoid temperatures, and here let me repeat the value of this differentiating information. Some of these will soon be made plain by the evidences of thrombosis of vessels. Others probably depend upon a new streptococcal infection coming on after the typhoid infection, and some of this latter group will do best if they are taken out of bed and fed. Bacilluria causing typhoid cystitis is much more manageable since the advent of urotropin—one of the new drugs that has come to stay.

According to Sir William Broadbent, the convalescence from typhoid fever should last at least a year, and in many cases longer. This period is necessary because the heart suffers from the toxins of infectious disease to such an extent that a certain amount of fatty degeneration is almost the rule. And not only the heart, but the muscular coat of the arteries is likewise similarly affected. The influence of typhoid fever in producing permanent circulatory changes was not appreciated in this country until emphasized by W. G. Thayer.[7] Many cases of arteriosclerosis in early life may be traced to a previous typhoid infection. The convalescence of the average patient may be harder to manage than was the febrile period, but the wise physician will issue just as careful orders regarding diet, exercise, and emotional disturbance, and will decline responsibility unless they are followed. In spite of all care, there is a long line of possible medical and surgical complications and sequelæ of typhoid fever, which subsequently may be attributed by the patient to leniency or lack of firmness on the part of the medical adviser.

The limits of this paper preclude any discussion of the prevention of typhoid fever. It seems strange that a disease which, if every man did its duty, would not exist at all, is still allowed to go on, and that the people of the United States pay an annual tribute of ninety million dollars to its existence.[8] The medical profession can strive to remove municipal ignorance by education, and to show corporate greed by exposure, but this unnecessary sacrifice of life and money will go on until the public conscience is thoroughly aroused.

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EARLY DIAGNOSIS AND TREATMENT OF PUERPERAL SEPTIC DISEASES.*

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It is indeed a sad commentary on the practice of modern midwifery, when your essayist of the evening, from the vast amount of gynecological and obstetrical material chooses as his theme so prosaic a subject as the early diagnosis and treatment of puerperal septic diseases. Yet, even though I could honestly state that these unfortunate complications were on the wane, the subject is one of interest to all those whose duties bring them in contact with the woman to be confined, or one recently so. But far from this, my experience causes me to know that puerperal complications are not only not on the decline, but during the last few years on the increase. My actual incentive, therefore, is to call your attention to certain factors not alone from the prophylactic standpoint, but to those lesions which, from my experience, are curable when treatment is applied not alone early, but, what would be a better expression, timely. I approach the subject not in a captious spirit, but in one of altruism. Do not mistake the position which I take in this matter in which the *"ergo"* is more real than apparent. The issue which I want to present fairly and squarely is enunciated in the following sentence: "All puerperal septic complications are due to an infective area in some part of the genital tract. It can always be located by sight or touch. If attacked early and energetically the disease is readily curable, and will not lead to deeper and

*Read before the Harlem Medical Association, January 3, 1906.

more dangerous complications. In short, early and active interference ought and will cure practically all cases of septic infections." It may seem foolish to you if I add *provided we are dealing with a septic process at all,* and this is another keynote to the situation. But more of this later. In the prophylaxis—and this has a strong bearing on the subject—we have proven from original investigations personally conducted that the uterus is practically a sterile organ. Furthermore, a vast amount of scientific research has proven that the normal parturient woman possesses a vaginal secretion which has a decided inhibitory action upon pathogenic organisms. This secretion is markedly acid —its destructive action depends upon the lactic acid secreting bacillus of Doederlein. This can be determined by touch and sight. Clinically we have a vagina which requires no artificial preparation to enable us to conduct labor scientifically. The third portion of the genital tract, the vulva, is a different proposition in view of the fact that this territory contains bacteria that propagate actively, especially in the presence of air and in an alkaline medium. They are the *Staphylococcus aureus* and *albus* and the colon bacillus. Thus we are dealing with a part which is decidedly septic and infectious as is the ordinary skin, and must be treated as such according to well-known surgical principles. Therefore in the management of an obstetric case from the modern standpoint we have but one area which must bear the brunt of our energies so as to render it sterile. This is the limitation of our preparatory treatment, so far as the normal woman is concerned. No antepartum douches, no vaginal toilet, etc., are permissible. So firm is my confidence in Nature's ability to destroy every possible pathogenic germ that may be introduced by operative or manual interference that, when the asepsis of the operator cannot be questioned, no uterine or vaginal douche is ever allowed either before, during, or after the operation. When from bacteriological experience or clinical demonstration this vaginal inhibitory action does not obtain, we are dealing with a secretion which is alkali, profuse, malodorous, and purulent, consequently pathological and in most cases gonorrheal. Now the indication is prophylaxis, and we anticipate the labor by appropriate treatment, and if, when labor sets in, the discharge is not normal, surgical scrubbings, such as are done prior to major vaginal work, are distinctly called for; and, if the labor be prolonged, vaginal douches are administered at short intervals with the hope of destroying, or at least inhibiting, the action of these pathogenic organisms. In approaching a normal labor we never allow douches of any kind, but as far as lies in our power we render the external genitals sterile. The strictest attention is paid to the hands of the examiner. Since the assertion so forcibly set forth that the healthy parturient vagina is naturally in an aseptic condition, there can be only one source of infection —directly or indirectly—and that from the accoucheur or from without. Autoinfection is so rare that for practical purposes it has hardly a bearing upon the subject. Furthermore, in these healthy women no matter what form of operative treatment has been undertaken, whether the forceps has been applied or a version done, or for any reason the hand has been introduced into the uterus. we have not allowed for many years the tract to be washed out or irrigated for the sole purpose of washing out, or at least of attempting to eliminate or limit the sepsis which under these conditions might have been introduced. An intrauterine douche will wash out blood clots and cause a uterus to contract, but we doubt very much whether such irrigations can, even by any possibility, wash out any but the germs that lie on the surface, and this is problematic. We go still further and state that even in the cases known to be septic no uterine douches after labor can be of any service in eliminating the infection, and under these conditions it has been our custom to attempt to limit this infection, first by causing a firm contraction of the uterus, and secondly, by the use of a remedy that will be readily absorbed, and which, by its antiseptic properties, will destroy the germs that lie in the deeper recesses of the organ. This end is obtained by the firm packing of the uterus with iodoform gauze.

In the puerperium all elevations of temperature, or an abnormally high pulse rate, with or without fever, must be looked upon with suspicion, always viewing the case as one of sepsis until this condition can be absolutely diagnosed to the exclusion of all other extragenital complications. The antiseptic conscience and the aseptic hand cannot alone be sufficient certification that sepsis is not present. A complete and thorough physical examination must always anticipate a local one except in those cases in which unfailing evidence is present that the sepsis is the *one* condition present, and none other. Personal experience has brought me in contact with cases of acute lobar pneumonias in which uteri have been religiously irrigated for days for a supposed puerperal sepsis. Likewise retromammary abscesses, pyelonephroses, and many other conditions were found as the cause of temperatures in the particular cases. Yet in every case, with but few exceptions thus far brought to my notice, the uterus has been constantly and persistently treated, most practitioners looking upon the temperature after labor as septic, and, without rhyme or reason, causing the unoffending uterus to bear the efforts of their endeavors. I may add to this by stating that I hardly remember seeing a case of fever after labor, no matter what the cause of such might have been, in which the uterus had not been curetted or irrigated, or both, whether the indication therefor had been clear or the diagnosis had been clinched. If it is chagrining to the consultant, how mortifying must it be to the attending physician to have the former discover a pneumonia or a mammary abcess present which had been the cause, and had been treated for days by curetting and constant uterine irrigation? To attempt to melt an iceberg by a hand atomizer would be about as successful. There is too much tinkering with the uterus—for I have seen temperatures kept up by senseless uterine irrigation. My conclusions as to these latter words may be summed up epigrammatically as follows: "Don't curette and then hunt for a diagnosis; but diagnose and act accordingly."

In the diagnosis we search locally and generally for the cause. Excluding extragenital lesions which might have a bearing on the condition and a good history of the case, we can readily concentrate our attention upon the source of greatest danger in the puerperium—the vagino-uterine tract. A blood examination should always be made. From such an examination I have repeatedly been in position to diagnose a paludal poisoning by finding plasmodia in the blood; even though the temperatures were atypical, the history negative, and the spleen but slightly enlarged. These cases which are improperly called puerperal malarias, when in reality they are malarias complicating the puerperium, are in my experience more frequent than

we are led to believe. The diagnosis was not made by empiric thoughts nor entirely by quinine therapy, but by the presence of the specific organism. The presence or absence of an increased leucocyte count is of little value to us, for the main reason that immediately after labor there is such a rapid fall of the leucocytes, amounting to almost a third, that we cannot lay too much stress upon this particular symptom. This I have shown elsewhere from a study of this subject during pregnancy and the puerperal state. To what extent the polynuclear count will bear upon the subject I am not prepared to state. The presence of streptococci and staphylococci in the blood is conclusive when found, but how often in just the cases we expect to find them are they not absent? For this reason while when they are present the diagnosis is assured, their absence does not prove that a severe sepsis may not be present. Of the greatest importance is the local examination. This can be complete only when supplemented by a careful visual examination. Unless the symptoms point to an undoubted uterine sapremia, the visual inspection must anticipate the manual examinationn. A large tender uterus with a putrefactive malodorous discharge means a pure sapremia from retained secundines, and nothing else. A small non-tender uterus with sweet discharges absolutely excludes the presence of retention products. This must not be interpreted in too absolute a sense, for there is no recently pregnant uterus that does not contain some of the remains of the products of conception. These do no harm if the accoucheur has been clean and no sepsis be present. Dangerous as it may appear, I want to go on record as believing, and practising as I preach, that where strict asepsis has been secured small placental particles and membranes may be left behind with impunity. The great danger lies in studiously hunting for them immediately postpartum, when if left alone they would be discharged spontaneously with no danger to the patient nor discredit to the physician—providing that the too ambitious consultant or the inquiring medical attendant hunting for a supposed source of infection and *his pound of flesh* brings not to light by his curette a small particle which may be a harmless placental atom or a thin shred of membrane, or, what is more likely, an inoffensive blood clot. Again I say the man who hunts for something in the uterus will always find it, but I question whether, in the absence of sapremia, he does not do more harm than good.

It is to the so-called puerperal ulcers that I wish to call your attention specifically. I have maintained for years that practically all sepsis arising after labor gains its entrance from these lesions, whether they be situated at the vaginal outlet, their most frequent site, or upon or within the cervix. Further timely recognition and treatment will cut short many a case of beginning sepsis that would otherwise lead to a prolonged and dangerous illness, providing the initial lesion had been discovered early. Many cases have come under observation in which a most insignificant puerperal ulcer has had its career cut short and the attendant symptoms of an infection cleared up by attention to this lesion and nothing else. Further experience has taught that when a rapid defervescence of these symptoms, does not occur in short order we are dealing with an accessory extragenital lesion, whether septic or not. Thus the records show at least twelve cases in which such a condition confronted us. An examination of the blood showed plasmodia, which as a concomitant associated condition caused the delayed fall in the fever. Administration of quinine rapidly cured the case. On the other hand, primary examination of the blood presented plasmodia; quinine, while it allayed the chills and irregular temperatures, and caused the disappearance of the plasmodia, still did not cause the temperature to disappear. The discovery of some puerperal ulcers and their treatment gave a complete apyrexia in a few days. Visual inspection is necessary to discover these so-called diphtheritic ulcers. Anedematous condition or pain on pressure over a recently sewed perineum warrants the immediate removal of all sutures, for hidden areas are the most likely and most dangerous sources of infection. A personal classification divides these ulcers into two classes: (1) desquamative and (2) exudative. They may be situated upon any area of the genital tract from the perineum to the endometrium. The desquamative ulcers appear merely as extensive mucous membrane excoriations. The part is dry and angry looking and red and hot. The epithelium is absent and the mucous follicles appear macroscopically as minute pinheads. Radiating red streaks of lymphatic involvement are very evident. These ulcers stand in sharp contrast to the surrounding mucous membrane. If neglected these ulcers soon become covered with a slough or pseudomembrane, and take on the character of the second or exudative ulcers. Here the picture can be likened only to a very light diphtheritic membrane covering, but only slightly adherent to, the underlying tissue. The parts of predeliction to be attacked are in the milder cases the deep crevices and sulci in the perineum, vagina, and lacerated areas upon the cervix. Glands may or may not be enlarged, but often the veins at the bases of the broad ligaments are thrombosed. Around these ulcers the interest of my paper must center. I maintain that practically all cases of puerperal septic infection arise from these ulcers, and their recognition will terminate practically nearly all cases of beginning infection. Even though placental tissue and membrane are retained they will not cause sepsis unless infection be carried to them. Further, that if all cases of genital infection be examined early enough, these ulcers will be found in an overwhelming majority of cases as a distinct entity in the causation In the absence of suspicious evidence of an infection the bacteriological examination of the uterine contents becomes of enormous value if it can be done by one expert in getting such tainted material. But because of this difficulty it becomes a measure eminently not suited to the practitioner in general, but fitted to one expert in this line under conditions in which such a culture cannot be contaminated by extraneous material. My deductions are based upon some forty-seven examinations after labor. The size of these ulcers varies from an area difficult to see to one whose limitation is that of the entire perineum, vagina, and uterus. In these latter cases the entire vaginal tract is completely covered with a diffuse grayish membrane extending as far as one can see into the uterine cavity.

Treatment.—We limit ourselves to the early cases and differentiate uterine from vagino-perineal sepsis wherever the line can be consistently drawn. If visual inspection reveals no lesion of the perineum, vagina, or cervix, we examine further as to the status of the uterus. Foul discharges, high temperatures, and relatively low pulse can only mean intrauterine sapremia. We are then, and then only, justified in exploring for retained products of conception. Having located these as the source

of infection they are removed by any means at our command; whether by the curette or hand is simply a matter of choice, as the experience of the operator teaches. This is done once, and once only—further drainage being secured by intrauterine gauze or drainage tube. But this is all; for if this be the source of infection, and is thoroughly removed, it will positively shut off danger from this direction. If decomposing intranterine secundines are not found, the symptoms of sapremia nevertheless being evident, we are then dealing with a puerperal ulcerative endometritis. This diagnosis is made all the more positive by the presence of ulcerative areas upon the cervix. Here any active intrauterine interference is positively contraindicated. Curettage is the worst possible thing to be done, for you curette away this sloughy area, denuded as it will be, to be attacked by a new slough each time it is thus traumatically bared. You thus carry the infection deeper into the uterine wall and open up fresh areas of infection. Our strength of attack is by no means of pure cauterants. A thorough application of pure carbolic acid, 50 per cent. solution of zinc chloride, or the pure liquor ferri are all at our command. The uterus is thus treated by means of pure alcohol gauze, in the center of which is placed a large drainage tube leading from the uterus into the vagina. Into this tube, and thus keeping the intrauterine gauze moist, are injected from four to five ounces of pure or 50 per cent. alcohol four to five times a day. This gauze can remain in place without changing for a number of days. An ice-bag over the uterus and large doses of ergot complete the treatmennt. It is just in this class of cases that we deprecate overactive treatment. Other things being equal, the less tinkering done the better are the chances for the patient. In a series of thirty-two cases seen in the short period of six weeks, only one patient died, and she was a bad subject from the start. In cases of puerperal ulcers in other parts of the genital tract, it is our purpose to attack them vigorously from the start. The exudative variety is readily recognized, but it is more difficult with the desquamative ulcers. With the latter, careful and close examination, comparing one part of the tract with the other will soon reveal the infective nidus. Where ulcerative areas are evident and limited to the lower genital tract, under no condition is the interior of the uterus to be invaded by hand or instrument for the one evident danger of carrying the infection higher up. The above-mentioned cauterants are most vigorously applied. Carbolic acid in pure form is our choice, because of its painlessness, its deep searching influence, and the wonderful inhibition alcohol plays in the control of its action. The acid is applied to all parts infected, followed by pure alcohol in the course of a minute or so. This is repeated every twenty-four to thirty-six hours until the parts appear healthy. A decided drop in the temperature soon follows this application. A strip of gauze is introduced within the parts to cause a separation of the tissues thus treated, and douches are regularly given. Thus I end my article. Puerperal infection depends upon infection from without, gaining its entrance practically always by lesions in the vagino-uterine route. Discover these, attack them energetically and wisely, as you would infective areas in other parts of the body. Overtreatment is reprehensible, unwarranted treatment dangerous. The curette has served us well in appropriate and selected cases. This instrument should not be blamed for its shortcomings; the blame rests with the man behind it, even as it is the man behind the gun who does the work. The curette is blind; the guiding hand is sentient; thus always, as in life, let the seeing, guiding mind lead the blind. He who seeks blindly seeks not too well.

947 Madison Avenue.

THE DETERMINATION OF THE ABSENCE OF HYDROCHLORIC ACID BY A SIMPLE STOOL EXAMINATION.

By ALFRED F. HESS, M.D.,

NEW YORK.

Until recently we rarely met with an article relating to the examination of the feces. Of late, it is quite the contrary, and especially during the past year many articles urging the importance of stool examinations have appeared. The cause of this sudden interest in this branch of laboratory work has undoubtedly been the introduction into clinical methods of the Schmidt test-diet.[1] Before such a diet was devised the work was necessarily desultory, as no clear idea of the contents of a normal stool existed and we could not distinguish the physiological from the pathological. It hardly seems requisite to review this comparatively new method, as a full account of its composition and of the different steps of the stool examination and their respective significance has appeared recently in this journal[2] and elsewhere.[3] Moreover, the one point to which I wish to call attention and emphasize, although based upon the test-diet, does not depend upon its application.

Before proceeding I should like to mention that my experience with this line of work began in the summer of 1904, when Prof. Schmidt was kind enough to allow me the use of his wards and laboratory. Since then I have carefully followed the articles bearing upon this subject, but would not have contributed the result of my experience had it not seemed to me that one of the essential points, perhaps the one best suited to practical therapy and the easiest of application, has been almost entirely neglected in the articles which have come to my notice. I have in vain been waiting for the following striking fact to be brought out strongly for the use of the clinician, namely, *that from a naked-eye examination of the finely divided stool it is possible to diagnose the lack of secretion of hydrochloric acid by the stomach.* The fact that connective tissue in such cases can be demonstrated by the microscope has been well brought out.[4]

The method of procedure in order to ascertain the deficiency of hydrochloric acid is simple. The rigid test-diet, as I have mentioned, need not be prescribed, so that all objections to its large quantity of milk are not pertinent. All that is required is that the patient should eat daily for three days prior to the stool examination not more nor less than one-quarter of a pound of chopped beef, *cooked so that it is still rare within.* In addition to the meat there may be allowed oatmeal, soup, eggs, mashed potatoes, jelly, toast, zwiebach, butter, sugar, milk, coffee, tea, cocoa in any form or combination whatsoever—not in unlimited quantities, but in moderate amount. He may eat two eggs a day, twice of oatmeal, and enjoy for dinner the chopped beef and mashed potatoes in addition to the accessories mentioned. Surely this is a sufficiently liberal diet for a sick person for a period of three days.

This regimen having been carried out, we are ready at the end of the third day to examine the stool. This does not consist of the usual cursory glance. The stool should be mixed with a spatula

and then a mass about the size of a walnut should be *thoroughly ground* in a mortar, making gradual additions of water until no solid material is visible. Upon the thoroughness of this process depends the possibility of the diagnosis. The fluid is then poured upon a plate with a black background, and to one of moderate experience the diagnosis is now possible. Often a rapid survey is all that is required.

The physiological and chemical basis of this test is founded upon the established fact that connective tissue can be digested only by the gastric juice. This being the case, it is clear that, provided we know the quantity of connective tissue which a healthy stomach can digest, we can use the presence or absence of connective tissue in the stool as a gauge of the amount of hydrochloric acid secreted by the stomach. This factor has been ascertained. As the result of experimentation Schmidt found that the normal stomach secretes daily sufficient gastric juice to digest all the connective tissue contained in 100 g., or one-quarter of a pound, of cooked beef. The stools of a person eating this quantity should be free from connective tissue, otherwise the secretion is lacking in amount. Naturally, if the meat is uncooked, too much work is required of the stomach; and again, if it is cooked through and through, too little is required—in both cases the test loses its value.

Upon looking at the surface of the liquid stool we may see numerous whitish or yellowish particles. This is the part of the stool of interest to us, for it is the only part which may consist of connective tissue. It may, however, be merely vegetable matter. The differentiation is generally possible without the aid of the microscope. The vegetable particle is apt to be of a yellowish color, as it stains more readily with the bile pigment. Of far greater importance is the fact that upon attempting to disintegrate the particle by means of teasing we find this, in the case of connective tissue, to be very difficult; such tissue is tough and it cannot be divided into many small pieces. If it is first washed and then teased its fibrous nature is often evident. On the other hand, a clump of fat or vegetable matter, although at times firm, never offers the same resistance and is much more readily disintegrated. The differential diagnosis is in most cases possible by this simple method, and naturally becomes easier with practice. It makes very little difference whether we are in doubt as to the identity of one or two small particles if we are able to identify the others, for one or two small tissue bits cannot be considered diagnostic. Sometimes, though rarely, we have to resort to the microscope for diagnosis. This quickly dispels our doubt and allows us to differentiate, for the large cellular vegetable tissue cannot be confounded with the interlacing fibrillar connective tissue bundles. Occasionally, in spite of the diminution of hydrochloric acid the connective tissue does not appear in the stool. However, it never appears if the gastric secretion is normal in amount.

In this simple manner we can diagnose without the use of the stomach tube cases of gastric disturbance combined with diminished secretion of hydrochloric acid, or of achylia gastrica. I have records of many such cases, but shall merely give one illustration.

A patient was admitted to the hospital for emphysema and pleurisy with effusion. He gave a history of having had occasional attacks of diarrhea for the past ten years. An attack of this nature led to our restricting his diet for three days. The macroscopical examination of the stool after this period showed small grayish-white threads scattered throughout, superficially resembling pin-worms. Some small clots of entangled threads were also seen. All these particles were composed of connective tissue. The stomach contents, taken as a control in this case, showed an absence of free hydrochloric acid; total acidity, 15; no lactic acid.

This means of diagnosis is applicable in all cases of suspected diminished gastric secretion from one cause or another, or of achylia. For this latter class of patients it acquires additional value, as these are the very cases in which we find the greatest difficulty in recovering our test meal, owing to the rapid passage of the food into the duodenum. It is especially to be recommended for nervous patients and those who refuse the stomach tube, as well as in all cases where for one reason or another we fear the introduction of the tube into the stomach. I feel convinced that almost every physician can recall cases in his practice where it would have been of the greatest value to have ascertained the amount of hydrochloric acid secreted by the stomach, but where he was prevented by the inability to introduce the tube, or by the inadvisability of so doing.

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154 West Seventy-second Street.

DIABETES MELLITUS IN CHILDREN.

By H. R. LIVENGOOD, M.D.,

ELIZABETH, N. J.

In looking up the subject of diabetes mellitus in children, I find that Stern could find but thirteen cases reported in children under five years of age, prior to 1902. Having had two such cases come under my observation, I think it might be of interest to report them, together with another case in a child eight years old.

Case number one.—Emma G., aged two years, six months. I first saw this patient on August 12, 1905, and the mother gave me the following history: The child had been ailing for about three months, and had been treated by two other physicians for dyspsepia. Previous to that time she had been considered healthy, except that she had been subject to frequent attacks of bronchitis. The family history was negative, and both parents seemed in perfect health and had but the one child. The child had a voracious appetite, and the mother had indulged it with all sorts of sweetmeats and pastries. The child then began to have intense thirst and frequent urination, and later complained of feeling weak and tired on the least exertion, and began to have frequent attacks of vomiting. The muscles were found flabby and the skin white and clammy. The temperature was normal; the pulse weak and accelerated. The tongue was moist and furred. A few bronchial râles were heard in the chest. The abdomen very much distended and tympanitic. The milk teeth were all decayed. The urine was found to be the typical diabetic urine, with a watery color, acetone odor, and a specific gravity of 1.040. One drop added to 5 c.c. of Fehling's sol. was sufficient to color the mixture with the oxide of copper precipitate. Two quarts of urine were passed in the twenty-four hours. The child was put on a strict diet, and on account of the vomiting and tympanites,

a powder of calomel, salol, and sodium bicarbonate was given. Later on, when these symptoms began to subside, iron, quinine and strychnia were substituted. The child seemed to improve; the thirst and hunger diminished; the frequent urination abated, and the child seemed more playful and active. Amount of urine in twenty-four hours, three pints. Notwithstanding all this, she was seized on the 27th with an attack of vomiting, followed by dyspnea and convulsions, which lasted until midnight, after which she lapsed into coma and died at seven next morning, seventeen days after the first visit.

Case number two.—Reported through kindness of Dr. Strickland of Roselle, N. J. W. A. W., male, aged four years, five months. On January 3, 1897, this patient had the following history: For a week past the child had been noticed to have an enormous appetite, intense thirst, and to have passed large quantities of urine. He had always had good health previously, and never had had any of the infective fevers. The family history also was negative. The symptoms increased and the daily amount of urine averaged four to five quarts. The urination seemed to be increased at night and large quantities were passed every fifteen minutes. This was the characteristic diabetic urine, with a high specific gravity, and containing a large amount of sugar. Coma developed during last twenty-four hours, and the emaciation could be noticed progressing at three hour intervals. Death occurred on the 19th, the child having been sick enough to need medical care seventeen days. The treatment in this case consisted in diet and the administration of brewer's yeast, as long as the child could take it.

Case number three.—Emily O., aged eight years. This patient was seen first by me for her last illness, on August 5, 1905, with almost the same symptoms described in the first case. Here there was no vomiting and the general tone of the body was better. The abdominal distention was well marked and the teeth decayed. Constipation was also present. I had treated this child the previous November for diphtheria, and had given antitoxin, to which the parents had attributed the beginning of the present illness. With this exception the previous and family history were negative. This child was passing over two quarts of urine, with a specific gravity of 1.040 in a single night. She was put on a strict nitrogenous and fatty diet and calomel, salol, and sodium bicarbonate were given for the abdominal condition. Improvement began at once; the appetite and thirst were ameliorated, and the quantity of urine and tympanites lessened. On August 24 the patient weighed forty-two pounds. She passed two quarts of urine in twenty-four hours, with a specific gravity of 1.034. Two minims of Clemen's solution of the bromide of arsenic were given three times a day, and a purgative mineral water to regulate the bowels. On October 28 the weight was forty-six and three-eighth pounds, and the specific gravity of the urine 1.028. On November 23, weight was forty-six and one-half pounds, and the specific gravity of the urine 1.030. It was then impossible to measure the urine, as patient was going to school. She did not have to get up at night to pass it, and went out only once during school hours to pass water. December 10, 1905, the patient had been failing for the past week, and had lost appetite and flesh. Later she vomited. On the evening of the 11th she passed into a comatose state and died the next day at noon. Alkalies were administered during this state by hot rectal injections, with no result. The disease lasted in this case a little over four months.

It will be noticed that in the first and third cases, a marked improvement took place, and the quantity of sugar diminished, although it was never absent. This seemed encouraging at the time to the parents, although I had given them a very bad prognosis. These cases only help to corroborate the prognosis given by Senator and Stern, when they give the mortality at nearly 100 per cent. in children.

1105 East Jersey Street.

MUENSTER AM STEIN.

By B. FERNOW,
NEW YORK.

At the foot of the rocks, upon which stands or stood that "Home of Justice," the castle of Francis von Sickingen, and within view from Rheinstein, the castle of Prince Henry of Prussia, lies surrounded by mountains one of the many spas of the Rhine valley, Muenster am Stein, where every year thousands of patients are sent by their medical advisers for the cure of various ills. The means to effect a cure are both baths in and drinking of the waters. The chief spring pours out water of the temperature of 104° F., and containing in 1,000 parts

Sodium chloride	7.90
Calcium chloride	1.44
Magnesium chloride	0.192
Potassium Chloride	0.174
Lithium chloride	0.07
Strontium chloride	0.0704
Sodium bromide	0.076
Sodium iodide	0.0035
Calcium carbonate	0.145
Iron dioxide	0.0039
Silica	0.009

This hot water is mostly used for bathing, while the five cold springs supply the drinking water for patients, who absorb, in the amount prescribed:

Calcium chloride	228.540
Magnesium chloride	33.423
Strontium chloride	9.000
Potassium chloride	34.280
Sodium chloride	24.010
Lithium chloride	4.001
Magnesium bromide	16.042
Magnesium iodide	0.008

Rubidium and cesium visible in spectrum analysis.

Patients come to this picturesque place to be treated for scrofulous troubles, rickets, skin diseases, uterine disorders and menstrual irregularities, laryngitis, rheumatism, and gout. They are not obliged to leave their hotels or boarding-houses in order to take the prescribed baths or drinks, but can do so before dressing for breakfast or going out. They are offered also a third treatment, that of breathing the salt atmosphere, rich in ozone, for the great saltworks, almost encircling the town, supply this beneficent factor.

Nor is the visitor, who comes with an invalided member of his family, deprived of out-of-door amusements: he or she may, by crossing the Nahe river, encircling the town, wander through the forests at the foot of the mountains without fear of losing a shoe in mud, for the roads are too well built for that. Excursions may be made to a number of historic rivers by the use of bicycles, and everywhere the visitor will find he can taste one of the celebrated Palatinate wines at the source. Living is comparatively cheap. Lodgings may be had for $1.50 a week, and full board for from $1 to $1.50 a day.

Army and Navy Club.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, April 28, 1906.

TREATMENT OF DIFFUSE SEPTIC PERITONITIS.

ALTHOUGH the subject of an untold number of medical monographs and papers, the importance of this question does not permit of flagging interest, and it is well that as much information as possible be gathered and made public. From what has been published it is quite evident that certain methods which not so very long ago were considered faultless are now being again abandoned, and among these is the thorough flushing of the peritoneal cavity in cases of diffuse septic infection, with liberal quantities of sterile saline solution. In spite of its pretended value, even this procedure is accompanied by a mortality of from 70 to 80 per cent., and if the method is critically studied there appear many reasons why this should be so. In the zeal to make the cleansing (?) process complete and thorough, the abdominal contents areu sually subjected to a degree of disturbance which will render null and void all of nature's own efforts at overcoming the infection. And in a pathological process of this character as much dependence must be placed on the body's own system of defense as upon any procedures made use of by the surgeon.

In a recent article, R. G. Le Conte, of Philadelphia (*Annals of Surgery,* February, 1906) directs attention to the excellent technique for cases of septic peritonitis made use of by J. B. Murphy of Chicago, in which all unnecessary and harmful details have been eliminated. The essentials may be summarized in comparatively few words. In the first place, the source of the peritonitis must be rapidly gotten rid of, whether this be a perforated appendix or bowel, a ruptured pus tube, or other similar condition, and this must always be done with the least possible handling of the peritoneal contents. The only permissible drainage is by a tube leading down to the lowest portion of the pelvis, through a suprapubic opening, which, together with that afforded in certain cases by the operative incision, is all-sufficient. All time-consuming procedures during the operation must be eliminated and the position designated by Fowler's name should be assumed after the patient is returned to bed. One of the most novel features of Murphy's method is the slow introduction of large quantities of water into the rectum, at a rate of speed which allows for its immediate absorption. This absorption is claimed to do two things: first, to reverse the current of lymph in the lymphatics of the peritoneum, so that instead of absorption taking place from the peritoneal surface, the mouths of the lymphatics pour out fluid which bathes the peritoneum constantly. The Fowler posture, together with the action of the diaphragm, sends this fluid into the pelvis and this washes the infectious material away in its descent down to a place where it may find its way out through the drainage tube. Then again, the free absorption of fluid from the rectum stimulates the heart and kidneys, and, since it largely increases the amount of urine, it thus eliminates a considerable quantity of septic material which has gained an entrance into the circulation. Another important point in the technique of the treatment is the absolute stoppage of mouth feeding. This checks peristalsis and prevents the dissemination of septic material by the movements of the intestine. The patient will be found to be readily sustained for two days, or even more, by the absorption of water from the rectum, but if deemed advisable small quantities of food may be run in with the irrigating fluid.

There can be little doubt that the method here referred to is absolutely correct from the theoretical standpoint, and those who have tried it are convinced that in practice the theory is fully sustained by the excellent results obtained. It is to be hoped that methods based on the same principles may be more universally adopted and may be found to be productive of good results, for the mortality rates for septic peritonitis are still deplorably high and capable of much improvement.

PROPHYLAXIS OF MALARIA.

THE widespread character and ravages of this disease have called forth numerous efforts at producing an artificial immunity, the majority of which have unfortunately met with little success. Mechanical prophylactic measures directed against mosquitos are no doubt of extreme value, but they are necessarily limited in their application, and particularly in the regions where the disease is endemic the native population cannot be subjected to these restrictions in any considerable number. Attempts to attain a certain degree of immunity by the administration of quinine and other drugs have been received with varying degrees of favor, and many objections have been urged against their use. Professor Celli of Rome, who has had unlimited opportunities for studying the Italian fevers, claims, however, in an article in the *Archiv für Schiffs- und Tropen-Hygiene,* vol. 10, No. 2, that the proper administration of quinine is unsurpassed as a preventive measure. He believes that the failures which have attended this method may be attributed to the administration of an insufficient quantity or to the prolonged intervals between the doses. Thus Koch recommended that the drug be given every seven to ten days, while Celli advises daily doses of from forty to sixty centigrams (six to nine grains) of the bisulphate or the hydrochlorate of quinine in the form of sugar-coated tablets. In Italy the government has been sufficiently impressed by the value of this procedure to provide for the gratuitous distribution of the tablets among the poorer classes of the population.

Contrary to what might be expected, it has been found that all evidence of cinchonism disappears

within four or five days after the beginning of the administration, and no further disturbances of the nervous or digestive systems are evident. On the other hand, where the quinine was given at weekly intervals, the toxic symptoms were produced anew at each administration. The daily use of the drug was accompanied by other advantages, among them a well-marked tonic effect. In addition there was no inhibition of the curative properties of the drug, for it was repeatedly shown that if an individual thus treated in a prophylactic manner became later the subject of an acute malarial attack, the latter was never severe or prolonged, and responded readily to theraupeutic doses of quinine. Celli also found that the various patented derivatives of quinine and the preparations of arsenic or iron so frequently used in chronic malarial poisoning, had practically no effect as prophylactics.

Celli's method must, of course, be merely regarded as a single item in the campaign against malaria, and the sanitary features of the problem must continue to be of prime importance. But while these operations are under way, it is necessary to protect those engaged in the work, and in this particular Celli's suggestions have proved a valuable asset. By keeping the working forces free from the attacks of the disease or by reducing the virulent effects of the latter, a much higher standard of efficiency can be secured. There would appear to be no good reason why this procedure, which Celli claims has been attended with such excellent results in Italy, should not be tried on the Isthmus and in other communities nearer home.

THE PRACTICE OF MEDICINE.

This is the commencement season when the medical colleges all over the country are turning out hundreds of young men grounded in the science of medicine and eager to enter upon their life work. The young graduate of to-day is better trained than were his predecessors of half a century or even a generation ago, but it may be questioned whether he is as fit to care for the sick. The study of medicine is very different from what it was in former times. Then the college was of minor importance. The student passed the greater part of his period of training in the office of some physician and took two courses of lectures in some medical college to supplement the individual teaching of his "preceptor" and as a necessary preliminary to the obtaining of a degree. His office study was eminently practical, he saw his instructor's patients, studied their symptoms under the guidance of the practising physician, and learned from him how to treat them and their diseases. The knowledge he gained in this way was crude, but it was practical. When he became a Doctor of Medicine he was truly a physician, familiar with the multiple aspects of disease and unterrified in its presence. To-day the graduate knows much more of the theory of medicine, he is grounded in pathology and bacteriology and is well up in the symptoms and typical course of a case of typhoid fever or pneumonia; he has attended many clinics and has heard didactic lectures without end on all branches of medical science; but he knows patients only as cases—with the individual sick man he has no acquaintance whatever. This lack must be supplied by a course of interneship in some hospital, and no one to-day thinks of entering upon the practice of his profession without this indispensable training, if it is possible to obtain it.

The motives which induce a man or a woman to take up the study of medicine are varied. Some are attracted by the pure love of science, they are led to enter the profession by a consideration of the opportunities which it offers for original research, just as others are attracted to the study of chemistry or physics or astronomy; such usually devote themselves to laboratory work and are physicians only in virtue of their medical degree. Others practise medicine, but are led to do so by the interest which the observation of morbid action in the human frame excites, they are concerned chiefly with pathology or the action of remedies and are interested in the case rather than the patient; they might just as well be veterinaries except for the accident of having begun their studies in a medical college. Some are induced to enter medicine because they think the title of doctor will give them a certain standing in the community and will raise them in the social scale; these may eventually become true physicians, or they may stick to their calling, after they have become disillusioned as to the position in society which they had hoped to attain, simply because they have no other means of livelihood. Finally others, and these we believe constitute the majority, enter upon the practice of medicine because they love their fellows and hope, through the knowledge which they are to acquire, to be able to reduce the sum of human misery. These are the true physicians whose mission it is to help mankind.

The profession of medicine, even on this higher plane, is nevertheless not entirely altruistic. Those who serve the temple must live by the temple. Life and health are precious and their preservation must be paid for, and this aspect is one that should not be ignored by the young physician. The relation of a physician to his patients is peculiar in that it is intimate and personal, and there is something repugnant to the sensitive man in demanding pay for a work of mercy; but this is a feeling that must be fought against. The practice of medicine is not a trade, but it is a means of livelihood nevertheless, and there is a business side to it which must not be neglected. The laborer is worthy of his hire, and there is no greater laborer than the physician. His entire existence is devoted to the task of saving life, when he can, and to the alleviation of the ills of suffering mankind. For this he asks not riches, but a living wage, and to a living wage he is entitled. We do not mean that he should be hard or actuated by mercenary motives, but he should let it be understood that he knows the value of his services and expects his well-to-do patients to recognize their value. He should keep accurate accounts and present his bills at regular intervals, and insist that these bills are paid and paid promptly. The humanitarian side of medical practice is paramount, but the material side is a close second; indeed, in no other calling are the altruistic and the financial so closely joined; they

are in truth inseparable, though mutually restrictive. If what we must call for want of a better term the commercial side of medical practice is neglected, an injustice is done to the wife and children as well as to the other physicians in the community; if the business side is cultivated too assiduously, the descent into charlatanism is perilously near. The physician should be charitable, but not "easy." A dignified insistence upon due recognition of the worth of his services will not lower him in the estimation of his patients, but will rather increase the respect in which he is held by them.

San Francisco.

It is a cause for wonderment as well as congratulation that the loss of human life in the fearful catastrophe that has laid low the chief city of the Pacific Coast was comparatively so slight. Of course, the exact number of those who perished during the three days' conflagration will never be known, but, large as it may be, it is certainly much smaller than was at first reported. It is appalling to think what it might have been had the earthquake come in the day time when the business section of the city was densely populated. The time for congratulation, however, has not yet come, for there is danger ahead. Those whom the falling walls and the fire have spared are in peril from exposure and contagion. Thousands of homeless wanderers are living in the parks and open spaces, hungry and thirsty, scantily clad, and exposed to the night chill and the rain, and that pneumonia will claim many of them for its own is inevitable. There is, however, a still greater danger which threatens, but which may be averted if heed is paid by those in authority to the counsels of the army surgeons and the physicians in charge of the sanitation of the camps of refuge. Typhoid fever, a preventable disease, is the menace which now hovers over the ruined city, and an epidemic can be averted only by an observance of sanitary laws well known to physicians but only too apt to be disregarded or contemned by laymen in authority, whether military or civil. The dispatches from San Francisco state that the command has been given that all the water used for drinking must be boiled. That is good so far as it goes, yet not altogether reassuring. If this is the only precaution that has been taken it will be unavailing, for the danger lies not in the water supply but in the latrines. Some of those now in the camps of refuge are no doubt sickening with typhoid, if not already attacked. These cannot contaminate the sources of the water supply, but they will surely pollute the soil with their discharges, both alvine and vesical, and unless those are disinfected nothing can prevent a diffusion of the germs of the disease. The lesson of Chickamauga is only eight years old, that of the Russo-Japanese war is but one. We can but hope the officers of the army now in command at the Golden Gate have learned these lessons and have not forgotten them, and that no ignoble jealousies will prevent them from giving full authority to the medical men to carry out the necessary measures of prevention. If an epidemic of typhoid fever breaks out among the refugees in San Francisco's parks, it will be easy to place the responsibility, and those who may have hindered the work of sanitation must and will be held to a strict accountability for the needless sacrifice of life.

The Fifteenth International Medical Congress.

Held in Lisbon, April 19-26, 1906.

(Special Cable Report to the Medical Record.)

The Fifteenth International Medical Congress was formally opened by the King of Portugal in person on the afternoon of April 19. The large hall of the Geographical Society, where the session was held, was thronged with members of the Congress and citizens of Lisbon, among the latter being many ladies. The King welcomed the congressists in the name of Portugal. Physicians, he said, were occupied with the most beautiful and noblest of tasks—the healing of the physical ills of mankind. He hoped that the deliberations of the Congress, which he had the pleasure of now declaring open, would be fruitful in the discovery and promulgation of new facts in medical science whereby the life of man on earth could be made longer, stronger, and yet more restful. Portugal, ever mindful of her duty to the world at large, prized the work of medical men which had already been of such signal benefit to the human race, and admired, honored, and furthered this noble science. The Queen then arose, amidst great applause, and spoke a few words expressive of her thanks for the honorary presidency to which she had been elected.

The President of the Congress, Councillor Costa Alemao, then delivered an address. He first thanked the King and Queen, who had so graciously cooperated with those engaged in the war against tuberculosis and had lent their powerful aid in furtherance of the movement, for the interest which they had also manifested in the work of the Congress. He welcomed the foreign guests and also his Portuguese colleagues. These latter, he said, had not gained renown for any notable discoveries in medicine, yet they were earnest students of the science, and diligently clutivated the art, as the congressists would see when they visited the clinics of the city. The success of the present Congress was dependent upon the members themselves, and the speaker hoped for great results of their deliberations. Medicine had made great strides since the Madrid Congress, among the most notable discoveries being that of the etiological factors of syphilis and of sleeping sickness, and they might with confidence look forward to discoveries of equal or greater moment in the future. The announcement by Behring at the International Tuberculosis Congress in Paris was full of promise, and one could but hope that his discovery would be productive of good results. The solution of the tuberculosis problem, the speaker believed, was to be found in these international congresses, where the individual workers could compare their experiences and publish their discoveries. In closing, the speaker expressed his thanks for the great honor which he had received in being made president of this international gathering of scientists, and he prayed with all his heart for the success of the meeting.

Dr. Miguel Bombarda, Secretary of the Congress, then presented his report. The number of registered members was 1,818, of whom 145 were from Germany, 221 from France, 124 from England, and 55 from the United States. The program contained the titles of 500 papers on 134 distinct subjects which were to be read in the 20 sections of the Congress.

Then followed brief addresses by the official representatives of all the countries of the civilized world, in which the speakers expressed their pleasure in being able to greet their colleagues from other lands

and uttered wishes for the success of the Congress. Dr. Richardson, speaking for the United States, expressed the friendship of his government for the Royal Couple and its good wishes for the assembled congressists. He then congratulated the Congress on its privilege in meeting in beautiful Portugal, and especially in the attractive city of Lisbon. Success under such distinguished patronage as that of the King and Queen, and surrounded by such auspicious circumstances, could not be doubted. Dr. Posner of Berlin, editor of the *Berliner klinische Wochenschrift,* spoke briefly in the name of the medical press.

In the evening the members of the Congress were entertained at a reception given by Dr. Costa Alemao, the President of the Congress, in the hall of the School of Medicine.

At the general session held on April 21, Dr. Brissaud of Paris delivered a public address on "Infantilism."

News of the Week.

Red Cross Appeal.—The New York State branch of the American Red Cross appeals for financial aid for the sufferers from the famine in Japan, for the victims of the eruption of Vesuvius, and, most urgently, for the homeless citizens of San Francisco. It is stated that the organization of the Red Cross societies is now perfected to such a degree that all of the sums contributed can be devoted in their entirety to the actual relief of the needy without diverting any amounts to cover the expenses of distribution. The society also appeals for members for the New York State branch to contribute a dollar each yearly to establish a great emergency fund. It also desires to enroll members who will be ready to volunteer as physicians, nurses, and field or executive workers in times of crisis. Contributions for either relief fund should be addressed to Jacob H. Schiff, Room 509, No. 500 Fifth avenue, plainly marked "For San Francisco," "For Italy," or "For Japan." These will be duly acknowledged. Applications for membership should be made to William Chauncy Langdon, Room 509, No. 500 Fifth avenue. Yearly membership is $1; life membership, $25. The work in San Francisco will be in charge of Dr. E. T. Devine, secretary of the New York Charity Organization Society, who has been sent to California together with Miss Lucile Eaves, who was for a number of years head worker at Park Settlement of San Francisco, which is in the heart of the stricken district. The charitable are also asked to send food, clothing, etc., to California. All such articles should be sent to the express offices, distinctly labeled, "For the Red Cross Relief, San Francisco, California." The companies will then transport these contributions without charge. Two copies of the invoice should be sent to the office of the New York Red Cross; one will be filed and acknowledged, and the other sent to Dr. Devine.

Death of Professor Curie.—Professor Pierre Curie, the discoverer of radium, was run over and killed in Paris on April 19. Professor Curie was the son of a physician and was born in Paris in 1859. He was educated at the Sorbonne and was given a chair in the School of Chemistry in Paris in 1895. Together with his wife, who was professor of physics in the Sèvres High School, he spent several years investigating uranium and thorium, and in 1898 they were able to announce the discovery of a new and strongly radioactive substance in pitchblende. In 1901 M. Curie received the La Caze prize of 10,000 francs from the French Academy of Sciences, and in 1903 the couple were awarded the Noble prize for chemistry, followed shortly afterwards by the sum of 60,000 francs as part of the Osiris prize of France, all in recognition of their work on radium.

St. Luke's Hospital Alumni.—At the annual dinner of the Society of the Alumni of St. Luke's Hospital, in this city, on April 21, Dr. Lewellys Barker, Professor of Medicine, Johns Hopkins University as guest of honor, delivered an address on "The Duty of Hospitals to Medical Education."

A Course of Lectures on Hydrotherapy is being delivered by Dr. Simon Baruch at the Medical Department of Columbia University in this city. This course of lectures constitutes, we believe, the first special teaching on hydrotherapy in any university in an English-speaking country, although the subject has long been taught from special chairs in the larger universities in Germany and Italy. Dr. Baruch's course marks a distinct advance in practical therapeutic teaching in this country.

Hospital Conference.—At a meeting held in the Academy of Medicine on April 18 representatives of thirty-eight hospitals adopted a permanent organization for the hospital conference of the City of New York. The constitution states that the object of the organization is the prevention of extravagance and waste in hospital maintenance. The following were elected as officers: *President,* the Rev. George F. Clover of St. Luke's; *First Vice-President,* Richard Townley of J. Hood Wright; *Second Vice-President,* Mrs. A. M. Lawton, General Memorial; *Secretary,* Dr. S. S. Goldwater, Mount Sinai; *Treasurer,* A. H. Harrington, New York Eye and Ear Hospital. Any hospital with not less than thirty free beds may send two representatives to the conferences, and circular letters of questions relating to matters of hospital management are to be prepared and sent to the superintendents of a large number of hospitals.

Reduced Mortality Rate in Chicago.—A reduction in the number of infectious diseases reported has been noted, most markedly in Bright's disease, bronchitis, cancer, consumption, and typhoid fever. The mortality from the infectious diseases of childhood—diptheria, scarlet fever, and whooping cough—shows an increase, and the ratio of deaths among the aged, those over 60 years old, still remains abnormally high, although slightly lower than during the week previous.

Honor to Professor Trendelenburg.—In honor of Professor Trendelenburg of Leipzig, the German Medical Society has arranged a special meeting at the Academy of Medicine, on Monday, April 30. Professor Trendelenburg will deliver an address, and several surgeons of this city will present patients. The discussions will be in German and English. A reception was given to Dr. Trendelenburg at Delmonico's on the evening of April 27, by Dr. Willy Meyer.

Positions in the New Fordham Hospital.—The Board of Trustees of Bellevue and Allied Hospitals expect to open a department for out-patients in connection with the new Fordham Hospital, at the west side of Crotonia avenue and Southern Boulevard, opposite the north end of Cambreling avenue, now rapidly approaching completion. Applications for positions in this department will be received by the Board of Trustees, which is desirous of having as wide a field as possible from which to make selection for these positions.

New York State Department of Health Reports.—Ophthalmia neonatorum has been added to the number of diseases to be reported monthly to the State Department of Health by the local health officers. The other diseases on this list are diphtheria, scarlatina, smallpox, typhoid fever, measles, cerebrospinal meningitis, and pulmonary tuberculosis.

Dr. W. P. Spratling of Sonyea, N. Y., owing to unwarranted use that has been made of his name, requests us to announce that he has no connection with any private institution for the care and treatment of epileptics.

Hospital Internes in Chicago.—Fifty-three physicians passed the civil service examination for appointment as internes in the County Hospital and Cook County Institutions, Dunning, Illinois. Forty of this number will be appointed to positions within the next nine months, the first appointments being made at Cook County Hospital in June.

Dr. M. Reichmann of Chicago has been appointed radiographer to the Alexian Brothers' Hospital, of that city.

Commencement Exercises.—At the seventy-sixth annual commencement of the Medical College of the State of South Carolina eight candidates in medicine and twenty-nine in pharmacy were graduated. On April 12 the degree of M.D. was conferred on twenty-six members of the senior class of the University of Arkansas Medical Department, and at its forty-first annual commencement, on April 9, the Alabama Medical College graduated a class of twenty-eight members.

In Honor of Nothnagel.—A statue of the eminent Viennese clinician is to be erected in the court of the university, and a fund is being collected, the revenue from which is to be used as an annual prize to be awarded to the speaker selected each year to deliver a lecture in memory of Nothnagel, in the deceased teacher's lecture room.

Ziegler's Successor.—The Chair of Pathology at the University of Freiburg, which was formerly occupied by Professor Ziegler, was offered to Professor Schmorl, who declined it, however, owing to considerations of health. It was then offered to Professor Aschoff of Marburg, who has accepted it.

Free Alcohol Bill.—On April 17 the free alcohol bill was passed by the House of Representatives by a vote of 224 to 7.

The National Quarantine Bill with amendment was passed by the House of Representatives on April 16.

Florida State Medical Association.—At the annual convention of this society, held at Gainesville on April 18 to 20, the subject of life insurance examinations was taken up and it was decided that no members of the State or county societies would make such examinations, including analysis of the urine, for less than $5.00. Tampa was chosen as the next place of meeting, on the third Wednesday, Thursday, and Friday of April, 1907. The following officers were elected: *President*, Dr. John D. McDiarmid of DeLand; *First Vice-President*, Dr. J. Lawrence of Tampa; *Second Vice-President*, Dr. S. R. Mallory Kennedy of Pensacola; *Third Vice-President*, Dr. J. M. Dell of Gainesville; *Secretary and Treasurer*, Dr. J. D. Fernandez of Jacksonville.

West Virginia State Medical Association.—The thirty-ninth annual meeting of this society will be held at Webster Springs, W. Va., June 20, 21, and 22, 1906. The secretary is Dr. W. W. Golden, Elkins, W. Va.

Tennessee State Medical Association.—At the annual meeting in Memphis on April 12 the election of officers resulted as follows: *President*, Dr. L. A. Yarbrough of Covington; *First Vice-President*, Dr. J. L. Andrews of Memphis; *Second Vice-President*, Dr. Hazle Padgett of Nashville; *Third Vice-President*, Dr. J. R. Rathwell of Chattanooga; *Secretary*, Dr. George H. Price of Nashville; *Treasurer*, Dr. V. C. Bilbro of Murfreesboro.

Hampden District (Mass.) Medical Society.—At the annual meeting of this society, held on April 17, at Springfield, the following officers were elected: *President*, Dr. E. H. Guild of Springfield; *Vice-President*, Dr. D. F. Donoghue of Holyoke; *Secretary and Treasurer*, Dr. F. S. Ward of Springfield.

Tolland County (Conn.) Medical Association.—The following were elected as officers at the 114th annual meeting of this society, held at Rockville on April 17: *President*, Dr. F. W. Walsh of Rockville; *Vice-President*, Dr. T. F. Rockwell; *Clerk*, Dr. T. F. O'Loughlin; *Counselor*, Dr. C. N. Newton of Stafford.

Richardson County (Neb.) Medical Association.—Officers were elected as follows at the annual meeting of this society, held on April 10, at Falls City: *President*, Dr. E. C. Wittwer of Humboldt; *Vice-President*, Dr. J. R. Morris of Humboldt; *Secretary*, Dr. C. T. Burchard of Falls City; *Censor*, Dr. G. G. Gandy of Humboldt; *State Delegate*, Dr. M. L. Wilson of Humboldt.

Brockton (Mass.) Medical Society.—At the annual meeting, on April 13, of this society, officers were elected as follows: *President*, Dr. J. M. Morin; *Vice-President*, Dr. J. H. Lawrence; *Secretary*, Dr. R. A. Elliott; *Treasurer*, Dr. E. E. Goodwin.

Cass County (Ill.) Medical Society.—The Cass County Medical society, at a meeting held in Virginia on April 11, elected the following: *President*, Dr. O. M. Hubbard of Virginia; *Vice-President*, Dr. Darwin Gailey of Ashland; *Secretary*, Dr. J. A. McGee of Virginia; *Treasurer*, Dr. Albert Lyles of Virginia.

Obituary Notes.—Dr. Matthew T. Gaffney of Newark, N. J., died on April 17, at the age of thirty-six years. He was a graduate of the College of Physicians and Surgeons in this city.

Dr. Joseph Hedges of Orange, N. J., died on April 14, after an illness of several weeks. Dr. Hedges was in his seventy-ninth year.

Dr. Louis Mackall of Washington, D. C., died on April 18, at the age of seventy-five years. He was born in Prince George County, Md., and was graduated from Georgetown College and the University of Maryland. He began to practise in Georgetown in 1851 and was prominently identified with the medical societies and hospitals of Washington.

Dr. Ira C. Sawyer of Springvale, Me., died on April 13, of heart failure, at the age of sixty-six years. Dr. Sawyer was born in Hiram, Me., and was graduated from Dartmouth College in 1863. He had practised in Springvale since 1884.

Dr. Stephen E. Wentworth of Auburn, Me., died on April 10, of heart failure, at the age of sixty-nine years. He was born in Limington, Me., in 1837, and was graduated from the Bowdoin Medical School in 1868. He began his professional work in Brownville and Lovell, but had practised in Auburn for the past thirty-two years.

Special Article.

OPPORTUNITIES FOR THE RECENT GRADUATE.

In a short time the various medical colleges throughout the country will be turning out innumerable graduates to swell the ranks of an already overcrowded profession. What is going to become of this new contingent? What are they going to do? In the first place they will learn that the public has not been most anxiously awaiting the display of their shingle; and they will also learn that, generally speaking, in the first years of medical practice leisure time is plentiful and dollars are few. Building up a practice is slow and uphill work, and it is not easy to make a living. Of course, there will be a few who have judiciously selected their parents and their social position in the world; these favored ones will either be taken under the wing of some popular and successful practitioner, or they will leisurely continue their studies and wait for the growth of their practice without having to take any thought as to the earning of a living. In their case this latter is unnecessary. But the ninety and nine who are not so fortunate, what is to become of them? Fortunately, there are various methods which may help some of these along the early years of their chosen career, or even prove to be a permanent means of support. In the first place, the recent graduate may cast his eyes toward the public services, which will furnish him with a living salary from the beginning; but these should be entered only with the idea of making them a life work. The man who enters the Army, the Navy, or the Marine-Hospital Service with the idea of remaining there only a few years and then resigning to enter upon private practice, makes a fatal mistake. The training he receives in these services is not well adapted to fit him for civil practice, and his salary in the early years is hardly more than enough for daily needs, so that it will be practically impossible for him to save a sum sufficient for support during the waiting period. We will say a few words about each of these services in order.

The Army Medical Service.—In order to secure an appointment in the Army Medical Service, it is first necessary for the applicant to be a graduate of a reputable medical college, to be a citizen of the United States, and to be between twenty-two and twenty-nine years of age. He will have to undergo a thorough physical examination; he must be not less than five feet four inches in height, of well-developed physique, and of dignified bearing; he must labor under no mental or physical infirmity which will interfere with the efficient performance of any duty that may be assigned to him. Slight errors of refraction when not accompanied by ocular disease and when capable of correction by glasses, are not cause for rejection. Permission to appear before the Army Medical Board must be obtained by letter to the Secretary of War. The letter must be in the handwriting of the applicant, must give the place and date of birth, his permanent residence, and two certified letters from reputable persons as to his citizenship, habits, and character. A personal investigation of his antecedents, morals, etc., is made by Army Officers acting under instructions from higher authorities. After the applicant has passed a satisfactory examination before the Army Medical Board, and has been recommended by the Surgeon-General, he is eligible. The appointments are made by the President. The professional examination is both oral and written; it includes anatomy, physiology, chemistry, hygiene, pathology, bacteriology, therapeutics, materia medica, surgery, practice, obstetrics, and the diseases of women and children. The papers require about a half day each, that is about two hours writing and half hour oral, and are free from catch questions. The applicant must then pass a satisfactory examination in clinical work and operations on the cadaver. He must also present evidence that he has had one year's hospital experience, or its equivalent in practice. The first appointment entitles the physician to the grade of Assistant Surgeon with the rank of first lieutenant, and a salary of $1,600 per annum. At the end of five years he is promoted to Captain, and receives $2,000 a year, which, with a 10 per cent. service increase is $2,200. After ten years' service, this pay becomes $2,400 per annum. The pay attached to the grade of Major is $2,500 per annum, with 10 per cent. added for each five years of service. Lieutenant-colonel receives $4,000; Colonel, $4,500; and Brigadier-general $5,500. In addition to the above amounts, all officers on duty outside the United States receive a further increase of 10 per cent. on their pay, while so serving. Officers are also furnished either with comfortable quarters, or liberal money allowance in lieu thereof. When traveling on duty, they are allowed mileage at seven cents a mile; they are also entitled to transportation for professional books and papers, and for a reasonable amount of baggage; forage, stabling, and transportation for two horses are also provided. Books, instruments, and appliances for use in the performance of their duties are furnished by the Government. Groceries, fuel, etc., are furnished from the Commissary at wholesale prices. A fixed home is out of the question; the Army Surgeon must move about as the needs of the service require. The social side of army life forms a most pleasant feature of military service; the popularity of the surgeon will depend largely upon his own attributes and personality. Leave of absence on full pay is allowed for one month every year, and this may accumulate to four months as a continuous leave. This leave may be lengthened, by permission, with half pay. Medical officers are entitled to the privilege of retirement at any time for disability incurred in the line of duty, or after forty years' service. On attaining the age of sixty-four years, they are placed on the retired list by operation of law. Retired officers receive three-fourths the amount of their pay in effect at the time of their retirement; a sufficient income being thus provided for support in case of disability contracted in the service or for old age. In the case of a medical officer retired as a colonel, his retired pay would thus amount to $3,375 annually—which would be a fair interest on $75,000, or a greater sum than the average physician in civil life could hope to amass in a long life of professional activity. In case of death due to causes incident to the service, a pension is granted to the dependent members of the deceased officer's family. This pension in the case of an officer of the rank of lieutenant-colonel amounts to $360 annually, with $24 for each minor child. This sum, though small, is about the interest on a life insurance policy of $9,000. The army surgeon is offered every opportunity to win a name in medical science. While his work is restricted in some of the branches, he has ample opportunities in the surgical field, in the study of tropical diseases, and in experimental research work. The authorities are always willing to furnish any special apparatus, laboratory

appliances, etc., to those who give promise of being a credit to their profession. Examinations for the Army Medical Service are held in Washington, San Francisco, and Manila. No political influence is either necessary or desirable, as the appointments are made entirely upon merit. We understand that there are at present twenty-five vacancies in the medical corps of the army.

The Naval Medical Service.—The bureau system of the Navy Department was not inaugurated until 1842, and it was at that late date that the corps arrived at the dignity of having a medical officer at its head. From that time to this it has gradually developed; the corps now consisting of about two hundred and twenty members, with provision of law enacted to bring the number up to three hundred and forty-seven by 1909.

The following table shows the grades, rank, and number in each grade of the corps as it will be at the end of 1908 under the present legal provisions:

NUMBER	GRADE	RANK	EQUIVALENT ARMY RANK
15	Medical director	Captain	Colonel
15	Medical inspector	Commander	Lieutenant-colonel
85	Surgeon	Lieutenant-com'd'r	Major
230	Passed assistant surgeon and assistant surgeon	Lieutenant	Captain
		Lieutenant, junior	First lieutenant

In addition to the above a list of twenty-five acting assistant surgeons forms part of the medical corps; these are employed for temporary service only, for a term of three years. The highest official honor to which a naval medical officer can aspire is that of surgeon-general and chief of the bureau of medicine and surgery, and he holds the rank of rear-admiral while in office. The appointment is made by the President, and is good for a period of four years. Physicians desiring to enter the service must make application by letter to the Secretary of the Navy. They must present one or more certified letters from citizens as to their moral character, they must be between twenty-one and thirty years of age, and citizens of the United States. The applicant has to undergo a thorough physical examination; errors of refraction, when correctable, are not cause for rejection. The professional examination is both oral and written; a grade of 80 per cent. has to be obtained in each of the following subjects: Anatomy, physiology, surgery, medicine, materia medica, and therapeutics; 70 per cent in pathology and microscopy and 60 per cent. in chemistry and physics, obstetrics, and jurisprudence. Besides the written examination, there are practical tests in the application of bandages and splints, operative work on the cadaver, etc. The preliminary requirements are those which every physician should possess. The board of examiners is practically in continuous session; the examinations are held in Washington, D. C., and at the U. S. Naval Hospital, Mare's Island, Cal. The following table shows the remuneration:

	AT SEA	ON SHORE*	ALLOWANCES PER ANNUM*
Assistant surgeons, rank of lieutenant (junior grade)	$1,760.00	$1,496.00	$288.00
Passed assistant surgeons, rank of lieutenant	2,200.00	1,870.00	432.00
After five years in the service	2,400.00	2,040.00	432.00
After ten years in the service	2,600.00	2,210.00	432.00
Surgeons, rank of lieut.-commander.			
After ten years in the service	3,250.00	2,762.50	576.00
After fifteen years in the service.	3,500.00	2,975.00	576.00
Medical inspectors, rank of comm'd'r:			
After fifteen years in the service.	4,000.00	3,400.00	576.00
Medical directors, rank of captain:			
After fifteen years in the service.	4,500.00	3,825.00	720.00
Surgeon-general, rank of rear-adm'al.	5,500.00	5,500.00	720.00

Only when quarters are not furnished by the Government.
*Eight cents per mile is the allowance when traveling under orders.

All officers are retired from active service at the age of sixty-two years, on three-fourths of the full sea pay of their grade; so, too, any officers becoming incapacitated during service are entitled to three-fourths full pay. Assistant surgeons are promoted at the end of three years' service to the grade of passed assistant; the higher offices are obtained by examination, and in the order of seniority. After acceptance, the young officer is ordered to one of the fourteen naval hospitals, where he undergoes a five months' post-graduate course along special lines to fit him for his work; he is then assigned to sea duty. The vessels usually carry from seven hundred to eight hundred men, the modern vessels are fitted with hospital quarters, isolation quarters, laboratory, and the most recent books and instruments; and the young officer is encouraged to pursue research work. Frequently he is detailed for duty at one of the stations abroad. The duties of the medical officer become more responsible as his rank increases; from the small vessel he is promoted to a larger one until he reaches the grade of medical inspector, when he has charge of a fleet, or of one of the large navy yards. As medical director his duties are confined to shore service, either in one of the larger hospitals, as a member of some important board, or as instructor in the naval medical school. The young man about to enter upon a naval career must not lose sight of the fact that the home is practically lost; he must be willing to live in a contracted space and in unwholesome parts of the world. If he has strong domestic tastes he should not enter the service, for, as age creeps on these discomforts weigh heavily; and to such a one it is doubtful if the pleasures incident to the life are sufficient to counterbalance the discomforts.

The Public Health and Marine-Hospital Service.—This is a bureau of the Treasury Department. There are many duties connected with the department, among them the management and suppression of epidemics, inspection of immigrants, investigation of sanitary problems, conducting quarantine stations, the inspection of all establishments manufacturing viruses, serums, toxins, and analogous products, and the maintenance of the Sanatorium for consumptives at Fort Stanton, New Mexico. In short, the Public Health and Marine-Hospital Service acts as a national board of health. To enter the service the candidate must be a citizen, between twenty-two and thirty years of age, and a graduate of a reputable medical college. He must pass a satisfactory physical examination, and give evidence in an oral and written examination of a thorough knowledge of the academic branches. He is required to pass a written examination in anatomy, physiology, chemistry, materia medica, practice, surgery, obstetrics and diseases of women, hygiene, pathology, and bacteriology. He may also be called upon for operative work upon the cadaver, microscopical work, and bandaging. An average of 80 per cent. is required; the applicant failing is entitled to a second, but not to a third trial. Having passed successfully, the applicant is commissioned by the President, by and with the advice and consent of the senate, as an assistant surgeon with salary of $1,600 per annum. After five years' satisfactory service he is examined for promotion to the grade of passed assistant surgeon with compensation of $2,000. The higher offices are filled by examination when a vacancy occurs. All officers in the service above the rank of assistant surgeon receive 10 per cent. increase of their annual salary after each five years of ser-

vice. Comfortable quarters are provided in almost all the quarantine and hospital stations. Where no quarters are provided officers receive commutation as follows:

	AT HOME	ABROAD
Assistant surgeons	$30 per month	$80 per month
Passed assistant surgeons	$40 " "	$85 " "
Surgeons	$50 " "	$90 " "

Five dollars a day is allowed medical officers for traveling expenses and hotel bills, when traveling under orders. Officers and their families are entitled to medical supplies. Thirty days leave of absence are allowed each year, or the leave may be allowed to accumulate till four months may be had with full pay. Officers stationed on shore may conduct a private practice provided it in nowise conflicts with their government duties. The service consists of a hundred and eight commissioned medical officers. The medical officers have rare opportunities to study strange and unusual affections unknown in our climate, and also have vast opportunities in a surgical line. The younger officers of the service are detailed to the hygienic laboratory at Washington for a post-graduate course in pathology, bacteriology, and various branches of sanitary science. The service offers many opportunities for seeing the world, as hospitals are conducted in the Philippines, Porto Rico, and Hawaii; three officers are stationed in Japan, two in China, ten in Cuba, besides many at other ports in Europe and elsewhere.

We repeat that a man who enters either of these services should do so with the expectation of making it his life work. Therefore it would be well for intending applicants to cultivate the acquaintance of some one who is actively engaged in the service to which he aspires, and to gain some inside information with regard to expenses, quarters, comradeship, society, and many other things that are of real importance, but which do not generally figure on official notices.

In addition to the public services just mentioned there are opportunities which may offer a temporary assistance, and as such be of great value in enabling the young physician to live while his practice is growing. The various municipal appointments would fall under this head; and before going into any detail with regard to these, it should be emphatically understood that in order to succeed in general practice these various helps must be dropped at the earliest possible moment. In this they differ *in toto* from the public services.

The applicant usually turns first to the municipal **Health Department.** In large cities there is often room here for many men. Take New York City for example; upward of two hundred and forty physicians are on salary; and in addition, numerous temporary appointments are made as occasion and emergency require. The positions offering constant employment to physicians, with the yearly salaries attached, are as follows: A general medical officer, $5,000; a sanitary superintendent, $5,000; five assistant sanitary superintendents, $3,500; two chief inspectors of contagious diseases, $3,000 and $2,500; one assistant chief inspector of contagious diseases, $2,550; fourteen diagnosticians, $1,200 to $1,800; 170 medical inspectors, $1,200 to $1,800; fifty-two sanitary inspectors (one-half of these may be physicians), $750 to $1,800; one superintendent of hospitals, $2,500; three hospital physicians, $1,800; three assistant hospital physicians, $1,200; one registrar of records, $4,000; four assistant registrars of records, $3,000; one assistant director of the bacteriological laboratories, $2,110; one assistant director of the vaccine laboratory, $1,800; one assistant director of the diagnosis laboratory, $1,800; twelve assistant bacteriologists, $1,200. As stated, temporary appointments may be made in any of the divisions, physicians thus appointed drawing salary for the term of employment at the same ratio that the permanent employees in similar positions receive. All positions except the first four named are competitive and come under the civil service law. In order to be placed upon the eligible list for the above positions the candidate must make 75 per cent. on the technical paper, those making the highest percentage being placed on the eligible list. In making the appointment three names from the top of the list are submitted by the civil service commission to the appointing power. One is chosen, and the remaining two names are replaced on the list in the position they originally held. All applicants must be registered physicians in the city of New York, and should be specially qualified in reference to contagious diseases and sanitary science. Those applying for positions in the bacteriological department should have had laboratory training. Similar rules prevail regarding the health departments in other cities.

Duties of the Medical Inspector.—He is assigned a district, and receives daily notification from the chief inspector concerning the location of all contagious cases reported therein, and it is his duty to visit these patients within twenty-four hours after receiving notification, and to enforce the rules of the department relative thereto. He must revisit the patient at frequent intervals to see that the regulations are being adhered to; and, at the conclusion of the case he arranges for the disinfection of the premises, and the return to school of the children who have been detained therefrom. It is the duty of the school inspectors to visit their schools daily, and to examine the pupils carefully for any evidence of contagious diseases, eye diseases, and skin diseases, and to exclude at once those who give evidence of them.

Vaccination.—The inspector is given a district which he is supposed to canvass daily, he should report at least one hundred cases per week. In case of epidemics he does special work in any part of the city to which he may be ordered. It is also the duty of the medical inspectors to visit the sick of the tenement house districts and to investigate citizens' complaints regarding the violation of sanitary ordinances. They are supposed to devote eight hours a day to the work. *Diagnosticians* make the official diagnosis for the department. They have their districts and are sent to every case reported therein in which removal to the contagious disease hospital is requested or necessary. They also discharge the patients from the department hospitals at the expiration of their sickness. *The superintendent of hospitals* has charge of the business end of the department hospitals and is the immediate superior of the hospital physician and his assistant, whose duties are similar to those of the ordinary resident physicians in any general hospital. *The registrar of records* and his assistants have entire charge of the vital statistics of the department and the reception and granting of death certificates, burial permits, etc. The three *assistant directors of the bacteriological laboratories* superintend the work of the research, vaccine, and diagnosis laboratories

respectively, and the assistant bacteriologists are assigned to work in either of these three divisions. The work in the *research laboratory* comprises the manufacture of the various antitoxins prepared by the department and also research along such lines as may be suggested by the assistant director in charge. The work in the *vaccine laboratory* is limited to the production of vaccine. The *diagnosis laboratory* deals with the examination of diphtheria cultures, Widal tests, examinations for the malarial organism, and such other bacteriological diagnostic work as may be required by the assistant director in charge. With respect to the time required for the satisfactory performance of the duties of any of these positions, it may be said that the sanitary superintendent, the chief and assistant chief inspector of contagious diseases, the registrar and his assistants, the superintendent of hospitals, together with the hospital physician and his assistant, the assistant directors of the bacteriological laboratories and the assistant bacteriologists, with the exception of those employed in the diagnosis laboratory, are forced to give their entire time to the service of the department, at least to the extent of eight hours per day. The time required in the other positions is extremely variable, and depends largely upon the time of year and many contingent circumstances. In general it may be said that it varies from three to eight hours per day. The work of diagnostician, medical inspector, and medical sanitary inspector does not prevent the holders of such positions from practising medicine, nor does it materially interfere with a limited carrying out of the same. Positions most suitable for new appointees are those of medical inspector, medical sanitary inspector, assistant bacteriologist, and hospital or assistant hospital physicians. For appointment to any of the other positions previous experience in the workings of the department is necessary.

The Street Cleaning Department.—There are only three salaried positions open to medical men in the New York City street-cleaning department. The salary of these examiners is $1,200 per year, and from two to three hours daily work is required. It is their duty to visit sick members of the force, and to report as to the probable duration of the illness; also to examine the uniformed members of the force with respect to their ability to perform various duties. They are civil-service positions.

Tenement House Commission.—Two or three physicians are employed in this department in New York at a salary of $1,200 yearly, from four to eight hours' work a day being required. Their duties consist essentially in a supervision of the execution of the sanitary code relating to tenement houses.

In The Department of Public Charities and Correction, the physician's entire time is expected, as the billets are mainly hospital positions paying from $500 to $1,500 a year. There is also the position of visiting physician to the city jails and penitentiaries at a salary of $1,000 to $2,000 yearly, and requiring about four hours' time.

Quarantine and Immigration Service.—In all seaports there is a health officer of the port appointed by the Governor of the State. The health officer appoints as many deputies as are necessary, and it is the duty of one of these deputies to act as house physician to the quarantine hospital, while the other deputies board incoming vessels and examine the passengers and crew. In New York the deputies receive $3,000 per year.

In the Immigration Bureau the positions come under the government civil service, and the appointments are made by the surgeon-general of the Public Health and Marine-Hospital Service. The salary is from $1,200 to $2,500 per year and the deputies are expected to devote all of their time to the work. It is their duty to examine every person arriving at the port, and to detain all suspicious cases. In the event of contagious diseases breaking out, the patients are conveyed to the Hospital for Contagious Diseases.

Corporations and Business Houses.—In recent years manufacturing concerns, street railway corporations, and the department stores have been employing physicians. These positions are obtained through personal influence. In the last-named capacity the salary is small, not more than $1,200 yearly and most of the day is occupied at the store. The street railways pay from $1,200 to $2,000; and the work can usually be accomplished in from three to four hours daily. The physician is called upon to examine and give medical service to any person injured in any way by vehicles of the corporation; and to examine such persons as the company may desire with a view to giving expert testimony in the event of a lawsuit.

Physicians to manufacturing concerns are supposed to treat any employe injured in the discharge of duty. The salary is from $500 to $1,200.

The Race Track.—Physicians are employed by the different jockey clubs to be present at the races and render services to the jockeys or other employees who may be injured. The salary is $100 per month during the season.

Medical Literary Work.—In order to obtain employment here the physician must have special ability; there is a wide range of work extending from proof reading or reading of manuscripts to the editorship of a medical periodical. The recent graduate may as well be warned, however, that there is no demand for translation of books. Much of the journalistic work is paid for by the piece; but occasionally salaries are paid, varying from $300 or less, to several thousands a year. This is pleasant occupation in that, in general, one is not bound by regular hours, and it further compels a man to keep in touch with the most recent advances in medicine. It calls, however, for ability of a peculiar character, and in certain emergencies the work is very exacting. The opportunities for such work are few.

Detailing.—Oftentimes an energetic and tactful man will have no difficulty in securing a position with one of the proprietary drug companies, wholesale drug houses, medical book firms, or instrument makers. The work in either of the first two instances is practically the same. The physician is assigned a territory; he then obtains a list of those whom he seeks to interview and interest. The detailer, in order to be successful, must cultivate courtesy and patience; he may often find it necessary to call three or four times at the same office before obtaining an interview. Salaries may vary from $50 to $125 a month, with expenses; physicians are expected to pay a certain number of visits a day, and to send in reports at specified times. The representatives of the book firms and instrument makers carry samples of their goods with them, and solicit orders for the same. They sometimes obtain a stated salary; but as a rule they are assigned a territory, their expenses are paid, and they receive a commission on the sales. The detailers and

agents find the work pleasant and fairly remunerative. It gives the young physician an excellent opportunity to study the manners and customs of the different professional men with whom he comes in contact, besides enabling him to watch for a good location without any personal expense. As soon as the latter is found, he should avail himself of it; for while the work is easy and pleasant, it becomes monotonous sooner or later.

Lodge Practice.—In the last two decades it has become an almost universal custom in all concerns employing very many people to form a beneficiary association. The members are taxed from one to two dollars a year; this sum is paid over to some physician who contracts to care for all the members. In some cases he also attends the families of the members for one-half his usual rate. This system has many disadvantages, and cannot be recommended; still there are always applicants for the positions.

We come now to the last class, namely those appointments which offer a more or less permanent supplement to the income from private practice, such as appointments as insurance examiners, railway surgeons, surgeons to the police and fire departments in the larger cities, etc.

The Insurance Examiner.—There is a good field in this line for conscientious physicians; but unless a man be possessed of considerable patience and tact he will not be successful here. He must be able to gain the respect and confidence of the applicant for examination, he must remain on friendly terms with the agent, but he must at the same time not lose sight of the fact that upon the faithful and intelligent performance of his duties depends the protection of the interest of millions of beneficiaries. In appointing physicians the companies invariably give the preference to energetic, educated, tactful men, preferably those who have had hospital training or at least some experience. In the smaller towns where physicians are less numerous the same examiner may be in the employ of more than one company; the same condition also prevails in some of the larger cities. The remuneration varies according to the company. Some of the larger companies in New York City start their examiners on a salary of $1,000 per annum. He is expected to devote two hours daily in the Home Office, besides making two or three outdoor examinations. By systematically arranging his hours there is no reason why his private practice need be neglected. At the same time the physician is under no extra expense; he is brought in contact with people who may be favorably impressed, and he thus may possibly add to his private practice; and the fact that a large company has confidence in his ability carries with it a certain amount of prestige. Recently the larger companies have made a change in the matter of fees. Formerly the uniform fee for an examination was $5, but now the fee paid is graded according to the size of the policy which the applicant purposes taking out. When the amount of insurance is $3,000 or less the fee for examination is $3, and from this figure it rises up to $10 in proportion to the amount of insurance. The smaller companies and Fraternal Orders retain the uniform fee system, which is about $3 in each case whether the applicant is accepted or not, and without reference to the amount of insurance. The examiner may occasionally occur the displeasure of some rejected applicant or disappointed agent; therefore it is best when making an examination to avoid all controversies and unkind criticisms; bitter animosities lasting for years have sprung up in this manner. Most companies furnish the examiner with special forms upon which he may freely express his opinion as regards the applicant; and this information is treated confidentially by the company. The custom prevails in some of the larger companies to train a limited number of physicians in the Home Office for two or three months; these fully equipped examiners are then given important posts at distant points. The salary while in training is about $100 per month.

The Railway Surgeon.—The young physician wishing to enter the service of a railroad as one of its surgeons, had better cultivate the acquaintance of some railroad manager, prominent director, or chief surgeon. However, oftentimes his presence in time of need, and again merely a formal application by letter to the president, manager, or chief surgeon, stating his qualifications, may secure the appointment. As a rule the medical department of a railway is presided over by a surgeon-in-chief, who possesses the power to appoint assistants. These assistants assume responsibility of their divisions, and in turn have assistants who do the work and are known as company surgeons. Other leading railroads employ no chief surgeon, but simply appoint surgeons at different points along the line. Men of large experience always get the preference. A specialist is usually employed to examine the sight and hearing of all applicants for employment. It is the duty of the local surgeon to report at the scene of an accident as soon as notified; if he cannot go, he should send a substitute at once. Immediately after caring for the injured he should forward a report to the surgeon-in-chief, stating the nature of the injuries and the treatment adopted. A number of railroads arrange with hospitals along the line to receive their injured. In this line of work the salary is usually small, but the surgeon has an opportunity to increase his practice by obtaining patients in the families of the employees, and he has great advantages in surgical work. He and his immediate family are provided with a free pass over the road. Some railroads are supplied with a hospital car containing equipment for all emergencies. Owing to the great mass of humanity traveling in the day coaches and sleeping trains, the cars furnish an excellent nidus for the propagation of germs; and a fight should be made against the velvet upholstered seats and the draperies, particularly in the cars carrying the great number of tuberculous patients to northern New York, Colorado, and in the Florida specials.

The Police and Fire Departments.—The opportunities here are limited, as in this city not more than forty surgeons are allowed for the Police service at a salary of $3,000 per year, and only six for the Fire Department at $2,000 per year. The tenure of office is for life, unless discharged for neglect of duty. These positions are much sought after, and they come under the rules of the Civil Service, but the appointment is largely a matter of political influence. The amount of time required of the surgeon varies, but a fair average would be two or three hours a day. The physicians are expected to treat all uniformed officers of the force in their respective districts free of charge, but not their families. However, as they are often called upon to do so, and charge whatever they see fit for their

services, they add considerably to the income. While these positions are very desirable, it must be understood that they are practically not obtainable, in New York City, at least, by recent graduates in medicine, as the vacancies created are extremely few and the requirements are such that successful applicants are almost always men who have had considerable experience in the practice of medicine.

There is no more pleasant employment for the young man just after four years of hard work in college, or for the older practitioner, run down in health or tired of the uphill struggle, than a short term of service at sea. The travel and study of the many phases of human nature which are continuously presented must act as a great educator. The candidate for such a berth should secure if possible an introduction to the general manager of the company in which he wishes to serve. If this cannot be arranged, let him write a letter stating his qualifications, and then after a few days call personally to present his case. Persistence is the most important requisite; weekly visits to the general manager's office call that official's attention to the fact that the surgeon is awaiting an opportunity to serve the company. While waiting for an appointment the candidate should cultivate the acquaintance of the ship doctors; as a rule they are an affable set of men, and will give necessary information and advice. In this way he becomes conversant with the ways of the service, and may find an opportunity to substitute for one of the doctors. The candidate should be prepared to embark upon the shortest notice. The freight steamers, known as "tramps," are perhaps the most desirable for seeing the world, as they often visit several different countries. The Elder Dempster S. S. Co., with general offices at 21 Water Street, Liverpool, England, are the largest owners of steamships of this type. The ship doctor must be a graduate of a reputable medical college, and a man capable of conducting himself with dignity. It is compulsory on all vessels sailing between England and her colonies for the doctor to carry an English registry when the number of persons on board exceed one hundred. A few of the Transatlantic liners and most of the large ships sailing from New York to southern ports carry American physicians. The salary varies with the company, but may be said to range between $30.00 and $50.00, with a percentage on the sale of steerage tickets. Passengers requiring the services of the surgeon may compensate him as they see fit; on the large liners he may safely average between $50.00 and $200.00 a trip during the busy season. In the freight service the salary is from $20.00 to $35.00 per month. The doctor is supposed to pay for his laundry, also for his table and bedroom steward's services, likewise for wine and cigars. The ship doctor is at times called upon by the Captain to decide as to the advisability of placing one of the passengers or crew in confinement for misbehavior. The most careful judgment is necessary, as lawsuits may follow such proceedings. Again, it has been the duty of the ship doctor to have to order the captain to be subdued and restrained during an attack of mania. He should protect himself by procuring in writing the corroboration of the officers, crew, and passengers. In his treatment of the passengers he should exercise tact; in the event of an injury or the like, he can oftentimes procure a written statement from the patient expressing satisfaction with the treatment received; this statement will afterwards act as a deterrent when thoughts of securing legal redress occur to the patient. With regard to the steerage passengers, the doctor must vaccinate every one of them before they will be allowed to land. It is his duty also to examine each one of them as they board the ship so as to prevent epidemics, and he should also see to the sanitary conditions of their quarters. With regard to the crew, he is supposed to care for the sick and injured; but when a sailor becomes incapacitated for the proper performance of his duties through alcoholic or venereal excesses, it becomes his duty to report the matter to the company. The hospital facilities are necessarily very cramped; passengers are usually kept in their own berths. In time of need passengers may be transferred to passing steamers, or hospital supplies be obtained from them. The company demands a report from the ship surgeon of his work. On entering a port he must hand the quarantime officer a signed report on the health of the passengers and crew; and in the event of any deaths during the voyage he must report the same.

Finally, the recent graduate must remember that the necessity for work does not cease with graduation; he must keep in constant touch with the progress of his science. This is done in two ways, namely by the regular reading of a progressive medical journal and by occasional post-graduate study either in the larger cities of this country or abroad.

Correspondence.

THIRD ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(From Our Special Correspondent.)

INFECTION WITH THE GAS BACILLUS—EMBOLISM AND THROMBOSIS IN THE MESENTERY—ETIOLOGICAL FACTORS OF GONORRHEAL ARTHRITIS—SURGERY AMONG THE CHINESE—SURGERY IN THE PHILIPPINES—THE BLOOD IN DENGUE—TROPICAL SPLENOMEGALY—DISCOVERY OF OPISTHORCHIS SINENSIS IN THE PHILIPPINES.

MANILA, P. I., March 2, 1906.

THE second session of the third annual meeting of the Philippine Islands Medical Association was held at 3 P. M. at the Bureau of Science.

The first paper read was entitled "Two Cases of Infection with a Gas-forming Bacillus, Followed by an Operation and Recovery," by R. C. Loving, M.D., Assistant Surgeon U. S. Army. This was a report of two cases infected with the gas bacillus of Welch, and probably these are the first cases that have been reported in the Philippine Islands. The laboratory work was done at the laboratory of the Army Division Hospital, by Assistant Surgeon Bloomburgh.

The next paper, entitled "Mesenteric Embolism and Thrombosis, with Report of a Case," by Major W. P. Kendall, Medical Department, U. S. Army. The interesting feature in this case was the fact that it was probably caused by traumatism. A soldier, age 21, well developed, apparently a healthy man, admitted to hospital May 21, 1905, 4:45 P. M.; family history negative. Two days before being admitted to the hospital he rode a bucking horse. While he was not thrown, he was badly shaken up. He was restless during the day, but suffered no marked pain, but during the night, twelve hours later, gradually grew worse. The pain localized itself in the right umbilical region. He did not apply for admission to the hospital until two days had elapsed. He complained of constipation, and bowels had not moved during preceding two days. Pulse, 88; respiration, 27; face wore an anxious expression. Physical examination disclosed rigidity of right rectus muscle, with tenderness about one inch inside of McBurney's point. Examination, however, was unsatisfactory, owing to tenderness. The case was operated on for appendicitis on the second day after admission. On opening the peritoneal sac a slightly blood-stained serum exuded, but no gas was noted. The coils of the intestines were apparently not matted together. The appendix was slightly congested and swollen. While it was not thought to be sufficiently in-

volved to account for the condition, yet it was amputated. Further examination revealed that the coats of the ileum were thickened, forming a tumor which rsembled an intussusception. The abdomen was then closed, but instead of improving the patient's condition grew worse, consequently, as a last resort, the abdomen was opened the next morning, through the original incision, and the tumor, together with the caput coli, about eighteen inches in all, were removed and the abdomen was then closed. Death followed, however, in twelve hours. Examination of the exected portions showed a tumor of the lower end of the ileum which was formed by all the coats of the gut; cylindrical in shape, well defined, mahogany color, and about seven inches in length. The mucous coat, over an area of about three inches, was found studded with small confluent ulcers, but showed no signs of perforation. The finding of an embolus was not reported.

The next paper was entitled "Etiological Factors of Gonorrheal Arthritis," by H. W. Smith, M.D., of the Medical Department of the U. S. Navy. The conclusions drawn by the paper were: (1) That vesiculitis is probably not often the focus of absorption from which arthritis arises. (2) Arthritis in the male is probably due to ulcers in the posterior urethra, from which systemic infection is made possible. (3) In the female, the failure of arthritis to develop when the infection is limited to the external genitals, makes it probable that in them absorption is over an area homologous to the deep urethra of the male. (4) Rarely, other sources must be allowed in both sexes.

The next paper was entitled "Surgery Among the Chinese," by Dr. Tee Han Kee. He stated that it was only the strictly Chinese art of surgery that he proposed to discuss, and he would not attempt to touch upon modern medicine and surgery. He said that the notions of the Chinese with regard to anatomy and physiology were absurd, and this was brought about by the fact that it was considered inhuman to open a dead body, or offer it up for dissection. He said it was believed that the heart was attached to the trachea, and contained more air than blood; that the lungs were believed to control the sense of smell. He said it would appear that they knew something of wound infection, though it was empirical; that even three thousand years ago surgeons always boiled their instruments and washed wounds only with boiled water. General and local anesthesia, according to the Chinese writings, was practised five thousand years ago. That operations were rarely performed, except the extraction of foreign substances from the body, the scraping of necrotic bones, and the puncturing of abscesses, although trephining of the skull had been done several times. He stated that diagnoses were made from inspection, as follows: The forehead represented the heart, and when it was red it indicated there was acute endocarditis; that the nose represented the spleen, and when it was yellow, malaria was present; the left cheek represented the liver, and when greenish, it indicated a diseased state of that organ; the right cheek represented the lungs, and when this was colorless, the person was said to have tuberculosis. The symptoms and signs of fractures given are practically the same as they are written to-day in modern text-books. For extracting a fish bone from the throat, the saliva of a dog was used, which had been taken while the dog was hung upside down, the theory being that, dogs being able to digest bones, it was thought that the saliva had a beneficial effect. When a patient was found with a snake coiled around his body, with no tendency to loosen, the patient was advised to roll on the ground until the snake became tired and loosened itself. For hemorrhages, the wound was usually tamponed with tobacco or cauterized with hot irons; in perforations of the abdominal walls the wound was washed with boiled vinegar. He concluded his paper by stating that Chinese surgery was empirical and superstitious, and not at all scientific, but that a gradual change was taking place, and he believed that in a few years China would be one of the centers for scientific research.

The next paper was by Dr. John R. McDill, on "Observations on Surgical Diseases, and Surgery in the Philippines." Dr. McDill stated that the observations made in his paper were principally based upon his experiences of the past year at the Saint Paul's Hospital which had given more opportunities for observing some of the major surgical diseases among the Filipinos than had heretofore been the case. The number of cases of cancer coming under observation was much larger than generally supposed, although scirrhus of the breast was apparently very rare. It was also rare to find hernias among Filipinos. He stated, as a rule the native stood surgical operations very well, taking anesthetics without trouble, and rarely ever suffering from shock. He attributed this favorable condition to their abstemiousness. He gave, in detail, his favorite method of entering the abdominal cavity for liver abscess. He stated that a sufficient portion of the lower ribs on the mid auxiliary line were resected, to give free access to the liver, and stated that, although the danger of collapse of the lung was to be feared, yet, if the operation was carefully done, it is not a very serious matter.

The next paper, entitled "A Study of the Blood in Dengue Fever, with Particular Reference to the Differential Count of the Leucocytes, and the Diagnosis of this Disease," was read by Dr. E. R. Stitt, Surgeon, U. S. Navy. He stated with regard to the micrococcus being the cause of dengue, as claimed by two investigators, in 1885 and 1897, that he was unable to give any evidence. The matter, however, had been investigated by the Bureau of Government Laboratories in the Philippines, in 1902, with negative results. The claims of Dr. Eberle, made in 1904, that he found in dengue a plasmebic organism which was more minute and more active than the malaria parasite, he did not consider well founded. The fact that he claimed the most satisfactory results in staining with weak eosin and methylene blue, would indicate that with thin preparations its discovery should be of little difficulty. The statement that he found phagocytes literally swarming with the minute organisms of dengue, and from an examination of his diagrams, leads Dr. Stitt to question whether he might not have been observing an aggregation of blood platelets. Dr. Stitt stated that in many of the films stained by him by Wright's method, he observed masses of blood platelets, from which such diagrams could have been made. Dr. Stitt was of the opinion that the most characteristic blood findings of dengue are the following (1) Absence of protozoa; (2) leucopenia; (3) diminution of the polymorphonuclears; (4) a striking variation in the percentage of other leucocytes at various periods of the disease, there being at first a great increase in the small lymphocytes, and then a greater proportion of large lymphocytes, and in the final stages, at the time of the terminal rash, and during convalescence, a most striking increase in the mononuclears.

The next paper was on "Tropical Febrile Splenomegaly," by Dr. P. G. Woolley, Director of the Serum Laboratory of the Bureau of Science. He stated that tropical splenomegaly was characterized chiefly by splenic hypertrophy, emaciation, irregular temperature which is uninfluenced by quinine, and certain intestinal symptoms as diarrhea or dysentery, without the presence of amebas. Such cases have been reported from various parts of India, Egypt, China, Tunis, Algiers, Arabia, and the Philippine Islands. He stated the peculiar parasite had been described first by Leishman, in a case at Dum Dum, in India, and later by other investigators. The parasites, when present, were found in large numbers, and are usually obtained by puncture of the spleen, and in fresh preparations are difficult to distinguish, but they may be differentiated from bacilli by their greater refraction. They are best stained by the Romanowsky method, are usually circular or oval in form, often have a cockleshell appearance, and usually show chromatin masses, the larger ones staining faintly and the smaller ones taking an intense stain. They have also been observed in the liver, mesenteric lymph glands, bone marrow, kidneys, and the skin lesions of the disease known as oriental sore. Dr. Woolley reported a case, and stated it occurred at the Saint Paul's Hospital, and that the patient died after a month's illness. The organisms found, both ante-mortem and post-mortem, were small bacilli. A culture was injected into a monkey, with negative results. In conclusion, the author stated that after studying seven cases he was of the opinion that the infection must be due to the Leishman body, but that it would be necessary to search for further etiological data before we could understand and satisfactorily classify the whole group of cases as characterized by the gross features of kala azar.

The last paper read was entitled "The Occurrence of *Opisthorchis sinensis* in the Philippine Islands, with a Demonstration of the Parasite," by Dr. Wm. J. Mallory, the Physician in Charge of the Benguet Sanitarium. The parasite was discovered by Dr. R. P. Strong, in some material forwarded by Dr. Mallory, and is believed to be the first time that *Opisthorchis sinensis* has been reported in the Philippine Islands. The case occurred in a Japanese laborer who was working on the Benguet road, who applied for treatment at the sanatorium. He also had crescent forms of malaria in the blood, and uncinaria in the feces. After a short course of thymol and quinine the uncinaria and malaria disappeared, but *Opisthorchis sinesis* was still present at the time the man left the hospital.

OUR LONDON LETTER.

(From Our Special Correspondent.)

COLLEGE OF SURGEONS—PRIZE FOR CANCER RESEARCH AND OTHER PRIZES—DOCTORS AND THE DAIRY INDUSTRY—*x*-RAYS IN SARCOMA—GASTROJEJUNOSTOMY—CONSUMPTION HOSPITALS.

London, April 6, 1906.

Yesterday at the meeting of the Council of the Royal College of Surgeons the Walker Prize of £100, founded by the late Mr. Charles C. Walker, to encourage investigation into

the pathology and therapeutics of cancer, was awarded to Professor Carl O. Jensen of Copenhagen. The advisory committee's report to the council acknowledges assistance from foreign and British surgeons and pathologists and remarks that much important work could not be considered, as it was not done within the time limit, had no direct bearing on treatment, or was not finished, though that under the last head may be perhaps under consideration at the next award. In recommending that Prof. Jensen should receive the prize on this occasion the committee cite a description of his work by Prof. Salomonsen of the State Serum Institute of Copenhagen, as follows:

"The inoculation of cancer from animal to animal had been made in comparatively few cases, and therefore afforded no decisive material for the study of cancer. Prof. Jensen first succeeded in discovering a tumor in the mouse, which made the experimental investigation of cancer on a large scale possible. Prof. Jensen first carried out a large series of inoculations through thirty-five generations, comprehending about 1,000 mice, and thus gave the impulse to certain experimental investigations which are now carried out in many laboratories in different parts of the world. He thus made it possible to investigate, and was himself the first person to investigate systematically the effect of different factors (heat, light, chemical agents, radium, etc.) on the cancer cells. He further demonstrated the possibility of producing an anti-cancer serum for mice by the injection of the crushed tumor into rabbits. The serum of rabbits which has been thus prepared has been injected into mice suffering from cancer, with the result that the cancer tumors in many of them have disappeared absolutely and permanently."

The report further states that in proposing Prof. Jensen for the prize the committee were influenced not merely by the work he has himself done, but also by the extent to which he has opened up a field of research to all engaged in the study of cancer on certain lines, enabling them to carry out their investigations over long periods and under better conditions than have heretofore been possible.

Other prizes and honors were awarded at the same meeting yesterday, viz., the Jacksonian Prize for 1905 to Mr. Reginald C. Elmslie, M.S., F.R.C.S., and the first Begley Studentship to Mr. W. B. Johnson. The Honorary Medal of the College was awarded to Lt.-Col. Sir Richard Havelock Charles, in recognition of his gift of anthropological specimens, an addition of special value to the museum not only for the number and variety of the specimens but also on account of the authentic particulars attached to them.

Dr. Lucas Championière of Paris was elected an Honorary Fellow.

Surg.-Gen. A. M. Branfoot, C.I.E., of the India Medical Board, and Mr. H. M. Ellis, R.N., director general of the Navy Medical Department, were elected Fellows as members of twenty years' standing.

On Monday Mr. J. L. Lloyd lectured on "The Relation of the Profession to the Dairy Industry." Protesting that many, nay most, microbes were not at all injurious, he held that the older statements of bacteriologists had been shown to be wrong. He declared it had not been proved that the tuberculous disease of cows was communicable to man, and then he proceeded to give as one instance of medical fallacies the statement in a recent lecture by Dr. Thresh, the eminent M. O. H., that "from 20,000 to 30,000 infants perished annually in the United Kingdom from diarrhea, a large proportion of them being infected through the milk." This view, Mr. Lloyd declared, had probably less evidence in its support than any other concerning milk. When pure the liquid had an antiseptic action internally; when sour it might cause diarrhea and should not be given to infants unless it could be heated without curdling. Fear of disease germs led doctors to sterilizing milk, which made it less digestible and less nutritious, while it often failed to destroy the spore-forming bodies, and these having the field to themselves when the lactic acid organisms were killed produced toxic compounds. He had known several cases of poisoning by sterilized milk which had been kept too long. Milk should be drunk in a natural state.

At the conclusion of this lecture, up rose Dr. Thresh himself to offer a few criticisms. He said the presence of a great number of microbes was a sign of impurity, although Mr. Lloyd thought them of so little importance. Toxins, said Mr. Lloyd, and not bacteria might cause illness. But what were toxins? They were the products of microbes. If bovine tuberculosis could not be transmitted in cow's milk, how was it that the tubercle bacilli found in the intestines of children were so often of the bovine species? Mr Lloyd denounced him for saying diarrhea in young children was often due to milk, and in the same breath admitted it might be caused by sour milk. But sourness was produced by microbes. Nobody denied the value of pure milk in a natural state. If it could always be obtained doctors would recommend no other.

Dr. Busch showed at the Clinical Society a man of 37 who contracted syphilis in 1896 and had since been treated vigorously. In September, 1904, he had swelling and cyanosis of face and neck, the right half of the thorax was painful at night, and swallowing became difficult. A swelling appeared on the second and third sternocostal joints and another in the right supraclavicular space. Iodide was given, but the patient got worse. In February, 1905, he went to Vienna, where *x*-rays were employed and improvement occurred. A gland removed from the supraclavicular space was sarcomatous. He has since gained weight and lost all pain. Some similar cases were mentioned.

Mr. W. G. Spencer remarked that treatment by the rays would only be waste of time in some sarcomata; but in others, those called in this country lymph adenomata, it might be successful. These, however, had been known to disappear under iodide and arsenic long before Roentgen's discovery.

Mr. Wallis has communicated three cases of gastrojejunostomy which have points of interest. The first was in a woman aged 91, who made an excellent recovery, losing all the symptoms. She died twelve months later from cerebral thrombosis. A speaker who had seen the case said he had been much impressed by the relief experienced and thought old age in itself was not a bar to serious operations. The two other cases were instances of chronic inflammatory thickening around an ulcer, simulating a new growth. In both a posterior gastrojejunostomy was done. In one when, a month later, the abdomen was opened to do a partial gastrectomy, the supposed growth had disappeared almost entirely and the patient has recovered. In the other the patient died on the fourth day from hemorrhage, and the autopsy revealed a large ulcer with a vessel along its floor having an opening about the middle. Mr. Wallis thinks these two cases show that a posterior gastrojejunostomy should precede gastrectomy, and if there has been much hematemesis the stomach should be opened through healthy tissue in the neighborhood of the ulcer, which can then be cut out, cauterized, or ligatured to prevent further hemorrhage.

The proposal that the Asylums Board should undertake the establishment of sanatoria for consumption has not received the sanction of the Local Government Board, which has replied to the application that the "information at present before them does not appear to afford sufficient justification for the very heavy outlay which would be involved." Sir W. Broadbent now says the Asylums Board is too closely associated with poor law administration to be suitable, but that there are other agencies in existence, all that is needed being to combine and direct their efforts. He also says "a great deal could be done at very little expense," on which last point most people will differ.

Some provisional figures were issued on Tuesday which will probably differ slightly from the revised statistics to be presented in the Registrar General's Report. The marriages in England and Wales in 1905 numbered 260,489; the births, 929,457; the deaths, 519,939. The estimated population at the middle of the year is put at 34,152,977.

The Maida Vale Hospital for Epilepsy and Nervous Diseases has been fortunate enough to get its assessment reduced from £570 to less than £100. Even with that it is in want of help, for its expenditure is about £3,000 and its ordinary income, including grants from the three funds, was only £1,087 last year; 166 in-patients were treated in the twenty-nine beds, the average period of residence being seventy-five days.

The Governors of the Queen's Jubilee Hospital, which you know chiefly from complaints of its mismanagement and its not being required, determined on Tuesday to change its name to the Kensington General Hospital. By any other name it will smell as sweet. A speaker said it had been subjected to a starvation process, only £181 having been subscribed last year, though £2,000 was sent from its neighborhood to the King's fund. Surely this only shows that the public endorses the verdict of the profession.

OUR COPENHAGEN LETTER.

(From Our Special Correspondent.)

THE NUMBER OF LEUCOCYTES—A NEW TREATMENT FOR HEART DISEASES—THE FINSEN MONUMENT—THE FIRST DANISH LADY M.D.—OBITUARY NOTE.

COPENHAGEN, March 17, 1906.

THE last few months have witnessed the publication of two noteworthy medical investigations by Danish writers, thus giving an eloquent evidence of the assiduous scientific work carried out by the profession in our little country. The number of leucocytes in normal blood has been inquired into by Dr. Kjer-Petersen, who reduces *ad absurdum* in a vehement, but as it seems justified, onslaught most of the researches made before him in this line. The writer points out that most of the prior investigations have been carried

out without ascertaining the exact size of the error which necessarily adheres to the method of examination. This fault cannot be determined once for all, but anybody working with the counting of blood corpuscles must as a preliminary make out for himself how great the error is in his particular case. Otherwise he does not know what to believe of the numbers resulting from his counting. This may appear obvious, but in reality it is astonishing to see how many investigators count away without having the slightest idea of the exact value of their results. Taking due regard to the mentioned error, Dr. Kjer-Petersen has counted the leucocytes in the blood of a great many normal persons and is able to determine the number to be from 4,000 to 5,000 in each cubic centimeter of blood taken from men just after their awakening in the morning. This number remains unaltered day after day for a very long time. On the other hand, the examination of healthy women had the very interesting result that the number varied greatly (from 3,000 to 24,000), and not only in different individuals, but very considerable variations might occur even in the same person. The blood of women is therefore called inhomogeneous by the writer, while he considers the blood of men as homogeneous. It will easily be seen how important the knowledge of the normal variability of the number of leucocytes in women may be, for example, to the surgeon, as of late years one of the indications for operating in cases of appendicitis has been sought in an increase of the number of leucocytes. Of great biological interest is the writer's statement of the great difference between men and women as to the number of leucocytes, and it is much to be desired that the correctness of it be tried by other investigators. But anybody wishing to inquire into this matter must of course also be prepared to work with the same painstaking exactness as the author.

Besides having a great biological interest, the last-mentioned statement of Dr. Kjer-Petersen may perhaps be of considerable social importance. At least, I should not be astonished if it proved to be a new and useful weapon in the standing contest, whether man or woman is to be considered as the superior being. Without doubt, both sides may take advantage of it.

A certain sensation has been caused by a publication by Dr. Hasselbalch, director of the laboratory of the Finsen Light Institute. Dr. Hasselbalch has made researches as to the effects on circulation and respiration produced by electric light baths. Now several writers have enriched our knowledge of the *immediate* effects caused by and observed during such baths. But the novelty in Dr. Hasselbalch's investigations is that he has determined the *lasting* results of the exposition of the naked body to a strong electric light. By means of exact methods he has succeeded in proving that the hyperemia of the skin produced by the light-bath is accompanied by a considerable diminution in the rate of respiration, and that this decrease may persist for many days after the bath. Another and yet more important fact is that the average blood-pressure in the brachial artery decreases to the amount of 8 per cent. after the light treatment. This diminution of the blood-pressure has a fixed minimum value for a given light source, below which the pressure does not sink, although the light treatment be continued. The decrease of the arterial pressure is caused by dilatation of the peripheral vessels and may persist more than a month after the light-baths are discontinued. It will easily be seen that these results of the light treatment, if constant, may be of great importance for the treatment of heart diseases. A diminution of the blood-pressure, produced by a dilatation of the peripheral vessels, has the effect that the work required of the heart also becomes lessened, and that the area of heart dullness is diminished. In other words, we have here a therapeutic agent that works in the same way as the carbonic acid bath (Nauheim cure), but with the valuable difference that it is followed by a far more pronounced and lasting dilatation of the peripheral vessels. Dr. Hasselbalch's investigations may mark the beginning of a new era for the Finsen Institute and certainly deserve attention from the medical public. Several patients suffering from diseases of the circulatory system have already been treated at the institute, with good results, and it is intended to add a new department for light-baths, in order that the Finsen Institute of Copenhagen may continue to be at the lead also in this line of light treatment.

Of course new, fruitful applications of the therapeutic powers of light form the most appropriate monument for a man like the late Professor Finsen. Perhaps they will also be the only one that he will get. This remark is caused by the edifying contest going on between the Danish sculptors and the so-called Finsen Committee. It is perhaps remembered that an international subscription was opened after the death of Finsen, with the object of erecting a monument for him, and the very pretty sum of $25,000 to $30,000 was contributed, from practically all parts of the civilized world. In the meantime, however, the Danish Finsen Committee, presided over by the Prime Minister, has decided that only a part of the total sum, to the amount of $7,000 to $9,000, be expended on the monument, the rest of the sum going to make up for some deficits in the balance of the institute, caused amongst others by the proposed new buildings. The Danish sculptors have answered this decision of the committee by declaring that none of them is willing to take over the job of erecting a monument worthy of a man like Finsen for the paltry remuneration proposed. So that the committee will have to be satisfied with some ready-made monument in the pastry-cook style, or increase the amount to be paid for a monument.

The latest piece of medical news is that at length we have now got our first lady M.D. Since 1885 women have been admitted to pass the final medical examination and to practise in Denmark. But it is not here as in the United States that one becomes an M.D. before obtaining a license to practise. The Danish degree of M.D. may most appropriately be compared to the German one of *habilitation*, because in both cases the publication of an original scientific work is a necessary condition to the securing of the degree. Another similarity between the Danish doctorate and the German *habilitation* is that both of them give a right to become *Privatdocent, i.e.* to lecture at the University. As mentioned, the degree has at last been conferred upon a lady colleague with due honors, and the result has been exultations innumerable in the papers devoted to the cause of the fair sex.

I regret to record the death of Professor Wanscher, a prominent man and of a most captivating character. To the world at large he was perhaps best known as the originator of a simple and efficient apparatus for etherization, which method of narcotizing he always strongly recommended.

YELLOW FEVER CONTRACTED DURING THE DAYTIME.

To the Editor of the Medical Record:

Sir:—Referring to the exposé, in your editorial of March 17, "The Older Views of Yellow Fever," of the doctrine that this disease was not contracted during the day, the following observation may be of interest:

After considerable yellow fever in Panama in the early part of 1905 there was no case reported from March 23 to April 21, during which time, then, there could not have been much in the city. From that time to May 6 eighteen cases were reported, all, save one, Americans, fourteen of whom worked in the Administration Building. The other three Americans, while living elsewhere, were in the Administration Building on business within the limits of their incubation. It is not recorded whether the other patient—an Italian—was in this building or not. The Americans were easy to trace. They lodged in numerous boarding houses and hotels in almost all parts of the city, and some in places outside of the city, at Ancon, Corozal, and Empire. No case of yellow fever developed at or near this time in these houses or towns except among those who worked in or visited the Administration Building. Some cases developed, as in the Chief Engineer's house, the Section, and in the grounds of Ancon Hospital, in places where no other case ever developed since the Americans have been here. This outbreak was followed in a short time by a spread of fever in many parts of the city. The evidence seems convincing that the source of infection was the Administration Building. This is an office building, the hours being from 8 A. M. to 5 P. M. I do not mean to say that none of those who developed the fever ever stayed after 5 P. M.; some, doubtless, did, but this practice was not general, and among those who developed fever in this outbreak, those living out of town were certainly in the building only during office hours. At this time, the latter part of April, the sun sets well after 6 P. M. These cases, then, if contracted in the Administration Building, *were contracted during the day.*

It is unquestionably true (as you quote) that it has been (but I think not since 1888) very generally accepted that yellow fever is never contracted during the day "when the sun is well above the horizon"—as generally accepted as was the transmission by clothing. To be generally accepted, however, is not to be proven, and the evidence for this belief, since it seems still to exist in the United States and has the endorsement of the Pasteur Commission which went to Rio, should be investigated. Of the conditions at Rio and Petropolis, always quoted in this connection, I have no personal knowledge; nor of the instances occurring prior to 1888 of "daylight communication" alleged to show that yellow fever cannot be contracted in the daytime; but for yellow fever, as it has occurred in the United States since 1887, and as we have observed it in Cuba and Panama, the evidence is decidedly against this doctrine.

We know that *Stegomyia fasciata* habitually bites most in the afternoon, here from 3 o'clock on, but I have seen them feeding in a moderately dark room—my office—as early as 2 P. M., and at 1 P. M. in a darker room. They also feed at night, 7 to 8 P. M. by lamp light, but in my experience very sparsely. I *think* they do not feed in the dark without artificial light, but I do not *know* this. I have not found them, or have found them with extreme rarity, under our bars in the morning, while *Culex* and *Anopheles* were so found continually. Up to May, 1904—since which time I have had little opportunity to read—there was no *direct* evidence that this variety (*Stegomyia fasciata*) fed at night in the dark, or that there was any difference in the habits of feeding between the newly born and the two-weeks old females, whether the latter be infective for yellow fever or not. The Pasteur Commission at Rio (Marchoux, Salemleni, and Simon), drew the *deduction* that the old—and all infection for yellow fever must be old mosquitos—mosquito fed by preference at night. This was based on their acceptance that yellow fever was not contracted during the day. There was no direct observation on the feeeding of mosquitos to confirm it. They said "by preference" because they knew that the experimental cases of Reed, Carroll, Guiteras, and others were produced by infective mosquitos feeding on the subject during the day. These mosquitos, however, were in confinement and not altogether under natural conditions, and could exercise no preference about feeding—must feed when they had a chance. I have not had access to the reports of the Pasteur Commission for about two years, but think that I quote them, in substance, correctly.

My opinion, based both on observation of the disease and on the habits of *Stegomyia fasciata*, is: (1) No time of the twenty-four hours is always safe in infected houses; (2) the forenoon and early afternoon, the rooms being bright and sunny, is the safest time, and the later afternoon the least safe. From the habits of *Stegomyia fasciata* I would also deduce that the sleeping hours at night are fairly, or very, safe, but I know of no observation of the disease itself bearing this out, nor indeed any to the contrary.

H. R. Carter, M.D.,
Surgeon, P. H. and M. H. S. and
Director of Hospitals, I. C. C.

Ancon, C. Z.

Progress of Medical Science.

New York Medical Journal, April 14, 1906.

Intraperitoneal Shortening of the Round Ligaments.—This procedure is considered by J. M. Baldy in its application for the relief of backward displacements of the uterus. After some remarks on the function of these ligaments, the results following their relaxation and operative methods in vogue, he passes to the special method frequently known by his name. The technic is as follows: The broad ligaments are perforated from their posterior surface by forceps, which on emerging on the anterior surface are made to grasp the round ligaments, which are then drawn through to the posterior surface with the forceps. The round ligaments are brought together and sutured both together and to the uterus low down on its posterior surface (at about the position of the internal os). This accomplishes three things: (1) The tilting forward of the uterus to a normal anterior position. (2) The lifting up of the whole pelvic floor from its sagging position. (3) The uplifting and support of the ovaries and tubes. The three results are of necessity a part of each other, and one is as constant as the other. The most important of all, the uplifting and support of the ovaries, is absolute and sure; and this result is accomplished without the slightest pressure on these delicate organs. The author considers this method the best one with which he is acquainted, as it allows of the treatment of complications through one single incision. It has none of the uncertainties of result that obtain in the suspension operation (complete failure to suspend or overstretching of the band) and none of the dangers of the fixation. It is rational in that it gives a fairly sure substitute for the lost elements of support and does absolutely no harm. It allows of pregnancy in any woman who could in any event become pregnant.

The Aims and Limitations of Intranasal Surgery in the Treatment of Chronic Nonsuppurative Affections of the Middle Ear.—T. J. Harris refers to the changes of opinion of the last sixteen years with reference to the relation of intranasal lesions to ear disease. He believes that it is no longer possible to draw the old conventional lines of demarkation between the two specialties of rhinology and otology. Such a tendency to amalgamation should be recognized in our teaching and in our clinical work. He recapitulates his opinions on the following propositions: (1) The nose plays an important rôle as a causative factor in many cases of otitis media, but by no means in all cases. (2) The lesion in the nose is usually of an obstructive nature, acting as an obstacle to proper ventilation of the middle ear. (3) In beginning cases of hypertrophic otitis media a certain amount of improvement in the hearing can be confidently expected by restoring proper ventilation of that cavity through measures addressed to the nose, with the aim of relieving nasopharyngeal and tubal inflammation; yet only such cases of the disease call for nasal treatment as show pathological changes in the throat themselves demanding attention apart from the condition of the ear; it is important to determine the true nature of the process in the middle ear, as the sclerotic or so-called hyperplastic form is not influenced at all by such treatment; adhesive changes and ankyloses cannot be expected to yield, however completely the nasal obstruction is removed. In a word, while suitable cases are capable of being helped, many cases of chronic otitis media associated with certain nasal obstructions do not call for and will not be improved by any form of nasal treatment, and all such treatment in these cases is unjustifiable and unwarranted. (4) An important result to be secured by treatment is the relief afforded from the repeated attacks of acute rhinitis which by their effects on the Eustachian tube are wont to aggravate the chroic condition. (5) Tinnitus aurium and vertigo are at times benefited by nasal treatment. (6) Finally, because of the importance of treatment to the nose and throat a closer association clinically of otology and rhinology is urgently demanded.

The Influence of Certain Antipyretics on Nitrogen Metabolism.—A series of experiments has been made by H. Morgenbesser upon persons with a purinfree diet made up of milk, cream, eggs, sugar, and water. At the same time certain drugs were given and their results on nitrogen metabolism calculated according to methods given in full in the paper. It was found that sodium salicylate increased the total nitrogenous output, increased urea, and ammonia, while uric acid and xanthin bases were not increased. Quinine decreased the total nitrogen, the urea, uric acid, total purin bases, and slightly increased the ammonia elimination. The nitrogen decrease began at once and stopped immediately on the discontinuance of the drug. It seemed to stimulate the organism to make up for this decrease. Acetanilid increased the total introgen, urea, uric acid, and greatly the ammonia.

Journal of the American Medical Association, April 21, 1906.

Malaria on the Isthmus.—A. I. Kendall sums up the result of his study as follows: At the time of the investigation of the towns examined, fully 50 per cent. of the natives and 75 per cent. of the foreign-born inhabitants had malarial parasites in their peripheral circulation. This, however, does not mean that all patients presented febrile symptoms, as many of them did not. This high percentage, nevertheless, is a serious menace to the health of those who for any reason are compelled to stay in these towns, especially on account of the prevalence of *Anopheles albipes*, a mosquito shown to be a carrier of malarial infection. Other species may also be factors to a less extent. The estivoautumnal type is the prevalent one; Chagres fever is probably only a severe estivoautumnal infection. Pernicious malaria is not caused by a distinct parasite, but by an estivoautumnal organism of exalted virulence. Natives and their descendants or, generally the descendants of those who have resided for many years on the Isthmus, have at birth, to a certain degree, an inherited immunity. An active immunity, which is by no means absolute, is generally acquired, becoming manifest about the age of 16. The foreign-born individual acquires a certain tolerance, but not so great or so early manifested as that of the native. Malaria is an environmental disease; occupation has very little to do in its causation. Quinine in moderate daily doses, while it does not insure against the disorder absolutely, nor completely drive out the malarial organisms from the circulation, has an important prophylactic and curative effect.

Ileosigmoidostomy for Intestinal Ulcers.—R. C. Coffey reports a case of the successful utilization of the operation of ileosigmoidostomy for this condition. The patient, a man aged 22, had suffered for years from obstinate constipation with great distention of the bowels and disabling pain, for which he had not been able to obtain relief. The pain was localized at the splenic flexure, and the patient thought that there

must be an obstruction at that point. An exploratory operation revealed a distended and congested colon, but no evidence of obstruction. The appendix was not seriously diseased, but was removed as a possible source of irritation. No relief was obtained, and three weeks after this exploratory incision, the patient demanded another operation. In this the ileum was cut in two, between clamps near the ileocecal valve, the two ends were turned in, and an ileosigmoidostomy was performed. An indurated ulcer was found about two inches above the point of anastomosis, and another about three inches higher on the descending colon, near the mesentery. Another probably existed near the splenic flexure, which could not be explored through the wound. The patient made a perfect recovery. Coffey thinks the operation will have a considerable value in diseases of the colon in which rest or drainage are required. In his case the bowel functions seem to be perfectly normal and there is no disturbance of digestion.

Some Points in Anesthesia.—R. H. M. Dawbarn offers several suggestions regarding major anesthesia. In case ethyl chloride is used as the beginning of ether anesthesia, and the Clover air bag is employed, he advises putting into the bag two of the 10 c.c. tubes of ethyl chloride with easily broken, drawn out tips, wrapping them in a gauze sponge secured by an elastic band, and then, with the face piece in position, breaking the tip of one through the rubber bag. If this is done, the anesthesia is commenced without any such waste as would follow first breaking the tube and dropping it into the bag. Usually it will not be necessary to break the second tube. He believes the rebreathed, lung-warmed ether in the Clover air bag is much less likely to cause ether pneumonia, besides being much more economical. The second point emphasized is the hanging up near lighted lamps or gas jets, when chloroform has to be used, of cloths wet with ammonia. The resultant chemical affinity produces ammonium chloride and prevents the irritation from the freed chlorine. The third point refers to the administration of an anesthetic during natural sleep. Dr. Dawbarn advises, in case of a child, selecting the usual hour for its daily sleep, entering the room noiselessly, and administering the anesthetic cautiously. The fourth point mentioned is regarding the common advice to remove all artificial tooth plates. He thinks that there are some exceptions to this rule: When the plate is large and the pharynx of only ordinary size, swallowing or choking with the plate in position is out of the question, while if it is removed the cheeks and lips may fall in so as to interfere with the breathing space, especially if there is coexisting nasal obstruction.

Accuracy in Dietetics.—Dudley Roberts remarks on the common neglect of accurate regulation of the diet by the physician and accounts for it by assuming that the matter has never been presented in practicable form. Food weighing is out of the question in ordinary practice, and the directions should cover what is actually eaten, not what is served, or serious mistakes will be made. He, therefore, presents a table giving the actual quantities in the ordinary household measures, and the number of calories and grams of proteid contents to each measured spoonful, glass or dish of the different foods as offered for consumption, with such additional remarks in each case as seems needed. For patients requiring accurate regulation of diet, this table will come into play and will also enable the physician to calculate with reasonable accuracy the amount of nutrition that has been taken and to note the facts in connection with the symptoms observed.

Glandular Fever.—H. Schiller reports six cases in addition to the five before published by him under the title of "Pfeiffer's Glandular Fever." These cases, he states, do not correspond exactly with the cases described by Pfeiffer. The cases Schiller reports are well characterized; the most striking symptom is the sudden swelling of certain glands in the neck, not usually painful or tender. One patient had chills, headache, pains in the abdomen and back, and some vomiting. In all cases there was some pain in the throat, but not so severe as in ordinary tonsilitis. Three of the patients had acute hemorrhagic nephritis as a sequel, as severe as that following scarlatina. The spleen and liver were somewhat enlarged in all cases, and the long duration of the swelling and slow absorption were characteristic. Suppuration occurred in three cases. In one case influenza bacilli were found alone, in another streptococci alone and both together in a third. The disease had the characteristics of an infectious fever, with suggestion of contagion in some cases. The prognosis was good in all.

The Lancet, April 7, 1906.

Doyen's Serum in Malignant Disease.—A. Paine and D. J. Morgan review Doyen's theories as to the occurrence of his so-called *"Micrococcus neoformans"* in malignant growths, and the various steps leading up to the elaboration of his serum. Of nine cases treated by them with serum injections, no effect on the course of the disease was noted in four. In two, the injections were followed by severe pains, and in three by severe constitutional disturbances. Concerning the *Micrococcus neoformans,* the authors note that it is often present with other micrococci in malignant tumors, but in their opinion not in sufficient numbers or with a constancy to enable it to be regarded as the etiological factor in the evolution of these growths. In their hands the inoculation of animals with this organism has been followed not by the formation of neoplasms, but by the expression of inflammatory reactions.

The Pathology of Gangrene and Perforation of the Hollow Abdominal Viscera and "Acute Perforating Ulcer of the Stomach."—D. Drummond and R. Morison discuss the question of patchy gangrene followed by perforation, with special reference to its occurrence in the gall-bladder, appendix, cecum, urinary bladder, and stomach. In all the cases to which they refer, the lesion commences as a small patch, more or less circular in outline and at that portion of the wall of the viscus farthest from the source of its vascular supply. With reference to the stomach, their view is that excess of hydrochloric acid in the stomach, by producing pyloric spasm and acute gastric distention in an anemic girl, gives rise to a small gangrenous patch or patches in the stomach wall, and that subsequent digestion of the dead or devitalized patch, if all the coats are involved, leads to perforation. It is generally recognized that the stomach juices in certain circumstances destroy its own wall. They add that a sudden attack of distention due to pyloric spasm in the case of a chronic ulcer probably accounts for perforation in many instances.

The Treatment of Cancer by Therapeutic Inoculations of a Bacterial Vaccine.—The experiments made by C. Jacobs and V. Geets as controlled by measurements of the opsonic powers of the blood convince them (1) that there exists in cancerous cachexia a specific microorganism, the *Micrococcus neoformans* of Doyen, (2) that the Doyen sera with which they have experimented are wholly useless, and (3) that it is practicable to minimize the human organism by means of a series of inoculations of the *Micrococcus neoformans* vaccine under the control above mentioned. They describe their methods of preparation and employment of this vaccine. They summarize their results in 46 cases as follows: "Cure," maintained after several months, 7; lasting improvement, 12; transient result, 7; no result, 12; still under treatment, 9. Detailed histories are given of five cases. They believe that in certain cases the vaccine can do much, but in others nothing. Just as a tubercle vaccine judiciously administered does not cure all tuberculous cases, so a cancer vaccine cannot cure all cancer cases. The question of success or failure in cases apparently alike turns on such factors as reserve of vital energy and the capacity for reaction which each patient possesses, and this differs in each case. With regard to the immunizing they can express a definite prognosis after two or three injections of the vaccine, the alterations effected in the quantity of the opsonins expressing accurately the strength of the autoprotective reaction. For example, when the opsonic index does not rise after one or two injections the case is irremediably lost, the immunity has fallen to the lowest degree, the defensive powers seem exhausted and cannot be stimulated by anything. Continued injections in such cases can only hasten the death of the patient, since each injection of the vaccine removes a certain amount of the protective substances, and as no phase of manufacture, no positive phase, succeeds to this, there is merely set up dangerous cumulation of negative phases, leading the patient to an early death.

British Medical Journal, April 7, 1906.

The Effect of Various Rays on Trypanosomes.—R. Ross states that he has exposed liquid preparations of blood containing numerous active trypanosomes, for periods varying from half an hour to one hour, to very strong rays of the Roentgen, Finsen, and radium varieties. No appreciable effect whatever was produced on the activity of the organisms.

Freezing Tissues for Sectioning.—A. F. Stanley Kent commends the use of carbon dioxide for this purpose. He connects the cylinder of compressed gas (which is kept in the upright position) by means of rubber tubing

with the ordinary ether-spray apparatus. The pressure from the cylinder takes the place of the pressure from the bellows, and there is a slight additional cooling effect produced by the expansion of the gas. Ether is employed as usual, but the freezing is accomplished so quickly that the extra expense may be disregarded. The advantages of the method are its perfect simplicity and great convenience. Tissues can be frozen in a couple of minutes and kept at any desired degree of hardness for as long as necessary by simply altering the valve on the cylinder. One caution is necessary: the rubber tube should be loosely connected with the cylinder—that is, should not be tied on, so that it may act the part of a safety valve, and may be blown off in the event of too sudden an opening of the cylinder cap.

The Value of Sarsaparilla in Syphilis.—A series of cases of syphilis is summarized by C. J. Cullingworth, who administered a decoction of sarsaparilla to his patients. He noted in all but one a marked increase in weight. No special forced feeding was followed. In some the iodide was given at the same time, but the addition of the sarsaparilla to the other measures caused an apparent rate of increase in weight. The author admits that his report will be received with greatest skepticism, but personally he is convinced of the great value of sarsaparilla.

The Importance of the Colon.—M. S. Monier-Williams refers at length to a patient who suffered from abdominal pain and diarrhea with hemorrhages. A right-sided colotomy was done after all other means of relief had failed. A unique appliance for draining the bowel contents was devised and worn by the patient, who became able to follow his usual calling, but later began to run down again. The rest secured for the colon had practically cured his hemorrhages, but now, the writer believed, he was in danger of losing his life from want of use of his colon. Saline injections were therefore made through the operative fistula, and he immediately improved, but all of a sudden developed purpura hemorrhagica. The injections were discontinued and bleeding again ceased; so the salines were renewed, but again the purpura came on. Hypodermoclysis was begun and well borne. The patient was instructed to completely block the cecal anus at night by a proper plug, which was removed each morning. In this way the contents of the small intestine flowed normally into the large intestine during the night time, but passed through the artificial anus into the bottle during the daytime. The colon had twelve hours of absorption and twelve hours of rest, its working hours being of sufficient duration to keep the patient in good general health, and its resting hours sufficient to keep in check the colitis, which, though still not absolutely well, caused no inconvenience. This method enabled the patient to gain greatly, and his health finally become practically normal. The author can give no reason why the saline injections caused hemorrhage. He concludes that certain modern surgical procedures which deprive the colon of its absorptive functions are not devoid of great evils and even dangers. Finally, he declares that many persons who take each night an aperient of such a character as to produce on the following day a liquid evacuation interfere seriously with their own nutrition, and they should be persuaded to withhold the dose, at any rate, every other night, and so give their large intestines a chance of useful absorption.

Berliner klinische Wochenschrift, April 2, 1906.

The Treatment of Nephritis.—Strasser and Blumenkranz describe observations made in the treatment of nephritics by means of warm baths of considerable duration. The underlying idea was that by keeping the body under conditions which would as completely as possible exclude external vasomotor stimuli, a more equable circulation through the kidneys would be secured. Experimental observations have shown that under ordinary conditions the alterations in volume of the kidney are very considerable, and it was supposed that renal excretion would be favorably influenced by a temporary elimination of these circulatory fluctuations. Observations were made on patients who for an hour and a half were placed in a bath having about the body temperature, and analyses of the urine were made before, during, and after the period of immersion. It was found that the effect of the measure was decidedly beneficial, the excretion of nitrogenous bodies and sodium chloride being greatly augmented, while the total volume of the urine also was considerably increased. The effect on the albumin excreted was less noticeable. The authors consider that the method has practical possibilities and suggest that one or two baths daily of from one to one and one-half hours' duration be tried in suitable cases. More prolonged immersion than this was found to yield less satisfactory results.

The Portal of Infection in Tuberculosis.—Uffenheimer attacks the standpoint of Baumgarten, who maintains that in all cases of tuberculous infection distinct lesions are produced at the portal of entry of the germs. The author believes that his experimental observations justify the opinion that tubercle bacilli can pass through the intestinal wall without giving rise to local lesions, and may then form the starting point of glandular disease. He describes a number of experiments in animals in which tubercle bacilli were given by the alimentary tract under conditions which excluded possible errors through aspiration infection, and in which at autopsy marked glandular involvement was found with no demonstrable lesions in the intestinal wall. In some cases tuberculosis of the lymphoid patches was detected, but this the author believes was due to a retrograde infection from the mesenteric glands, and to prove this he cites a case in which diseased mesenteric glands were found in an animal that had been inoculated subcutaneously, and in which the autopsy also revealed extensive disease of all the glands.

Münchener medizinische Wochenschrift, March 20 and April 3, 1906.

The Action of Light on Ferments.—Jodlbauer and Tappeiner supplement their former observations on this subject by some further studies. They have already demonstrated that direct inhibition of the action of the ferment invertin through sunlight from which the ultraviolet rays have been filtered by passage through glass, takes place only in the presence of oxygen. In repeating these experiments with whole light, that is the visible rays plus the ultraviolet rays, by using vessels made of quartz, the authors found that the ferment was affected in the vessels containing hydrogen, nitrogen, or carbonic acid gas from which all oxygen had been removed. This influence on the ferment remained unaltered even when in the course of the experiment oxygen absorbers, such as sodium sulphite or phosphorus, were present in the vessels, whereas control tests in the dark showed that these substances themselves did not damage the invertin. The addition of fluorescent substances such as eosin or dichloranthracendisulphate of sodium did not intensify the action of the light in the absence of oxygen, an observation which is in strong contrast to the conditions which exist when oxygen is present, in which case the intensity of the light action is much augmented.

The Treatment of Acute Inflammatory Processes by Hyperemia.—Lexer, in the course of a very detailed consideration of this subject, arrives at the conclusion that Bier's method has only a restricted field of usefulness and that its application demands a great deal of care to avoid doing more harm than good. He also considers that in all except the mildest cases it is necessary to make use of free incisions through the infiltrated areas. The modifications in the resorptive processes produced by the artificial hyperemia are not a disadvantage in mild cases, but in more serious conditions incisions are necessary in order to protect the diseased tissues from the dangers of diminished absorption and to avoid imperiling the body as a whole through the increased absorption following the removal of the bandage. The increase in protective bodies produced is of little importance as regards the antitoxic substances, is advantageous as far as the bactericidal bodies are concerned in mild cases, but is dangerous in the severe ones through the liberation of large amounts of endotoxins in consequence of the bacteriolysis which results. This disadvantage can be nullified only through extensive and early incisions. The increase in proteolytic ferments which accompanies the treatment is favorable in infected wounds, but the liquifaction of inflammatory exudations must be forestalled by early incisions, as otherwise important tissues may become necrotic or pus may burrow in the neighborhood. The increased transudation or exudation which takes place during the congestion is injurious in closed or insufficiently incised foci, owing to the distribution of poisons in the tissues, but is of value after incision or in infected wounds, through the mechanical washing out of infectious material that follows. The general conclusion is that the treatment by hyperemia is suitable only for light cases, but that if the infection is at all severe early and extensive incisions must be made to render the treatment safe and effective.

Spinal Anesthesia Combined with Scopolamine-Morphine Narcosis.—Penkert reports on 140 gynecological and obstetrical cases, ninety-four of which were major

operations, in which inhalation anesthesia was avoided by combining spinal anesthesia with the hypodermic injection of morphine and scopolamine. One of the great objections to spinal anesthesia for all severe or protracted procedures has been the fact that the consciousness of the patient is not abrogated and that the mental suffering is therefore often very considerable. The author found that by giving 0.02 of morphine and 0.0006 of scopolamine in two injections an hour apart, the first one two and one-half or three hours before the operation, the patients were reduced to such a state of apathy and somnolence that no recollection of subsequent proceedings was retained. The lumbar puncture and injection of the anesthetic solution were carried out as usual, the patient's face was covered, dark spectacles were put on, and the ears were plugged with cotton. On awakening, it was found that not unpleasant memories were retained, that nausea was practically always absent, and that the bodily condition was stronger, so that fluids could be taken very early. The only disadvantage noted was the occurrence of headache in three cases.

The Leucocyte Test in Milk.—Trommsdorff describes observations which corroborate Bergey's statement that the presence of a considerable number of leucocytes in a sample of milk indicates a more or less pronounced infection with streptococci. Trommsdorff suggests a method for estimating the volume of the leucocytes in a definite amount of milk by the use of specially graduated capillary centrifugal tubes. He concludes that the leucocyte test is a useful one which may be employed as a routine measure to eliminate danger from cows suffering from mastitis, and states that milk containing more than one volume per thousand of leucocytes is to be regarded with suspicion, and that if the quantity of leucocytes rises to more than two volumes per thousand, a disease of the udder may be diagnosed with certainty. For routine use heavy glass centrifuge tubes provided with graduations at these two points may be used. In examining the cows in four dairy stables the author found that from 4 to 20 per cent. of the animals were suffering from mastitis, discoverable in this way, but not by the ordinary clinical tests of the veterinarian, and in view of the probable importance of streptococcic milk in the etiology of intestinal disorders of children he urges that more attention be paid to this feature. The infection of cows probably takes place through the hands of the milkers, and as a prophylactic measure the author counsels rigid cleanliness in the care of the animals, and segregation of those whose milk contains streptococci.

Observations on the Spirochæta Pallida and Cytorrhyctes.—Schütz says that he was able to discover both of these organisms together in smear preparations made from young papules that had not yet ulcerated. Cover glass smears are made as thin as possible by the contact method and are stained for twenty-four hours in the original Giemsa solution. The author considers that it is premature to attempt to differentiate the *Spirochæta pallida* from the *S. refringens* on a morphological basis alone, as transition forms indistinguishable from representatives of either class are to be found in great abundance. He describes a considerable number of different appearances assumed by these organisms, and attaches importance to the fact that the neighborhood of red blood cells appears to be a region of predilection for both spirochetes and cytorrhyctes. Schütz also describes a series of observations which lead him to believe that both the spirochetes and cytorrhyctes occur as intracellular parasites in the interior of the erythrocytes, and he finally concludes that these two forms may represent different developmental stages of the same organism.

Deutsche medizinische Wochenschrift, March 22 and April 5, 1906.

The Practice and Theory of Pressure Narcosis.—Brauer says that the method of narcosis under increased pressure for use in intrathoracic operations, which was described by him some time ago, has been found in practice to be both safe and serviceable. In conjunction with Tuffier several operations were satisfactorily carried out by this method. In the one instance a carcinoma of the esophagus was resected, in another case a similar growth was exposed but was found inoperable, and on a third occasion the thorax was opened for bronchiectasis. In the course of these operations, which took considerable time, no disturbances in circulation or respiration were observed, and the anesthetization did not present any difficulties. Tests made on medical patients without opening the thorax showed that the factor of increased pressure did not exert any undesirable effect on heart or vessels, while respiration was somewhat slowed and deepened. The author then enters into a theoretical discussion in which he endeavors to show that the negative pressure method advocated by Sauerbruch and Tiegel presents the same disadvantages and is unphysiological to the same extent as the positive pressure procedure, and that the former possesses no advantages over the latter.

The Care of the Severely Injured on the Battlefield.—Colmers, who was a member of the German Red Cross Committee in the Russo-Japanese war, states that while experience has shown in civil practice that the prognosis is good in cases of perforating wounds of the abdomen that come to laparotomy within five hours after the injury, the results of operations of this sort on the battlefield prove that the best chances for the wounded under these conditions are afforded by securing absolute rest. To this end the author advocates that the members of the ambulance service shall make soldiers with abdominal injuries as comfortable as possible on the spot, but shall not attempt to move them. The place where such wounded are lying should be marked by a flag and at the close of the battle all such patients should be brought to a small local station, which, if need be, can be abandoned to the enemy in accordance with the provisions of the Geneva Convention. An important feature lies in the education of the troops, who should be taught that in the case of an abdominal wound they should avoid all motion and refrain from taking either food or drink in order not to excite peristalsis. By this method of procedure not only will the best chances be given to those having abdominal injuries, but also the surgeons and attendants will be freer to give attention to the less seriously wounded. It is more important to dress properly a large number of less grave injuries than to spend a great deal of time in endeavoring to save the life of a single patient whose injuries are so severe as to render recovery hopeless.

Two Cases of Brain Surgery.—Amberger's first case was that of a boy of six years who sustained an apparently insignificant wound of the forehead in consequence of a fall. Seven weeks later he presented undoubted evidence of a cerebral abscess, and on trephining the site of the former injury a considerable quantity of yellow pus containing streptococci was evacuated. The patient made an uncomplicated recovery and appears to have suffered no ill effects. The other case was that of a man of twenty-two years who for some time after a fall which caused a depression of the frontal bone, suffered from headache, vomiting, and psychical depression. On trephining, a condition of porencephaly was discovered, a cavity easily admitting the finger and communicating with the lateral ventricle being present. This patient also made a good recovery.

Observations on the Transmission of Syphilis to Monkeys.—Neisser, in the first portion of his paper, considers the inoculations that have been made from tertiary syphilitic material, and comes to the conclusion that fresh syphilitic lesions that have not been destroyed by necrosis or suppuration produce typical chancres in monkeys even when they occur in the tertiary stage. It does not matter whether these tertiary forms appear comparatively soon after the infection, or only at a very late period. If gummatous degeneration of the tissues or suppuration has taken place, however, inoculations no longer succeed. Consequently every tertiary manifestation must be regarded as contagious, and every patient exhibiting such lesions is to be considered the carrier of living, transmissible virus. The tertiary forms from which successful inoculations can be made are closed subcutaneous processes, whereas a negative result followed the use of ulcerated material. The localization of the tertiary processes is usually on the extremities, breast, back, etc., where the risk of transmission to others is slight. The tertiary forms, on account of their painfulness or complicating ulceration, rarely remain unobserved, so that they do not frequently come in contact with other persons. The greater danger attending the primary and secondary lesions lies in the fact that these exist in exposed regions—the genitals, lips, and mouth—and are often overlooked while at the same time they are apt to contain many parasites. It therefore follows that several repetitions of an energetic mercurial treatment should be carried out even in the tertiary stage of the disease. The second portion of the paper is devoted to a description of three successful inoculations from infants with hereditary syphilis, which appear to show that such individuals are the hosts of large numbers of parasites circulating in the blood and present in nearly all the organs. Positive results were obtained with the heart's blood, kidney, lungs, liver, ovary, and nasal mucus.

Book Reviews.

STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. Reprints. Vol. III. 1905.

THIS is the third volume of studies compiled by the various workers in the Rockefeller Institute and comprises thirty reprints of articles on quite a range of general subjects, although researches relating to some department of immunity and its congeners preponderate. The collection forms a valuable conspectus of the direction in which modern research is advancing and gives a practical demonstration of the fact that the endowment of the institute that bears his name was one of the best investments ever made by the donor of the funds that enabled these studies to be carried out.

MATERIA MEDICA, PHARMACY, AND THERAPEUTICS, Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, Minute Directions for Prescription Writing and Avoiding Incompatibility, also the Antidotal and Antagonistic Treatment of Poisoning. By SAMUEL O. L. POTTER, A.M., M.D., M.R.C.P. (Lond.), Formerly Professor of the Principles and Practice of Medicine in the Cooper Medical College of San Francisco; Author of the "Quiz-Compends of Anatomy and Materia Medica," "An Index of Comparative Therapeutics," Several Articles in Foster's "Practical Therapeutics," and "Speech and Its Defects"; late Major and Surgeon of Volunteers, U. S. Army. Tenth Edition, Revised and in Greater Part Rewritten. Philadelphia: P. Blakiston's Son & Co., 1906.

THIS tenth edition of Potter's unexcelled treatise has been very extensively revised to accord with the changes introduced into the eighth revision of the U. S. Pharmacopeia. Many of the recently introduced non-pharmacopeial remedies have received special treatment, some of the articles of the former edition, treating of the unimportant and obsolete drugs have been dropped, and a large number of the other articles have been rewritten and expanded. The work is divided into three main parts, following an introduction dealing with definition, pharmacology, classification of remedies, and dosage. Part I is devoted to materia medica and therapeutics; Part II to pharmacy and prescription writing, and Part III to special therapeutics, the diseases being arranged alphabetically so as to afford a convenient index of treatment. An appendix contains a list of Latin words with their abbreviations and English equivalents, tables of differential diagnosis, and the formulæ of the most popular patent medicines. A very complete index closes the book. The various sections of the work—Classification, Materia Medica, Incompatibilities, Extemporaneous Pharmacy, Special Therapeutics, Appendix, and Index—are indicated by a thumb index, greatly facilitating ready reference. We have expressed our appreciation of Dr. Potter's treatise in reviews of former editions, and what we might say of this would be only a repetition. It is a work meeting all the requirements of the student and practitioner, systematic in arrangement, clear in definition, concise, yet inclusive. All the changes in this new edition are in the line of improvement and serve to keep the book in the front rank of works devoted to this most important branch of medicine.

THE DISEASES OF INFANCY AND CHILDHOOD, for the Use of Students and Practitioners of Medicine. By L. EMMETT HOLT, M.D., Sc.D., LL.D., professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; Attending Physician to the Babies' and Foundling Hospitals, New York; Consulting Physician to the New York Infant Asylum, Lying-in Hospital, Orthopedic, and Hospital for the Ruptured and Crippled. Third Edition, Revised and Enlarged. New York and London: D. Appleton and Company, 1906.

EVERY text-book in medicine, which is of any value at all and not a mere compilation such as could be written by any literary hack, is characetrized by some special feature which distinguishes it from its fellows. No work is superlatively good, just as no practitioner is superior in every branch of his calling. The peculiar excellence of the book before us is to be found in the section on symptomatology and diagnosis. The author is an acute observer and not only views the picture of disease as a whole with a comprehensive eye, but singles out the details with an acuteness of vision and notes their significance in a way that is most helpful to the duller of comprehension. We know of no treatise on pediatrics nor of one especially devoted to diagnosis in which the clinical picture is portrayed more clearly and more satisfactorily. With this as a guide, the student or young practitioner should seldom be feezed, so far as recognition of the condition present is concerned, by any case of disease in a child with which he may be confronted. The course of the disease and its characteristic symptoms are so lucidly depicted that no one, with a little study and exercise of discrimination, can fail to recognize the condition.

We cannot say so much, however, concerning the sections on treatment. The orthodox methods of handling the various diseases are correctly stated, but conservatism is not always commendable and sometimes is harmful. A text-book should, of course, give the accepted and conventional modes of treatment, but it should also take note of the newer methods, even those advocated by the therapeutic optimists. In the management of cerebrospinal meningitis, for example, Dr. Holt merely mentions warm baths as of possible value in the relief of the nervous symptoms, but says nothing of them as a curative measure, although they are advocated by many authorities as the best means of preserving life. In pneumonia, again, no reference is made to the specific treatment of the disease, and, though fresh air is referred to in general terms, no mention is made of the open-air treatment. We would not be understood as condemning this treatise, which is one of the best works on the diseases of children which this country or England has produced; we have only pointed out what we think is its weak point. It has strong points enough to make it indispensable to the general practitioner and the pediatrist, but, like most books of the kind, it is not all-sufficient in itself and needs to be supplemented by others of its class. An excellent feature of the work is the illustrations. These are, for the most part, original, are well chosen, and give very clear pictures of the anatomy and chemical aspects of disease in children. This new edition has been revised especially in the chapters dealing with the examination of the sick child, hypertrophic stenosis of the pylorus, diarrhea and dysentery, vaginitis, cerebrospinal meningitis, mental defects, chondrodystrophy, status lymphaticus, and diphtheria.

MAN AND HIS POISONS. A Practical Exposition of the Causes, Symptoms, and Treatment of Self-Poisoning. By ALBERT ABRAMS, A.M., M.D. (Heidelberg), F.R.M.S., Consulting Physician Denver National Hospital for Consumptives, the Mount Zion and the French Hospitals, San Francisco; President of the Emanuel Sisterhood Polyclinic; Formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College, San Francisco. New York: E. B. Treat and Company, 1906.

THE author of this book is a specialist in the unconventional, an expositor of the unconsidered in medicine, and an original thinker who has brought to light many indices to disease hitherto unrecognized by clinicians. Autointoxication is an admitted cause of many human ills, but its importance as an etiological factor of disease, especially of nervous and mental diseases, has been somewhat neglected by students of bacteriology. To atone for this neglect by directing the attention of medical practitioners to the influence of man's self-generated poisons in the causation of some of his sufferings, is the *raison d'être* of this work. The book is disappointing in a way and is not very easy reading, owing to a certain lack of system in its composition. The author dives into a multitude of subjects having no apparent relation to autointoxication, and his style is rather jerky, the sentences being short and aphoristic. There is much meat in the book, however, and it is good for desultory reading, though too much like a scrap-book to serve as a logical treatise.

A MANUAL OF PHARMACY FOR MEDICAL STUDENTS. By M. F. DELORME, M.D., Ph.G., Instructor in Materia Medica and Pharmacy, Long Island College Hospital; Member Kings County Medical Society, Associated Physicians of Long Island; Physician to Lutheran Hospital, etc. New York: The John C. Lindsay Company, 1905.

THE author offers this volume as "a textbook of pharmacy adapted to the requirements of the medical student." Parts of the book may be useful, but the chapter dealing with prescription writing has many errors (typographical and others); and until these are corrected the medical student will do well to be on his guard in reading the work.

REFRACTION, Including Muscle Imbalance and the Adjustment of Glasses. By ROYAL S. COPELAND, A.M., M.D., Professor in the University of Michigan, and ADOLPH E. IBERSHOFF, M.D., Instructor in the University of Michigan. Philadelphia: Boericke & Tafel, 1906.

THE subject treated of in this volume is one of much importance and cannot be written up too often, provided the text is of sufficient excellence. This new claimant for favor from the ophthalmologist is a volume of 144 pages. Its style is elementary, the book being designed for the student and general practitioner rather than for the specialist. The portion of the work treating of refraction occupies the first 117 pages. This is followed by an appendix devoted to the description of mechanical aids to refraction. The principles laid down and the advice given are correct, and the book is suitable for those for whom it is intended.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held February 2, 1906.

DR. SAMUEL LLOYD IN THE CHAIR.

Thyroidectomy for Exophthalmic Goiter (Two Cases).—Dr. W. A. DOWNES presented these cases. The first was a married woman with a negative family history. Two years following a shock of severe character she had nervous spasms which lasted three or four weeks, and, during the year following, she had several similar attacks. One year ago she began to notice tremors, which were at first periodical, but soon became constant. At the same time there was an enlargement of the thyroid and exophthalmos. The tremor was so severe that she was unable to work, to write or sew, or follow any employment; she was practically an invalid. This condition was accompanied by a marked erythema and profuse sweating, headaches, and diarrhea, relief being obtained only by rest in bed. On admission to hospital the thyroid was noted to be of fairly good size on the right side, being but little enlarged on the left side. The exophthalmos was very marked. The application of the ice-bag kept the heart's action down to 100. At operation he removed the entire left lobe and the isthmus. Photographs were shown of the patient before and after operation, showing the marked improvement which followed thyroidectomy. The tremor entirely disappeared at the end of one week, and her pulse went down to 80 by the tenth day. All the symptoms disappeared in time, and she was now attending to her housework without inconvenience. She gained fifteen pounds in weight and claimed that she felt better than she had for years. He believed these cases could be cured, and yet the exophthalmos still remain; why he did not know. Scopolamine-morphine anesthesia was employed. The second patient was a woman, 27 years old, who had typical Graves' disease of long standing. The symptom that bothered her the most was the irregular heart action. She was unable to work. At operation the entire gland was removed except one-quarter of the left lobe. The gland was about the size of the two closed fists, the exophthalmos being tremendous. The heart's action was only about 100. Four or five weeks after the operation quite a marked attack of myxedema appeared, which disappeared eventually without treatment. Since operation she steadily improved and now considered herself well.

Dr. JOHN ROGERS congratulated the doctor upon his good results, and said the employment of the local anesthetic he used had given rise to much discussion. But anyone who had watched the performance of these operations with local and with general anesthesia could not but be impressed with the advantage of the local form, in that there was less mauling and pulling of the gland and, therefore, less squeezing out of its toxic secretion.

Dr. FRANZ TOREK said he had had a case of exophthalmic goiter operated upon and supposed to be cured three years after operation, but during the fourth year there was a recurrence and the condition was as bad as before the operation. The operation consisted in the removal of one lobe. When the recurrence occurred thyroidine was given, but without good effect, and, therefore, a second operation was performed, taking away a good portion of the remaining lobe, cure following. He did not know whether this so-called cure would be permanent or not. The second operation was performed one and one-half years ago.

Dr. WILLY MEYER referred to a patient he had operated upon who had a specially stormy convalescence, and later he found her with the exophthalmos remaining. That was one symptom which seemed to persist in many cases.

Dr. JOHN ROGERS said he was impressed with the improvement in the exophthalmos; the thing was not an organic affair, no organic tissue being left; it was a purely vasomotor change. He emphasized the importance of care in using the cytotoxic serum and spoke of one case in which he had used it; four hours after he was sent for hurriedly, the messenger stating that the patient's eyes were coming out of her head. The exophthalmos was so pronounced that the lids closed over the posterior surface of the eyeball. After two hours this disappeared.

Dr. Downes closed the discussion.

Patient Cured by Implantation of Silver Wire for Large Abdominal Aperture; Well Five Years After Operation.—Dr. WILLY MEYER presented a woman who had a vaginal hysterectomy performed by another surgeon in 1894; during her convalescence it became necessary to remove her left ovary and left kidney. Following this there was much trouble in the healing of the wound, and she developed a median ventral hernia and was again operated upon, but the hernia returned when she lifted a heavy weight. Operation was refused by many surgeons she then consulted, none believing it could be cured. Dr. Meyer saw her in 1900. At the operation he stitched the omentum to the border of the almost round hole, in which he was able to place his fist, then peritoneum and skin were closed by continuous suture. Cure followed; later recurrence. In 1901 he reopened the wound, stitched the omentum again around the border of the aperture, from which it had torn loose in part, and then introduced a silver filigree plate 6 x 8 inches. It was sutured in place with continuous silver wire sutures. The wound healed by first intention, and patient was again cured. She weighed 250 pounds and was a cook. One day she struck her abdomen, which was very pendulous, against the sink and had a partial recurrence of the rupture. In the spring of 1901 Dr. Meyer again reopened the abdomen and found that the filigree had been perforated in the center, broken in two, and the hernia had reappeared in the center. Silver wire was now introduced, a net with narrow meshes made, and permanent cure followed. Dr. Meyer said that in these cases the implantation of silver filigree or silver wire was the only method promising a cure.

Case Illustrating Result of Implantation of Silver Wire, for Defects of Abdominal Wall, Several Years After Operation.—Dr. MEYER expected to show several such cases, but the cold weather kept all away but one, an unmarried woman, upon whom he had operated for a large ventral hernia over two years ago. There was a very large opening and he applied a ready-made silver filigree, with perfect results. Altogether he had had fifteen operations upon fourteen patients; twelve had been successful and three had failed.

Result of Plastic Operation for Carcinoma of Cheek.—Dr. FRANZ TOREK presented a man who had had a carcinoma of the cheek, which required, in its removal, the taking away of a large amount of tissue, especially healthy tissue; this left a large defect, which called for some plastic operation. The skin of the neck was utilized for this purpose, a large flap being made and turned over, so that the skin occupied the place formerly occupied by mucous membrane, the raw surface being turned outwards. A second operation was done, cutting the flap at its base and turning it up and over, so that the two raw surfaces came in contact, thus obliterating the raw side. Where the flap had been turned upon itself naturally a sinus was left, which was closed at a third operation. There was now a crop of hair on the inner side of his mouth, which apparently was gradually disappearing; if it did not entirely disappear he intended using the *x*-ray upon it or epilate.

Dr. WILLY MEYER said that he had seen two patients with regular beards in their mouths as the result of such a plastic operation, and they certainly were in a terrible condition. This was before the days of the *x*-ray.

Dr. HOWARD LILIENTHAL referred to a case in which a urethroplasty had been performed and the new urethra was choked by hair growing there, and the whole operation had to be done over again.

Dr. Torek said that he had followed up one case, and four months after operation hair grew as long as three

inches, disturbing the patient greatly in swallowing. The hairs were pulled out and never grew again.

Excision of Rectum, Sigmoid, and Transverse Colon, with Closure of Two Artificial Ani.—Dr. SAMUEL G. GANT reported this case. The patient was to have been presented, but failed to appear. The various operations performed upon this man were caused by an intractable diarrhea which began in 1888 and which could not be relieved, the result of stricture. The patient was operated upon by Dr. Kelsey of New York, Dr. Berneys of St. Louis, and by Dr. Gant. When Dr. Gant saw him the patient had two artificial ani, one discharging pus, the other discharging feces and an acid fluid which excoriated the skin. Dr. Gant performed a series of operations which relieved the patient.

Report of a Case of Appendicostomy.—Dr. GANT presented this case also. The patient was admitted to the hospital suffering from diarrhea. High colonic irrigations were used, which seemed to relieve him of his attacks for two or three weeks only, when they would recur. Extensive ulcerations were found; a simple hypertrophic proctitis had gone on to ulceration. Appendicostomy was performed and the patient had gained fifty pounds since operation. Dr. Gant said that he knew of no operation which would give such immediate results as appendicostomy in these cases.

Dr. R. H. M. DAWBARN spoke of a point in the technique first brought out by Dr. Meyer. At the time of operation he said it was wise for one not to take it for granted that there was no stricture in the appendix, but, after turning the appendix out, one should make sure of it by passing a catheter. A recent case of his had a chronic ulcerative colitis, presumably tuberculous. Every injection produced a crampy pain until an alkali was added. Since this patient had had a previous attack he said it was conceivable that a third attack would follow, and he, therefore, believed it would be a wise thing to leave the appendicostomy opening, covering it over with a pad. The annoyance caused by a tiny fistula was the lesser evil by far.

Dr. FRANZ TOREK uttered a note of warning in appendicostomy operations when the flushings were made by one not experienced, because of the possibility of rupturing the appendix and the fluid passing into the abdominal cavity In a case of this kind that he reported the patient died from shock, and not from a suppurative peritonitis. Access to the cecum should be the most direct possible.

Dr. Gant believed in leaving the appendix projecting about one-half an inch above the skin, so as to aid the nurse in finding the opening into it.

A Case of Marked Mental and Physical Improvement Following Nephropexy in an Insane Patient.—Dr. WARREN S. BICKHAM reported the case of a woman, 37 years old, who was admitted to the Manhattan State Hospital suffering from hysterical insanity. On admission she was depressed, hypochondriacal, quiet, compliant, connected in conversation, and reacted normally to her surroundings. She spontaneously spoke of nervous and hysterical attacks beginning seven years ago, and which had increased in intensity; of stomach troubles; of fainting attacks; of choking sensations; of fear of death, and of doing herself bodily harm. Her physical symptom-complex showed a poorly nourished woman, gait weak and staggering, poor muscular power, impaired sight of right eye, exaggerated reflexes, tremor of tongue, hands, and facial muscles, gastrointestinal disturbances, dull pharyngeal reflexes, subjective complaint of cardiac, pulmonary, and gastric distress, suffocating sensations, and a pulse variable in frequency. Her mental symptom-complex showed her emotional attitude was one of depression with many hypochondriacal complaints, marked instability in her emotional control, subjective complaints of shortness of breath, cardiac palpitation, fear of death, and various phobias. Dr. Robert C. Kemp found that she had a chronic gastritis and hyperchlorhydria, a displaced right kidney, a gastroptosis, etc. A right nephropexy was performed. The patient then showed an improved nutrition and her hypochondriacal complaints became less, and as her improvement in mental and physical condition improved she became hopeful of the future and manifested a desire to be at home. She gained thirty-five pounds in two months. During convalescence she was given electric and vibratory treatment. Her insanity was considered to be cured.

Dr. ROBERT T. MORRIS reported two cases of melancholia, both apparently well three years after operation of nephropexy. He did not believe that the major psychoses were caused by loose kidneys, but that the symptoms were precipitated by them and he, therefore looked upon floating kidney so called as a precipitating factor. One should not operate upon such cases for the purpose of curing the phychosis but to cure a definite tangible defect.

Cases of Wheel Injuries.—Dr. ROBERT T. MORRIS presented two cases, a man and a boy, who had been run over by heavy vehicles. The boy had sustained a compound comminuted fracture of the arm, without injury to the main nerves; while the man received no fracture of the arm but had musculospiral paralysis with its wrist drop, etc. The boy's arm was sealed, Dr. Morris depending upon the germicidal power of the blood; the bones were crushed or smashed. Both patients made good recoveries.

Wheel Injuries, Especially Those Due to Automobiles and Other Rubber-tired Vehicles.—Dr. E. M. FOOTE said that there was no word in English to express the injury due to the passage of a wheel of a vehicle over the human body. He suggested the term "wheel injury" as analagous to "gunshot injury," a phrase in common use. No satisfactory explanation had ever been given of the marvelous escapes from serious injury when persons were run over by heavy vehicles. The writer explained such escapes by saying that every part of the body had some very resisting structures, as well as some tender ones; that the wheel in its passage over the body was lifted a certain distance from the pavement by the resisting structures, bones, contracting muscles, etc., forming thus an irregular curve from the time that its rim left the pavement until it touched it again on the other side of the body. This curve was spoken of as the "dead-line." Whatever structures determined the summit of this curve, must bear the full weight of the vehicle plus whatever additional impact the speed of the vehicle imparted. If they escaped injury, it was because of their own strength. Organs which lay to the side of this summit, and beneath the "dead line," or were sufficiently elastic to be pushed beneath it without injury, were perfectly protected This explained why the intestines often escaped injury, when a wheel passed directly over the center of the abdomen. If the force was not great enough to crush the spinal column, everything else was safe unless it happened to be caught between the wheel and the spine. The mesentery had less chance of escape and was very frequently injured in accidents of this character. The writer hoped by experiments to learn just what structures were the most resisting in every part of the body, and how many pounds of pressure they could withstand with safety. When these facts were known, the surgeon who saw a patient after such an accident would be in a much better position to judge whether an operation was necessary or not. Clinical data were also essential and would add very much to our knowledge of this subject if those who were called to see patients suffering from wheel injuries would make note of the following facts: Sex, age, date of injury, type of automobile, weight when empty, number of occupants or character of load, speed (fast, moderate, slow), character of road surface; was patient struck by machine before being run over? How was patient lying when struck by wheel? Immediate symptoms, external injuries, internal injuries (early symptoms, late symptoms), result. The speaker requested that anyone called to see a patient suffering from wheel injury, would report to him, giving facts here noted, to enable him to pursue the study of this fruitful topic.

Dr. HOWARD LILIENTHAL said that Dr. Foote had opened up a new field for observation and thought the subject might be worked up so that if one knew the kind of vehicle and the kind of a road much information might be

given regarding what kind of an injury to expect. The so-called "dead-line" would have to be varied according to the speed of the vehicle.

Dr. R. H. M. Dawbarn said that it was a well established fact that with greater speed, greater difficulty was encountered in keeping the vehicle on the ground and little obstacles, like a cane, or even a pebble, would sometimes cause the automobile to go into the air and over considerable space.

Dr. Foote closed the discussion.

The Use of Silver Wire for the Cure of Large Hernias.—Dr. Joseph Wiener, Jr., drew attention to a somewhat neglected field of reparative surgery. The more he used silver wire for the cure of hernias the more convinced had he become to its value. The subject was first brought to attention by Witzel and Goepel, almost simultaneously in 1900. With the exception of articles by Willy Meyer, Bartlet and Perry, little had been written on this subject. The filigree he employed had been that devised by Bartlet, and he followed his directions closely. He advised the use of the ready made filigree made of thin wire, not heavier than gauge number thirty. An advantage of filigree over silver wire sutures was the fact that it could be introduced very quickly and could be placed between tissues at a much greater distance from the edges of the opening than would be possible in passing a needle. It should overlap the hernial opening on all sides. No sutures were required to hold the filigree in place, and so it could better adapt itself to the surrounding tissues, and there was less likelihood of its causing any irritation. If properly made and properly introduced it could cause no discomfort whatever; the patient would not even be aware of its presence. The form of filigree used by Dr. Wiener was that devised by Bartlet and described by him in his article in Volume 38, *Annals of Surgery*, 1903. In ten cases in which Bartlet used it, he had never had to remove it, and some of his cases had been under observation two years or more. Dr. Wiener said that five of the cases he reported were in Dr. Lilienthal's service. In a private case the wire was used for a ventral hernia following a median celiotomy. In two cases there were large inguinal hernias with wide separation of tissues. One case was an umbilical hernia, one a ventral hernia following an injury, one a ventral hernia following an operation, and in no case was it necessary to remove any of the wire.

Silver-wire Cable Suture-Material.—Dr. Howard Lilienthal presented this apparatus which was made of very fine wires, possessed great pliability, could be tied into a knot and, therefore, need not be twisted, was very strong, and possessed the decided advantage in that the scar tissue grew into its interstices and closed over better. The wires were so fine that they did not produce irritation of the tissues. After being tied in a double knot, it could be cut close and would not untie.

Dr. Willy Meyer said that he had operated on quite a number of his fifteen cases with implantation of silver wire netting, made during the operation, but he used the one made of ordinary silver wire; he emphasized the point that the ordinary silver wire would answer the purpose.

Dr. Joseph Wiener, Jr., said that the cable wire was exceedingly pliable and superior to the ordinary silver wire. Instead of using one filigree one might use several in hernia operations, as advocated by Bartlet. It was far preferable to use a filigree of silver wire for closing these large apertures than to depend upon an attenuated muscle for this purpose.

Stated Meeting, Held March 2, 1906.

Dr. Samuel Lloyd in the Chair.

Obstruction of the Ileocolic Valve and Appendicitis, from Ulceration of the Caput Coli and Adjacent Portion of the Ileum; Resection.—Dr. Walter M. Brickner presented this report and specimen. The patient was a man, aged forty-six, who for many years spent much of the day in the composing room of an evening paper, handling a good deal of warm type, much exposed to the fumes of lead and antimony. He had not had any of the ordinary evidences of lead poisoning. The present ailment began five years ago, and for about four years he had had irregular attacks of abdominal pain, lasting but a minute or two. They usually came on just as the patient sat down to eat, and they seemed to be associated with constipation. Recently he noticed that intestinal gurgling preceded the pain. In March, 1905, the attacks changed in character, severe attacks of pain occurring across the abdomen, lasting all night. There was no fever. Thereafter the attacks recurred at intervals of two or three weeks, usually at night. The patient could predict their appearance when he had no movement of the bowels, or when he indulged in hearty eating. The only positive findings on physical examination were marked tenderness and resistance in the right iliac region. Rectal examination was negative. Dr. Brickner gave the tentative diagnosis of chronic appendicitis, with a strong suspicion of some obstructing factor, possibly intestinal adhesions. After being admitted to Mt. Sinai Hospital the patient was placed in the hot bath to secure complete relaxation, and there was felt in a tender area an object which in size, shape, and location corresponded with the appendix. At operation the suspected rectrocecal appendix was found; it was obliterated at the tip and contained a drop of pus at its thickened base. The caput coli was much thickened. While the appendix was being tied off a small rent appeared in the cecum, which rapidly spread through the brittle tissue and soon gaped widely across the fundus of the cecum. The index finger passed into the gut showed the caput coli to be the seat of extensive and numerous ulcerations. No less radical an operation than resection could be contemplated, and about three inches of the ileum and four inches of the colon were resected and an end-to-end anastomosis performed easily. The following morning the pulse rose to 116 and continued to rise steadily to 130 by evening, when coffee-ground vomiting began. Reopening the wound, the speaker found no gross evidences of peritonitis and the site of anastomosis was satisfactory. The patient died on the following day, forty-eight hours after operation. The entire caput coli was found to be thickened, and its mucosa the seat of several rounded ulcerations, closely grouped. The ileocecal valve was the seat of inflammatory infiltration, almost occluding it. There was much edema. The condensed pathological report was that the mucosa was hemorrhagic and infiltrated with inflammatory cells. At the points of ulceration the mucosa was entirely necrotic, the muscular coat covered with a layer of fibrin. The remaining layers of the intestine showed inflammatory infiltration. The ileocecal valve was markedly infiltrated and was edematous. The ileum near the valve was also ulcerated. There were no microscopical evidences of tuberculosis, syphilis, or new growth. The cause of the ulcerations was undetermined. For lack of a better term, the condition must be called stercoraceous ulceration of the cecum. In closing, he said that of the few cases of ileocecal obstruction due to inflammation, no two, however, had presented the same appearances.

Dr. John F. Erdman asked how Dr. Brickner was able to make an end-to-end anastomosis unless the ileum was markedly dilated. Unless the ileum was considerably dilated there was great danger of leakage.

Dr. Emanuel Libman, referring to the difficulty of diagnosis, said that the tenderness in the deep iliac fossa had nothing to do with what was found at operation. The appendicitis in this case was in all probability set up by disease of the cecum. The symptoms produced were due to recurrences of the attacks of swelling of the cecum and ileocecal valve. It was impossible to say what the type of ulceration was.

Dr. Albert A. Berg said the most interesting point was whether the appendicitis was the primary cause, or was it

secondary. He had operated upon a number of cases in which the chronic form of appendicitis was accompanied with some thickening of the caput coli, as well as the parts above the ascending colon. With the paralyzed condition of this portion of the bowel there would be found conditions necessary for fecal stagnation in the caput coli which would tend to induce ulcerative conditions of the mucosa of the intestine.

Dr. Alexis V. Moschcowitz reported briefly a case in which the diagnosis was appendicitis. This diagnosis was concurred with, but the opinion was expressed with mental reservation that there might be a tumor of the cecum. The patient was sent to the hospital for resection of the cecum or ileocecal junction. The cecum was found to be thickened, with a distinct stenosis of the ileocecal valve. Several inches of the ileum were resected, as well as the adjacent portion of the cecum, and a side-to-side implantation of the ileum into the colon made. At the end of a week there occurred symptoms of acute intestinal obstruction, and the constriction was found to be caused by an organized band of tissue. The patient died on the day following the operation, and the specimen showed a papillary colitis with a stricture that would admit an ordinary lead pencil.

Dr. Samuel Lloyd said that two weeks ago he was called to see a patient in Princeton who had an appendicitis with a secondary infection of the colon; he found a large number of ulcerations.

Dr. Brickner, closing the discussion, said that the disparity in the size of the colon and ileum was not so great as to cause any difficulty in doing an end-to-end anastomosis; that the anastomosis was satisfactory was shown twenty-four hours after operation. The appendix in this case was not at all adherent.

Stricture of the Esophagus, Showing Good Results Three Years After Operation.—Dr. Charles R. L. Putnam presented a child, five years old, who gave a history of having swallowed a solution of caustic potash two and a half years ago, burning the throat, etc., with a gradual increase in difficulty in swallowing. When Dr. Putnam first saw the patient, she had emaciated to the last degree and was so weak she could not sit up without being supported. A stricture was found eleven inches from the incisor teeth. As improvement did not follow admission to the hospital he dilated the stricture according to the method of Dunham. As it was impossible to make the child suck the thread through a drinking tube, he was forced to pass it through a catheter in the nose. The water was then allowed to flow drop by drop into the pharynx, and the patient was encouraged to swallow frequently. When once the thread was started it passed readily into the stomach. The day following he did a gastrostomy after the method of Robson and Frank, and, four days later, hooked the thread out of the stomach. Three days later a whipcord was tied to the silk at its abdominal end and drawn out through the mouth, requiring a good deal of force. The epiglottis was protected by a bent metal tube, through which the cord was threaded as it came out of the pharynx. By a like tube the cardiac orifice of the stomach and the abdominal fistula were protected. The tube, by following the cord, easily found the opening of the esophagus. Later piano wire with a metal olive attached to its center was drawn through the stomach alongside the cord by the silk thread, which had also been left in place. The upper end of the wire was drawn out of the mouth until the bulb became impacted in the stricture. It was then held firmly while the cord was gently moved up and down like a saw. So soon as the bulb slipped through it was drawn up through the mouth and a larger one used at the same sitting, or a few days later. The esophagus was dilated in two sittings up to 23 Fr., after which bougies on guides were used through the mouth, twice a week for several months. The patient was then lost sight of for some time. She returned later, saying a piece of meat was in her throat; after passing a guide into the stomach she was able to swallow perfectly well. Bougies were again passed once a week, the size used being about 26 Fr. There had never been any leakage from the stomach opening, and it closed within a few weeks after manipulation through it was discontinued.

Resection of the Stomach, Performed Fourteen Months Ago, for Carcinoma.—Dr. Franz A. J. Torek presented this patient. He said that the statement often made, that a carcinoma of the stomach was no longer operable when it could be distinctly felt, was not discriminating. In this case the tumor was large and could not only be felt but seen. The operability of carcinoma of the stomach depended upon the question whether one could operate well beyond the limits of the growth, whether it was possible to remove affected glands, and whether or not neighboring organs were involved. In the case presented, Billroth's first method was followed, the stomach being joined to the duodenum by a Murphy button. The patient was in excellent health and had gained forty-five pounds.

Dr. Albert A. Berg spoke of the question recently brought up by Boas in reference to inoperable carcinomas of the stomach when palpable, following a careful study of malignant disease of the gastrointestinal tract. By a careful analysis he was able to state that of thirty cases operated upon within a period of twenty days after the first manifestations of the symptoms, it was found that in only four of these cases was a radical operation possible. In the vast majority of these cases no operation at all could be done. On the other hand, Boas found that cases going on for one year, the tumor being distinctly palpable, if submitted to operation, a radical procedure was possible. His conclusions were that there were a number of cases of carcinoma of the stomach inoperable from the beginning, *i.e.* they never gave symptoms when in an operable stage; when symptoms appeared they were no longer operable. Slowly-growing forms of tumor were not so malignant and were the best cases for radical operation. Boas was able to say that it was the slow-growing forms of carcinoma that formed favorable instances for surgical interference.

Dr. Torek said that more discrimination should be made in these cases. Regarding the time element in such cases, he knew that fourteen months was not sufficient to base results. The best statistics came from Mikulicz, who considered patients cured if they were well one year after operation.

Case Illustrating the Combined Operation for Appendicitis and Inguinal Hernia.—Dr. Torek presented this patient. The incision began at a point between the superior spine of the ileum and navel, one-quarter of the length of this line distant from the iliac spine, and ended over the external inguinal ring. The aponeurosis of the external oblique was split as in appendectomy, but the incision was carried down into the inguinal ring. The aponeurosis was dissected off and Poupart's ligament was exposed. The hernia operation was completed up to the point where the sac was divided. Then the appendicitis operation was performed in the usual manner by splitting the fibers of the muscles. This operation was completed to the point of closing the muscles. The aponeurosis of the external oblique was still left open. Now the deep layer of hernia sutures was applied, uniting the internal oblique and transversalis muscles to Poupart's ligament, and then the aponeurosis of the external oblique was sutured, covering the site of both operations. Lastly, the skin was sutured. The operation took but little longer than the hernia operation alone would, and the fact that the aponeurosis was divided but once secured greater strength than if two separate operations were made.

Two Cases of Volvulus of the Small Intestine with Unusual Features.—Dr. Albert A. Berg presented these patients. The first was a girl who was admitted to Mt. Sinai Hospital last summer, with the history that she had never been ill before. She never had any trouble in her abdomen until nine months prior to admission, when she began to vomit, and cathartics administered failed to cause a bowel movement. The vomiting was not a malignant

one. High and low enemata were given during nine days, with absolutely no movement of the bowels. When she entered the hospital she was in fairly good condition, pulse 120, with abdomen distended. Across the abdomen was noted a distended loop of intestine about the caliber of the forearm, while below it was a groove one inch in width; the circular distention was composed of coils of intestine whose caliber was somewhat less than the child's forearm. The caput coli was collapsed, as also were the transverse colon and sigmoid flexure. It was evident that the seat of the obstruction was proximal to the ileocecal valve. Laparotomy was decided upon. The intestine was found with its peritoneal coat completely split from it for several feet; the coat was thickened and split in several directions. The distended intestine was found to be the small one. Running along from its wall were multiple small diverticula between the muscular fibers of the intestine. The wall looked like masses of currants. After evacuating gas and fluid matter the opening was closed. The intestine was delivered and a complete turn found in a direction opposite to the hands of a clock, four inches from the cecal junction. After uncoiling this the intestines were replaced, the abdomen closed, and a perfect recovery followed. This case was of particular interest because of the spontaneous rupture of the peritoneal coat, and also the multiple diverticuli of the small intestine.

The second case presented symptoms of intestinal obstruction, repeated vomiting, inability to obtain a movement of the bowel, etc. There was no temperature, but the pulse was increased in frequency. At operation a volvulus of the small intestine was found, the seat being six inches from the ileocecal junction. There was a coil or turn of one and a half in the direction opposite to the hands of the clock. There was no gangrene. The volvulus was quickly and easily uncoiled and the intestine replaced. An enteric fistula formed, but this closed at the end of the fourth day. This was followed by a slight leakage, but a plastic operation completely closed this and the child made a good recovery.

Case of Echinococcus Cyst of the Liver.—Dr. Albert A. Berg presented this patient, a woman, who had been in this country but nine months. She never had had anything to do with dogs or cattle, and there was nothing in her history which could account for the development of the echinococcus cyst. She had no temperature. She was slightly jaundiced, the sclera being slightly tinged, and there was a small amount of bile in the urine. She was somewhat emaciated. The enlargement of the liver was smooth and no masses could be felt in the abdomen, leading to the impression that there was some malignant process in the liver secondary to intestinal or gastric carcinoma. Aspiration was done and this yielded a clear fluid, in which the hooklets of the echinococcus were found. A subpleural hepatotomy was done, the tenth rib being resected three inches and the pleura raised from the diaphragm without opening it. The diaphragm was incised and the liver packed off, and the large echinococcus cyst removed therefrom. The cyst wall was a single one. The specimen was presented.

Dr. William A. Downes presented the picture of a patient with echinococcus cyst of the liver, the left lobe being involved.

Excision of the Femoral Vein.—Dr. John F. Erdmann presented a man upon whom he had operated and a specimen of the femoral vein which had been excised as far down as Hunter's canal. The patient was thirty-six years old, who had never been ill. During the last two or three years he tapped the shoes of children and had a last in the crotch of the left thigh. He noticed a small lump in the thigh in Scarpa's triangle. He went to a hospital, where an incision was made over the tumor; then the wound was closed, the diagnosis being probably one of aneurysm. When Dr. Erdmann saw the patient the tumor practically filled Scarpa's triangle, pulsations being noted in its extreme outer limit. In six months the patient had lost nine pounds. There was no pain and no swelling of the feet or legs, or other evidences of pressure. The tumor was dissected out from below upward; it extended up under Poupart's ligament into the pelvis. Since operation there had been no edema of legs or feet. No report had been received from the pathologist.

The Contagiousness of Gumma.—Dr. Charles M Williams read this paper (to be published in a later issue).

Dr. L. Duncan Bulkley said that the question raised upon the duration or possibility of infection by any of the lesions of syphilis was an interesting one, and that we must revise our views regarding the real situation. There did not seem to be any reason for saying that if the lesion of syphilis took the form of gumma it should not be as infectious as other lesions of syphilis at that same period, as three years after the initial lesion. The explanation that the location of gumma was not where it was likely to give infection was probably correct. Dr. Bulkley said he could not recall more than four cases of gumma of the penis. None had known of chancre of the finger occurring in those who handled gummatous cases.

Dr. James Pedersen said that we were compelled to change our views regarding syphilis being a clinical entity. He asked if the question did not reduce itself to a consideration of how long syphilis was infectious in a given individual. Did it not turn upon the patient's power of resistance to disease in general, and syphilis in particular, how thoroughly treated, and how he responded to treatment? Were these cases carefully and persistently treated? If syphilis was to be transmitted there must be some open lesion.

Dr. Williams believed that it was very important to determine whether or not syphilis was contagious; any person having a lesion of syphilis, even after many years, he believed to be capable of infecting others. He thought the effect of time in lessening the power of the disease had been overrated. Both time and treatment were important factors in extinguishing syphilis.

Remarks on a New Form of Intestinal Obstruction.—Dr. Alexis V. Moschcowitz read this paper, confining his remarks to one incidental step in the operative treatment of volvulus of the sigmoid flexure, namely, that of prevention of its recurrence. After a very careful search of the literature, he said he had found fifteen cases of recurrence; in addition there were many cases in which there was strong presumptive evidence that repeated attacks of volvulus preceded the one for which operation was done. He felt that he was safe in assuming that these recurrences were not very uncommon. The methods suggested and carried out in order to prevent such recurrences were quite numerous, and he briefly reviewed these various methods. He excluded from the discussion all cases of gangrenous volvulus, and confined his remarks wholly to those cases in which the question arose, What had best be done to prevent a recurrence? He had had occasion to operate upon five cases during the past four years, and sigmoidopexy was performed in these cases with satisfactory results except in one case, which formed the basis of this communication and which he reported in full. S. S., forty-one years of age, was admitted to Mount Sinai Hospital, January 18, 1905. His family history was negative. His past history showed that previous twistings of the gut had occurred. His present attack began like its predecessors, with cramp-like pains in the abdomen, distention, and absolute constipation, neither fecal matter nor gas escaping. Two days previous to admission to the hospital the patient began to hiccough and vomit, the latter becoming fecal. The distention was so great that the anteroposterior diameter exceeded by far the lateral. The epigastric and right hypochondriac regions were occupied by an enormous, semilunar, smooth, rounded, tense, and tympanitic mass, below which coils of distended gut were seen in peristaltic motion. There was no particular point of tenderness, and there was no marked rigidity of the muscles. An enema was given, but the capacity of the rectum was only about six ounces and the injected water returned without either fecal matter

or gas being passed. Incision revealed enormously distended coils of intestine. The general direction of this gut was diagonal, passing from the left iliac fossa upward and to the right, terminating, in the region of the liver by an arch-like formation. It was at least three feet in length and six inches in diameter, deeply injected, and of a deep red, almost purple, color. Danger of rupture seemed imminent. The bowel was twisted around an arc of 360°. After being emptied by means of the rectal tube, the bowel was stitched to the left half of the anterior abdominal wall by a number of interrupted silk sutures. The abdominal incision was rapidly closed by through-and-through silk sutures. The duration of the operation was thirty minutes. In February symptoms of intestinal obstruction again became pronounced and an exploratory operation was decided upon. Upon opening the abdomen, coils of distended small intestine presented. The sigmoid was found adherent to the anterior abdominal wall where it was sutured at the former operation. The coils of distended small intestine were traced to the outer left side of the sutured sigmoid and were apparently incarcerated between it and the lateral abdominal wall. Adhesions were liberated and the intestines replaced into their normal position. The patient died two hours after the completion of the operation. That in theory this operation had caused misgivings in the minds of some authors was shown by a review of the literature on this subject. It made no difference how far to the left we went with the suture, a septum was bound to be created which would divide the abdominal cavity into two halves into which one or more loops of the small intestine might slip and become strangulated. Although he had not been able to find a single case of such an accident in literature, the occurrence of the accident cited proved that sigmoidopexy was not an ideal method. After reviewing Obalinski's, Senn's, Roux's, Reidel's, and Philippowitz's methods of endeavoring to prevent a recurrence of volvulus, he concluded that in all of them there were inherent certain objections. He regretted that he was unable to offer a better substitute than the operations which he had enumerated. In spite of his experience his deductions in regard to the proper procedure had not been materially altered. He was prepared to say that sigmoidopexy was the best possible procedure in order to prevent a recurrence of volvulus. If the general condition of the patient and the local conditions were favorable, he would not hesitate to resect.

Congenital Obliteration of the Esophagus, with Esophagotracheal Fistula.—Dr. Charles R. L. Putnam presented this specimen.

College of Physicians of Philadelphia.

At a stated meeting held March 7, Dr. Wm. L. Rodman exhibited "A Patient in Whom Gastroenterostomy Failed to Relieve Hematemesis and Other Symptoms in Connection with Duodenal Ulceration." As a final resort, it was proposed to perform pylorectomy. Dr. Rodman also demonstrated two cases showing the results of Warren's operation for the removal of benign neoplasms of the breast. The incisions are made below and at the sides of the mammary gland, which as a result can be turned up. The new growth, or perhaps cyst, can then be removed and the gland restored to its normal position. There is no deformity, and the scar is concealed by the overhanging breast. Dr. Charles B. Worden presented a communication entitled "A Clinical Study of Gastroptosis, with Special Reference to Outlining the Stomach." In addition to other measures for determining the size and position of the stomach, such as percussion, inflation, auscultatory percussion, and the use of the tuning fork, *x*-ray pictures were taken after the ingestion of an emulsion of bismuth. Often the results obtained by other means of investigation were merely confirmed, but not rarely information was obtained that otherwise would have escaped attention. A series of interesting conditions was depicted by means of lantern slides, and Dr. Henry K. Pancoast described the technique and exhibited *x*-ray pictures made in the course of the study. Dr. Alfred Gordon read a paper entitled "Is Neuralgia a Functional Disease? A Study Based Upon the Pathological Findings in Eight Cases." In all of the cases degenerative changes in the affected nerves were found, and in four, occurring in persons of mature years, changes in the blood-vessels also were present. Dr. Gordon was inclined to think that the distinction between neuritis and neuralgia is an ill-defined one, and that the changes in neuralgia are essentially peripheral. Drs. Wm. G. Spiller and Chas. H. Frazier read a paper entitled "Upon the Results of Cerebral Decompression." They reported a number of cases presenting symptoms of cerebral tumor, in which the new growth was either not localizable or not removable, but in which an opening in the skull was followed by relief or disappearance of headache, vomiting, optic papillitis, ataxia, paresis, and other symptoms. In some instances the patients were able to do a certain amount of work and to lead useful lives for a number of years. Drs. Spiller and Frazier also presented a communication entitled "Nerve-Stretching for the Treatment of Erythromelalgia." They showed that this disease is dependent essentially upon inflammatory or degenerative changes in the terminations of the nerves involved, and that vascular alterations may or may not be present, and on the basis of this fact they were able in several cases to afford relief from the exquisite pain attending the disorder by stretching of the trunks of the nerves concerned.

Philadelphia County Medical Society.

At a stated meeting held March 28, a symposium on "Sanitary and Moral Prophylaxis" was held. Dr. Prince A. Morrow of New York, president of the American Society of Sanitary and Moral Prophylaxis, delivered an address, in the course of which he gave an outline of the work of the Society during the past year, relating the difficulties by which the medical man is beset in inaugurating a crusade against the conservatism that fosters gross ignorance on the subject of vice and its physical effects. The public needs to be instructed as to the imminent dangers by the medical profession, in conjunction with other influences and agencies. The work of the American Society of Sanitary and Moral Prophylaxis had been instituted along four lines, namely, education of the youth in hygiene and social truths in the home and the school, education of young men and women of the working classes, dissemination of hygienic knowledge in the army and the navy, and education of the general public. Dr. Morrow criticised the newspapers for inserting objectionable advertisements, and for their objection to printing articles of an informing nature in their reading columns. Dr. Edward Martin spoke of "Syphilis and Gonorrhea of the Innocent." He urged the education of children in matters of vital physiology. He alluded to the enormous power of the press and the opportunity afforded of educating the public to a realization of the dangers of vice. Dr. W. M. L. Coplin discussed the question, "What Can Health Boards Do in Limiting the Spread of Venereal Diseases?" He maintained that official supervision of vice does not act as a deterrent. He advocated educational rather than restrictive measures, and he suggested that much could be done through the schools in enlightening young persons in matters of sexual hygiene. Dr. Robert N. Willson, Jr., read a paper entitled "The Influence of the Young Man in the Control of Venereal Diseases." He pointed out the great prevalence of venereal diseases among students in colleges and universities. Dr. Joseph Price presented a communication entitled "The Transmission of Venereal Diseases to the Wife and the Evil Results Thereof." Dr. Wm. B. Hale, managing editor of the *Public Ledger*, spoke of "The Social Evil from the Publicist's Viewpoint." He expressed doubt as to whether the newspaper, going into the hands of old and young,

sophisticated and innocent alike, constituted the best medium for the circulation of warnings against the social evil. The press could, however, contribute largely to the success of the movement by declining to publish matter of a suggestive or inflammatory character. On the press rested the heavy responsibility of keeping the general tone of public sentiment sound and sweet, and thus of furnishing the foundation for the specific work for purity of mothers, the medical profession, and the pulpit. Rev. Dr. Floyd W. Tompkins discussed "The Social Evil from the Viewpoint of the Pulpit." He was opposed to the segregation of vice, and he held that the minister must speak plainly to his people, being sustained in his efforts by the physician.

Chicago Surgical Society.

At a meeting held February 2, 1906, Dr. W. R. Cubbins reported a case of esophageal polyp which he removed by operation. He exhibited the specimen. The patient was a man, forty-five years of age. The tumor was situated on the anterior portion of the esophagus, with the pedicle a little to the left of the median line, just above the larynx and cricoid cartilages, and extending down into the esophagus for about seven inches. It was ligated, the tumor removed, and the wound closed with packing. The tumor measured sixteen centimeters in length, just above the lower end it was rather cone-shaped, and was five centimeters, and at the pedicle one centimeter in diameter. It weighed 210 grams. Dr. B. W. Sippy read a paper on "Diagnosis of Esophageal Lesions." The author took up the functional and anatomical diseases of the esophagus, one of which he said related to sensation, and the other to motility. Sensory and motor disorders were discussed at length. As to ulcer of the esophagus, it seldom occurred except in association with carcinoma. There had been less than forty cases of peptic ulcer of the esophagus reported. By far the most common and serious disorders of the esophagus were related to conditions producing obstruction to the lumen of the tube. He exhibited a specimen of dilatation of the esophagus due to cardiospasm, a gastroenterostomy having been performed for the relief of an alleged pyloric stenosis. Tumors of the esophagus may be benign, but are usually carcinomatous. Sarcoma may invade the esophagus from the surrounding structures. He spoke of diverticula of the esophagus, saying that three forms based on etiology were recognized—pressure diverticula, traction diverticula, and traction-pressure diverticula. These forms were discussed at length. He said that the chief value of the esophagoscope was for the removal of foreign bodies. Dr. Edward H. Ochsner exhibited some concretions which were found in a pancreatic cyst. Dr. John L. Porter discussed the diagnosis and treatment of coxa vara. Dr. D. A. K. Steele reported an interesting case of single kidney in the median line, with two ureters.

Chicago Medical Society.

At a meeting, held February 7, 1906, Dr. A. P. Heineck read a paper on "Gross Abnormalities of the Appendix Vermiformis Noted in 3,559 Post-Mortems." He drew the following conclusions: The appendix is almost always an intraperitoneal organ; exceptionally, it is extraperitoneal. It has been found in nearly every portion of the abdominal or pelvic cavities. It may form the contents or part of the contents of a hernial sac. Its presence in a hernial sac does not render it immune from the lesions to which it is subject when normally located. It may be adherent to any intraperitoneal organ or structure, or to some extraperitoneal structures, such as kidney, retrocolic cellular tissue, etc. Pathological conditions have been found which seem to indicate that inflammations can extend from it to neighboring organs and structures to which it is adherent, and *vice versa*. In diagnosing obscure abdominal and pelvic conditions, the probability of a previous or of an existing appendicitis must be considered. Pus may be present within the cavity of the appendix, within the walls of the appendix, or the condition of periappendical abscess may occur. Inflammations of the appendix may terminate in resolution, in adhesion, in obliteration, in interstitial thickening, in gangrene, ulceration, and perforation of the organ, or in suppuration. One attack of appendicitis predisposes to other attacks, until complete obliteration of the lumen of the appendix has taken place. The lodgment of foreign bodies in the lumen of the appendix is an infrequent occurrence, only two cases, excluding enteroliths, having been observed in 3,560 cases. Neoplastic disease of the appendix is uncommon. It is probable that they are almost always secondary, although some primary cases have been reported. This organ may be the seat of lesions of the same nature as can occur in other portions of the alimentary canal, viz., typhoidal, tuberculous, actinomycotic, dysenteric, etc. Tuberculous appendicitis is almost invariably secondary. The lessened frequency during the last decade of diffuse suppurative peritonitis following operations for appendicitis is due to more exact diagnosis, to earlier operation, to excision of the appendix and of its mesentery in cases not complicated by periappendical abscess, to better and more perfect technique on the part of the operator, and finally to limiting the surgical intervention in cases of periappendical abscess to incision and evacuation and drainage of the pus cavity, if the appendix be not easily accessible. Dr. Wm. J. Butler read a paper entitled "Febrile Temperatures During the First Days of Life." The author stated that abnormalities in temperature during the first days of life were frequently overlooked, owing to the lack of systematic observation with the thermometer, which alone made it possible in many cases to determine the presence of disease. The rectal temperature of the newborn averaged 37.8° C. (100° F.); it dropped one or two degrees during the first few hours, returning to 37.5° C. at the end of thirty-six hours. There was a second decline on the fourth day, followed by a rise, reaching its maximum on the eighth day. Abnormal elevation of temperature was frequent, reaching in the experience of Eross 43 per cent. That it was due to infection or toxemia was shown by the result of prophylactic measures, which reduced the percentage to 11.38. The infection might come from the birth canal or be communicated after birth; it might enter through the navel, the respiratory, or the gastrointestinal tract. The author reported four cases, constituting a small ward epidemic, with autopsy findings in one fatal case. The temperature was elevated in all, reaching 40.5° C. (105° F.) in two cases; the course of the fever was remittent, and lasted from ten to fifteen days or more. There was catarrh of the nose and pharynx, some cough, mild gastroenteritis, and in two cases a skin eruption. Restlessness, sometimes drowsiness, was not noted; occasional vomiting and irregular bowel movements occurred; the urine showed a brick-dust deposit, and in one case anuria. The cases showed that this was the result of the high temperature, rather than its cause. There was more or less discharge from the umbilicus, but the autopsy did not sustain a theory of infection through this channel. Catarrh of the bronchi was established by the autopsy, and bacterial studies indicated that this was due to the micrococcus catarrhalis and to the pneumococcus. There was decided evidence of contagion, as the infants affected were those placed in the same cot with the first case, while others in the ward escaped. Prophylaxis required aseptic treatment of the cord, avoidance of infection from the mother or attendant, and the isolation of the sick child. Treatment consisted in sponging or bathing for the high temperature, diluting the breast milk with sterile water or limewater, enteroclysis, and small doses of calomel for the gastrointestinal disturbance, water by mouth and rectum, with sodium bicarbonate in enema for the tendency to anuria, and local swabbing of the nares with boric acid solution.

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery.	Montgomery	May	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	July	2.
Arkansas*	J. P. Runyan, Little Rock	Little Rock	July	10.
California*	Chas L. Tisdale, 530 California Street, San Francisco	San Francisco	August	21
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July	3.
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July	10
Delaware	P. W. Tomlinson, Wilmington	Dover	June	19.
Dis. of Col'bia	W. C. Woodward, Washington.	Washington	July	12.
Florida*	J. D. Fernandez, Jacksonville.	Jacksonville	October	17.
Georgia.	E. R. Anthony, Griffin	Augusta. / Atlanta	October	9.
Idaho	J. L. Conant, Jr., Genesee	Lewiston	October	2.
Illinois	J. A. Egan, Springfield	Chicago	May	23.
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis.	May	22.
Iowa	J. F. Kennedy, Des Moines.	Des Moines.	June	—
Kansas	T. E. Raines, Concordia	Topeka	May	1
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October	23
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	May	3.
Maine	Wm. J. Maybury, Saco	Augusta	July	10.
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	20.
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May	8.
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	12.
Minnesota	O. E. Linjer, 24 South Fourth Street Minneapolis	St. Paul	June	5.
Mississippi	J. F. Hunter, Jackson	Jackson	May	8.
Missouri	J. A. B. Adcock, Warrensburg			
Montana*	Wm. C. Riddell, Helena	Helena	October	2.
Nebraska	Geo. H. Brash, Beatrice	Lincoln	May	29.
Nevada	S. L. Lee, Carson City	Carson City	May	7.
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July	6.
New Jersey	E. L. B. Godfrey, Camden	Trenton	June	19
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	4.
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo,	May	22.
N. Carolina*	Geo. W. Pressly, Charlotte	Charlotte	May	23.
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July	3.
Ohio	Geo. H. Matson, Columbus	Cincinnati, Cleveland, Columbus,	June	12.
Oklahoma	J. W. Baker, Enid	Guthrie	June	27.
Oregon*	B. E. Miller, Portland	Portland	May	10.
Pennsylvania.	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburg,	June	19
Rhode Island	G. T. Swarts, Providence	Providence	July	5.
S. Carolina	W. M. Lester, Columbia	Columbia	June	12.
S. Dakota	H. E. McNutt, Aberdeen	Watertown	July	11.
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	2.
Texas	T. T. Jackson, San Antonia	Dallas	June	12.
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July	2.
Vermont	W. Scott Nay, Underhill	Burlington	July	10.
Virginia	R. S. Martin, Stuart	Richmond	June	19.
Washington*	C. W. Sharples, Seattle	Tacoma	July	3.
W. Virginia*	H. A. Barbee, Point Pleasant	Charleston	July	10.
Wisconsin	J. V. Stevens, Jefferson	Madison	July	10.
Wyoming	S. B. Miller, Laramie	Cheyenne	June	6.

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

District of Columbia allows reciprocity, but only on the following conditions: "(*a*) No applicant shall be licensed who is not of good moral character and free from mental defects and drug habits liable to interfere with the proper practice of medicine and surgery; (*b*) nor who, at the time of making application, and for not less than two years prior to the date thereof, has not been lawfully authorized to practise medicine and surgery, and actually engaged in such practice, in the jurisdiction wherein he resides; (*c*) nor unless the applicant acquired the right to practise medicine and surgery in such jurisdiction under conditions equivalent to those with which he would have had to comply in order then to have practised medicine and surgery in the District of Columbia; (*d*) nor unless the jurisdiction, by virtue of whose license the applicant seeks exemption from examination in the District of Columbia, grants to licentiates of the Board of Medical Supervisors of said District privileges equivalent to those which the applicant seeks; (*e*) nor until the applicant has paid to the Board of Medical Supervisors aforesaid such fee as may be fixed and required by the regulations of said Board, but not more than the fee charged under similar circumstances by the jurisdiction by virtue of whose license the applicant seeks exemption from examination."

New Jersey.—The medical license of New Jersey is indorsed, at this time, in lieu of further examination, by Maine, New York, Vermont, Delaware, Virginia, South Carolina, Texas, Ohio, Illinois, Michigan, Minnesota, Wisconsin, Kansas, and Colorado. New Jersey will indorse the medical license issued by any State after examination, whose educational, examining, and licensing those of New Jersey, irrespective of reciprocity, provided the applicant complies with the conditions of requirements are substantially equal to, or higher than, indorsement.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cas and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending April 21, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	375	188
Diphtheria	312	58
Measles	1566	46
Scarlet Fever	212	18
Smallpox	2	.....
Varicella	138	.....
Typhoid Fever	23	7
Whooping Cough	33	1
Cerebrospinal Meningitis	48	29
Malarial Fever	.....	.....
Totals	2,709	347

Spontaneous Disappearance of Moles.—Dr. L. Spitzer describes a large verrucose pigmented mole present from birth upon the thigh of a man 24 years old. At the age of 4 years it began to disappear, shrinking at its lower part and gradually disappearing from below upward, the black hairs falling as the warty parts receded. He mentions a similar instance reported by Lassar in 1895. Here, however, the gradual shrinkage occurred during a five weeks' course of Fowler's solution.—*Dermatologische Zeitschrift.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Puhlic Health and Marine Hospital Service for the week ending April 21, 1906:

SMALLPOX—UNITED STATES

		CASES.	DEATHS.
California, San Francisco	Mar. 31–Apr. 7	41	1
District of Columbia, Washington	Apr. 7–14	1	..
Louisiana, Shreveport	Apr. 7–14	1	..
Missouri, St. Louis	Apr. 7–14	6	..
West Plains	Mar. 8	1	..
Montana, Beaverhead, County	Mar. 1–31	2	..
Park County	Mar. 1–31	1	..
New Jersey, Rutherford	Apr. 7	1	..
New York, New York	Apr. 7–4	5	..
North Carolina, Greensboro	Apr. 7–14	2	..
Pennsylvania, Pittsburg	Mar. 31–Apr. 7	2	..
Texas, Houston	Apr. 7–14	1	..
Vermont, Richford	Apr. 12	2	..
Wisconsin, Appleton	Apr. 7–14	5	..

SMALLPOX—FOREIGN

Brazil, Rio de Janeiro	Feb. 18-Mar. 15	2	3
China, Canton	Mar. 3		Present
Hongkong	Feb. 24–Mar. 3	11	5
France, Paris	Mar. 24–31	6	1
Germany, Bremen	Mar. 25–Apr. 1	2	..
Great Britain, Bristol	Mar. 25–31	2	..
Glasgow	Mar. 30–Apr. 6	1	..
Greece, Athens	Mar. 15–22	..	2
India, Bombay	Mar. 13–20	..	18
Calcutta	Mar. 3–10	..	102
Karachi	Mar. 11–18	33	17
Madras	Mar. 10–16	..	39
Rangoon	Mar. 3–10	..	101
Italy, General	Mar. 15–22	35	..
Mexico, Tuxpam	Mar. 27–Apr. 3	..	1
Russia, Odessa	Mar. 25–31	10	2
St. Petersburg	Mar. 10–24	12	2
Spain, Barcelona	Mar. 21–31	..	6

YELLOW FEVER

Brazil, Rio de Janeiro	Feb. 16–Mar. 18	10	6
Honduras, Choloma	Apr. 5	6	..
Nicaragua, Managua	Mar. 10–17	..	1

PLAGUE—UNITED STATES

Delaware, Reedy Island, Quar'tine.	Apr. 6–11	2	1
(On Steamship Burrisfield, from Bombay.)			

PLAGUE—INSULAR

Hawaii, Honolulu	Apr. 14–15	..	2

PLAGUE—FOREIGN

Brazil, Rio de Janeiro	Feb. 18–Mar. 18	10	6
China, Hongkong	Feb. 24–Mar. 3	8	7
Egypt, General	Mar. 24–29	7	5
India, General	Mar. 3–10	..	2623
Bombay	Mar. 13–20	572	572
Calcutta	Mar. 3–10	..	83
Karachi	Mar. 11–15	52	44
Rangoon	Mar. 3–10	..	48

CHOLERA

India, Bombay	Mar. 13–20	..	2
Calcutta	Mar. 3–10	..	44

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 18.
Whole No. 1852.

New York, May 5, 1906.

$5.00 Per Annum.
Single Copies, 10c

Original Articles.

A CASE OF HETEROPLASTIC OVARIAN GRAFTING, FOLLOWED BY PREGNANCY, AND THE DELIVERY OF A LIVING CHILD.*

By ROBERT T. MORRIS, M.D.,

NEW YORK.

PROFESSOR OF SURGERY IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; FELLOW OF THE NEW YORK ACADEMY OF MEDICINE; MEMBER OF THE AMERICAN MEDICAL ASSOCIATION, ETC.

Mrs. H. W. was sent to me at the Post-Graduate Hospital by her physician, Dr. H. L. Barker of Woodside, New York, on February 1, 1902. She was 21 years of age, began menstruating at 15, and stopped menstruating at 19. Previous to the cessation of menstruation the function had been of average character. She was married at the age of 18, became pregnant soon after, and had a miscarriage at the third month. During the two years previous to her entrance into the Post-Graduate Hospital she had suffered from the common menopause symptoms of pelvic pain, headache, and hot and cold flashes. These symptoms had steadily increased in intensity, and were most marked at the times when the monthly flow should have appeared.

I made a diagnosis of cirrhotic ovaritis and asked the patient to remain in the hospital until an opportunity presented for obtaining ovarian grafts from some other patient, to replace her own ovaries, which were to be removed. A week later Mrs. W. was prepared for operation, but as I did not quite like the character of the ovaries from which grafts were to be taken, the patient was asked to wait for a better choice. On February 11, 1902, Dr. H. J. Boldt had occasion to operate upon Mrs. G. P. for uterine prolapse. Mrs. P. was 33 years of age, and the mother of three children. Her ovaries were normal excepting for the congestion common to prolapse cases. While Dr. Boldt was operating I removed from Mrs. P. ovarian tissue in the form of a wedge-shaped ribbon, not quite as much as usual in my experimental work, but enough to be incidentally beneficial in relieving the congestion for Mrs. P. at the same time that grafts were obtained for Mrs. W. The grafts were placed in physiological saline solution at a temperature of 100° Fahrenheit, and maintained at the temperature by a nurse until the abdomen of Mrs. W. had been opened through a short median incision. (It is important in dealing with delicate structures to choose the saline solution, which is isotonic with human blood.)

The ovaries of Mrs. W. were removed with Tuffier's angiotribe. The reason for choosing this method is because the ligation methods are apt to be incomplete in assuring absolute removal of all ovarian tissue. When the broad blades of the angiotribe close upon the pedicle of the ovary, the ovary is crowded away from its seat and rises above the blades, thereby avoiding the possibility of leaving ovarian tissue behind. I have been particular in developing this point of technique in ovarian grafting, and in our experimental work with rabbits, my associate, Dr. L. A. di Zerega, has insisted that we must not allow even a particle of scraping from an excised ovary to fall back into the peritoneal cavity, because a single detached ovum might live in contact with the peritoneum long enough to invalidate the experiment. After removal of each ovary of Mrs. P., a slit was made through the peritoneum of the broad ligament on either side, parallel with the oviduct, and dorsad from the original seat of the ovary. Into each slit was placed a segment of ovary from Mrs. P., about one-half inch long, and one-fourth inch wide. A single catgut suture was placed in such a way as to hold each graft in place. Grafts are so placed that the cut surface of the ovary lies in contact with the cut surface of the broad ligament, in order that the nutrition of the graft may be maintained through the lymph circulation, pending the formation of new capillaries. Uncut surface of ovary is allowed to project into the free peritoneal cavity, to facilitate the free escape of ova. The uterus and oviducts of Mrs. W. were apparently normal. The ovaries removed from Mrs. W. were given to Dr. H. T. Brooks for microscopical examination, and he reported later that they were cirrhotic ovaries, distended with many small cysts, and containing no formed Graafian vesicles. Mrs. W. and Mrs. P. made customary recoveries from their operations.

Present at the operation upon Mrs. W. were Dr. H. J. Boldt of New York, and the hospital staff assistants, Dr. R. G. Treacy, now of New Haven, Conn.; Dr. W. H. Allee, now of Stamford, Conn., and Dr. D. W. Cairns, now of New York.

On July 1, 1902, I received a letter from Dr. H. L. Barker, stating that for about a month after Mrs. W. returned from the hospital she felt well excepting for a continuance of the hot and cold flashes. On June 18, 1902, four months after the grafting, Dr. Barker wrote that Mrs. W. had at that date menstruated, menstruation lasting for five days. (Grafted patients have usually first menstruated at periods varying from two months to five months after the operation.)

On March 28 of the following year (1903) Dr. Barker again wrote, stating that he had just seen Mrs. W. and obtained the following history: After the menstruation of June, 1902, she did not again menstruate until November 16 of the same year, when she flowed for one day. The next month, December 15, she flowed for four days, and menstruation after that became regular, with a flow for four or five days at each period. The patient was "feeling perfectly well and happy."

Nothing more was heard from Mrs. W. until March 28 of the present year (1906), when I received a letter from Dr. Robert Lount of Hempstead, N. Y., stating that he had under his care a patient by the name of Mrs. H. W., who informed him that she was one of my ovarian grafting pa-

*A paper read at the meeting of the Surgical Section of the New York Academy of Medicine, April 6, 1906.

tients. He had on March 15, 1906, delivered her of a daughter weighing seven and one-half pounds, and mother and daughter were doing well, excepting for some manageable complications on the part of the mother. On April 4 I received a subsequent letter, stating that mother and daughter were doing well, and that the mother had a good flow of milk.

On April 14 I received a letter from Dr. H. L. Barker stating that he had examined Mrs. W. when she was about four months pregnant, but on account of her distance from his circuit of practice he had depended upon others for her care at parturition.

So far as I can judge we have in this case a well-defined instance of heteroplastic ovarian grafting, followed by pregnancy, and the delivery of a normal child. If the pregnancy had appeared in one of my earlier grafting cases, when the ligature method for removal of ovaries was employed, I might have been a trifle skeptical about the nature of the case, but this pregnancy occurred after the adoption of a technique which was, to my mind, satisfactory in eliminating any weak points in our work.

Through all of the varying ideas on the subject of ovarian grafting during the past few years I have felt that some one would eventually get a child out of some case of homoplastic grafting, as our experiments upon rabbits and other animals seemed to show that when the ovary of an animal was removed from the body, and then reintroduced in its original host, there was a tendency for the ovary to live, and to continue its function. When, on the other hand, ovary was grafted from one animal into another, the principle of intolerance of the tissues of one animal for the tissues of another animal came into play, and there was a tendency for the grafted ovary to degenerate or to become absorbed. It was noted, however, that there were various degrees of tolerance shown, and this seems to be an important point. One animal would absorb the ovaries of another animal very rapidly, while a third animal might carry the ovaries of a fourth for several months. In the case of Mrs. W. it is probable that we have an instance of tolerance for the tissues of Mrs. P. that may have amounted to complete tolerance. It is important for us to experiment along lines which will allow us to prepare animals for tolerating the tissues of each other, and I had planned to do this work, but in the midst of active practical professional work experiments go along slowly, and at the present moment I have material collected for an experiment in another field entirely, and which will demand every hour of spare time for a year at least.

At Cornell University Medical Laboratory I carried on one line of experiments, suggested by the known principles of hemolysis, with the assistance of Dr. James Ewing, Dr. George H. Ryder, and medical students, Messrs. E. D. Watkins, W. E. Drennan, and R. E. Pou. A series of rabbits were made immune to each other's serum, and their ovaries were then exchanged. These ovaries, as anticipated, were absorbed more rapidly than in animals not immune to each other's serum, but I wished simply to get the facts, in order to make use of the negative testimony.

In women I have, up to the present time, done homoplastic and heteroplastic ovarian grafting in fourteen cases, and in one case made a homoplastic graft of the fimbriated extremity of an oviduct in a case of fibronodular oviduct. The fimbriated end was fastened to the cornu of the uterus after excision of the nodular area, which included nearly all of the tube.

So far as I know there has been but one other case of conception among my grafted patients. This was in a case of homoplastic ovarian grafting, and the patient had a miscarriage at the third month. The case was not properly safeguarded for scientific report, and I have said little about it, and have not asked the profession to accept the testimony, but personally there is to my mind no reason for doubting the statements of the patient herself. I expect much of homoplastic grafting, but had about given up hope of obtaining pregnancy in heteroplastic grafting cases until we could prevent patients from absorbing the grafted ovary, and this case of the child of Mrs. W. came to me as a surprise. My efforts had turned toward perfecting methods for homoplastic grafting, for the purpose of avoiding the precipitate menopause, retaining the influence of the internal secretion of the ovary, and the normal sexual attitude of the patient, in selected cases in which for any reason both ovaries had to be removed. There seemed also to be a fair probability that pregnancy might sometimes occur.

The present case of heteroplastic grafting renews our hope that we may make fertile some women who have reached the menopause through disease, surgical operation, or possibly after the normal menopause.

It will be interesting to note which parent the child of Mrs. W. most resembles. According to Haeckel hereditary characteristics are due to cell memory, and the cell memory of an engrafted ovary may not be changed by the influence of its new host. It is fair to say, however, that the mother who bore the child is the real mother, as she furnished the nutrition for development of the child. It is somewhat important, aside from medical and from ordinary sociological interest, to place the status of this child, for in legal circles the word "descendants" will now come to have a larger meaning.

Concerning the matter of priority in this field of ovarian grafting, according to the *Index Medicus* the proposition of the idea, the description of the technique, and the report of cases were published in New York in the year 1895. The papers of Chrobak and of Knauer followed in 1896.

Note.—A number of physicians with whom I have discussed the ovarian grafting case, state that they are sure that the ovaries were completely removed in cases in which menstruation continued. Questioning elicits the statement that such ovaries were removed by ligation methods, and that any portion of ovary remaining must have been "outside of the ligature, where it could receive no nutrition." This is the very point that is brought out in my experimental work in homoplastic grafting. A trifle of ovary outside of the ligature may receive enough lymph circulation by peritoneal contact to insure vitality, and it then becomes a homoplastic graft. A few cases of pregnancy have been reported in cases in which the ovaries were believed to have been removed. I think that these are, in fact, homoplastic graft pregnancies, and that they offer testimony in support of the theory that such pregnancies can occur readily enough if the oviducts are in condition to allow it. It is a question if menstruation can occur without the influence upon the uterine ganglia of the internal secretion of that temporary organ, the corpus luteum. The employment of Tuffier's angiotribe or of methods of complete excision of the ovary, followed by suture instead of ligation, will insure complete removal of all ovarian tissue. I do not remember to have had menstruation follow in any case in which either one of these methods was employed, unless grafts had been placed in the patient purposely.

616 Madison Avenue.

THE PRACTICAL SIGNIFICANCE OF OUR KNOWLEDGE OF BACTERIA IN THEIR RELATION TO PNEUMONIA.*

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In the short time at my disposal this evening, I shall outline, briefly, in a suggestive way the points of practical significance, which may be gleaned from our knowledge of bacteria in their relation to pneumonia.

It is hardly necessary to review the early work, now chiefly of historic interest, which has led up to our present knowledge of the bacterial incitants of pneumonia. Suffice it to note in passing, that from bacterial examination of the pneumonic lung at autopsy, in long series of cases, it is now generally recognized: that the pneumococcus, streptococcus, staphylococcus, the bacillus of Friedlander, and possibly the influenza bacillus, are the most important of the incitants of the disease; that the lobar type of pneumonia is practically a specific pneumococcus infection; that the bronchial or patchy lesions are also in most instances, especially the primary infections, incited by the pneumococcus; but that in some localities, and particularly in the secondary pneumonias following the exanthemata, the streptococcus has been found with great regularity. The tubercle bacillus occasionally found in these acute pneumonic processes is doubtless a mark of secondary infection; and the presence of the influenza and Friedlander organisms may be similarly explained in many, not all, cases. The pneumococcus thus occupies a position of prime and, barring the streptococcus, almost exclusive importance.

The methods of demonstrating and differentiating these bacterial incitants of pneumonia, have recently been greatly simplified by the work of Hiss. Capsules may now easily be demonstrated on pneumococci and pneumobacilli. Morphologically the pneumobacilli occasionally resemble the pneumococci, but with the Gram stain they decolorize, and in culture the luxuriant slimy growth of the Friedlander bacillus may usually be distinguished at a glance. Hiss, by his more precise methods of staining, found that the streptococci occasionally show capsules and that the pneumococci may fail to develop them. Cultural tests thus proved to be the surer guide to an accurate differentiation; of these the fermentation of the carbohydrate inulin by the pneumococcus proved the most constant.

By bacterial examination of material from cases of pneumonia, the presence of these species of bacteria may often be readily determined. The presence of the tubercle bacillus is usually of precise diagnostic significance, and the finding of the incitants of the acute pneumonic processes in the blood or in exudates of the body tissues is similarly significant, but in the secretions of the mouth, pneumococci and streptococci are frequently found under normal conditions.

The distribution and dissemination of both pneumococci and streptococci in different communities is well shown by a great variety of researches, the discussion of which is necessarily curtailed in this short presentation of the subject. In the mouths of healthy persons various streptococci, which at present cannot be accurately differentiated, have been found with great regularity. Pneumococci, corresponding to those found in pneumonic lesions, have also been demonstrated in the mouths of many apparently healthy people. The percentages given by different observers vary from 4 to 100 per cent., and average between 25 and 35 per cent. Crowded and densely-populated districts, as a rule, yield the highest percentages; among them the City of New York, as shown by the recent report of the Commission to investigate the respiratory diseases. The sputa of persons having previously, and especially recently, recovered from pneumonia, much more frequently contain pneumococci. Netter's results gave the proportion of four out of five, as compared with one out of five obtained in normal cases. In sputum outside the body, whether dried, pulverized, or exposed to cold, the older researches indicate an exceptional viability; but these observations may be questioned, for the pneumococcus, even on the favorable laboratory media, is an extremely delicate organism, often dying after a few days' incubation at the body temperature. Recently, Wood, with improved technic has shown that in direct and even in diffused sunlight, the organisms die very rapidly, and especially when sprayed in very fine particles of sputum; but in the cold and in the dark, the pneumococcus will live for longer periods, as was found in the older researches. Finally, it is significant that both pneumococci and streptococci have been found with great regularity in pathological conditions of the pharynx, nose, and ear.

By the simple acts of speaking and whispering, to say nothing of coughing and sneezing, large numbers of bacteria are sprayed out into the air, and carried by convection currents long distances. In this way the infectious material is transferred from one person to another. During quiet respiration, practically all the bacteria inhaled are deposited on the mucous membranes of the upper respiratory tract, for the expired air is sterile. These bacteria, especially in forced inspirations, as shown by animal experimentation, sooner or later reach the alveoli of the lung. The great majority, of course, disappear, and so rapidly and completely that the lower portions of the respiratory tract are usually free from bacteria. It is only such pathogenic bacteria as have attained considerable virulence or adaptation that develop and incite varying grades of tissue reaction in the course of their elimination. The filtration of bacteria from the air, by constant respirations of the occupants of a crowded, but quiet room, may occasionally be shown by comparative bacterial examinations. But usually there is an increase, owing to the large number kicked up in the dust and sprayed out in speaking and coughing. This is often especially marked because bacteria settle on the floor and flat surfaces of the furniture in the rooms during the quiet hours to such an extent that the air may be practically free from bacteria before it is used.

Such are the data which may be cited to prove that in the distribution and dissemination of the bacterial incitants of pneumonia there is a constant and vicious cycle, the effects of which are in various ways manifested. Small epidemics of pneumococcal infection, arising in families or small communities, can doubtless be recalled by every one in active practice, and many have been recorded. That such epidemics, developing in very susceptible people in close association, may reach grave proportions, is well shown in

*Read before the Brooklyn Pathological Society, February 8, 1906.

the report, by Brodie, Rogers, and Hamilton, of an epidemic, characterized by rhinitis, meningitis, and pneumonitis, all pneumococcus infections, arising in a body of Kaffir miners. Some 12 per cent. of these miners were constantly sick, and 5 per cent. of the total number died. Streptococcus pneumonias, it has been shown, also occur in small epidemics. Influenzas and other secondary pneumonias appear in groups of cases, in some places incited by the streptococcus, in others by the pneumococcus. Both streptococcus and pneumococcus pneumonias occasionally develop in the hospital wards.

The prevalence of pneumonia during the winter months was formerly attributed to the action of cold as a predisposing factor in the development of the infection. But experience has since shown that this is a minor factor. The varying increase of cases, regularly attaining its maximum in the spring, long after the coldest weather, and abating only as summer comes, is due, not to exposure to cold, but to the huddling together of people in narrow quarters. Under these conditions, not only is the transfer of infectious material from one person to another greatly facilitated, but its quantity and virulence increase in geometrical ratio during the long winter season. Although there are many cooperating factors in bringing this about, attention may be directed especially to the fact that overheated houses, modes of life, and sudden variations of climatic changes, aside from effecting in individuals changes which directly predispose to pneumonia, favor the development of minor infections of the respiratory tract, which in turn increase, not only the amount of the infectious material, but its virulence. In New York, under these most favorable conditions, pneumonia has been increasing at an alarming rate, not only in the number, but in the gravity of the cases.

Whereas, complete and suggestive data concerning not only the infectious nature, but the communicability of pneumonia exist, no serious application has been made of this knowledge in the prophylaxis of the disease. Evidently knowledge, in this instance, has bred a costly contempt. And this here in New York, where there is every indication that immediate results might be expected from precautions as simple and rational as are taken against other less serious infections about which comparatively little is definitely known. That sanitary regulations of crowded districts, of public buildings and conveyances, which common decency, apart from any question of pneumonia, will soon demand, would alone accomplish definite results, is shown by the changes effected in the summer season by the free open life. But the secretions of the mouth constitute the chief, if not the only, source of respiratory infection, and the transfer of the infectious material takes place largely from one person directly to another. Thus the precautions and regulations within the jurisdiction of the health authorities, so successfully adopted with typhoid and similar infections, are obviously inadequate, and the responsible burden of alleviating or controlling the spread of the respiratory diseases rests largely upon the individual.

Fortunate it is that, as compared with other races of men, and particularly with the lower animals, we are relatively insusceptible. But still more fortunate is it that for the development of pneumonia certain conditions of susceptibility are essential. In the development of infection there are two chief, or, if you like, opposing, factors to be considered: the bacterial cells and the body cells. The disease processes, whether considered anatomically or symptomatically, are simply the reactions of the body cells in the presence of the infectious material. In the course of this reaction there is, on the one hand, an adaptation of the body cells to the bacteria and their products, by which varying grades of immunity are acquired; and on the other, there is also an adaptation of the bacterial cells to the body tissues, by which the virulence may be increased or altered. Owing to the marked susceptibility of certain animals to pneumococcus inoculation and the varying grades of insusceptibility that may be secured by specific immunization—offering, as they do, complete analogies to the varying grades of susceptibility observed in man—the experimental study of pneumonic infection has proved exceptionally significant. The results of these researches have already, in a former paper, been considered in extenso. But briefly, it was found that virulent bacteria, whether introduced directly into the circulation or through the tracheæ of very susceptible animals, incite rapidly fatal general infections without local lesions; but, when injected through the tracheæ of only moderately susceptible animals, bronchopneumonic types of lung lesion are incited. The diffuse lobar types of lesion were secured only in animals relatively insusceptible, and only by the introduction through the tracheæ of such bacteria as possess or quickly attain an exalted virulence. Thus, by varying the susceptibility of the animal by predisposition or immunization, and the virulence of the bacteria by passage through the species experimented upon, it was shown that in animals and in man, essentially similar etiological conditions in slightly varying relationship give rise to slightly varying lesions, differing only in type.

The tissues of the lung are especially well adapted for the absorption and elimination of noxious substances, and thus in a measure protect the body from the development of systemic infection. Apart from this the marked protective resources of the body systemically and the virulence of the pneumococci are very delicately and evenly balanced in lobar pneumonia. The extremely virulent pneumococci rapidly develop in the accumulating exudates of the lung. This development sooner or later involves the general system as a bacteriemia which, as is well shown by the results of bacterial examination of the blood, is a frequent, if not a constant, feature of the disease. In the course of the lung infection, the development of the bacteria, at first in the ascendant, is subsequently inhibited and the bacteria in the exudate are so rapidly disposed of that even in fatal cases of the pure pneumococcal infections the exudate, which in early lesions, contains numerous cocci, is comparatively free from bacteria in the later stages. This, apparently, is a peculiarity of the lobar pneumococcus infections, for it is not found in the so-called Friedlander pneumonias. It is, therefore, significant to recall the peculiarly marked susceptibility of the pneumococcus to unfavorable conditions. In cultures, Fraenkel found that the organism lost its virulence after twenty-four hours' exposure to 42° C., and after 6 days at 41° C. Its susceptibility to osmosis is similarly marked. For example, Neufeld found that a drop of normal rabbit's bile sufficed to bring about the complete dissolution of the pneumococci in 1 c.c. of broth culture; and the comparatively rapid autolysis which pneumococcus

cultures undergo after the growth has reached its maximum is well known. Thus, it may be suggested that owing to the marked insusceptibility of the lung tissues, their great capacity for adaptation and the apparently marked susceptibility of the pneumococcus to these unfavorable conditions, the reactive processes of the lung tissues in lobar pneumonia, are seemingly able to cope with the infectious material lying in the air spaces theoretically outside the body. And also that although the lung reactions constitute the most obvious feature of the infection, this is but part of the disease as a whole, and, possibly, from the standpoint of recovery, a minor part.

By further researches on the recovery of susceptible and immunized animals from pneumonic infection, it has been possible, not only to confirm the suggestive findings in fatal human cases, but to secure a termination of the infection approximating the crisis in man, and thus complete the analogies of recovery. The results of these studies are reasonably complete, although they have not, as yet, been published. Briefly, it was found that the pneumonic crisis in animals is accompanied by a peculiarly extensive dissolution of the pneumococci throughout the body, and apparently coincident with the fall in temperature. This did not occur in the fatal infections, or in those recovering by lysis. A similarly extensive dissolution of the pneumococci during the human crisis obviously cannot be so precisely established. However, the marked disappearance of the cocci from the exudate, even in fatal cases, the very rare occurrence of abscess, gangrene, or complicating conditions in the lobar lesions of pure pneumococcus infections, and the exceptional development of complications after crisis as compared with their prevalence in lysis and in fatal infections, and, finally, the failure to find pneumococci in the lung by thoracentesis after the crisis, when they are so regularly present before, may reasonably be considered significant.

In forecasting the results of the struggle between the two opposing factors of infection—the body cells and the bacterial cells—so evenly balanced in lobar pneumonia, there are obviously serious difficulties, and it is hardly necessary to review, in detail, the various attempts to secure some sign, admitting of precise determination, upon which a prognosis may be safely based. Suffice it, therefore, to outline briefly the results of this study. The prognosis is primarily dependent upon the generalization of the infection and its subsequent localization, but is only very inadequately suggested by the presence of bacteria in the blood, for this condition also occurs frequently in favorable cases. The age and the habits of the patient have proved to be, in general, exceedingly important factors; but in particular cases, these are often of doubtful significance. Similarly, an extensive involvement of the lung is a sign, not only of a virulent infection, but of a marked capacity for recuperation in the patient. Slight lung lesions are indicative of mild as well as of extremely virulent infections; and thus in infants and old people, whose susceptibility is great, such pneumonias are often serious. Certain of the changes occurring in the blood have been considered significant. A constantly high leucocytosis is a favorable sign and a low count unfavorable; but in individual cases a low leucocytosis may be due to a mild infection, and the high count to a virulent infection. The return of the eosinophiles, which, during the active stage of the disease, disappear or are greatly diminished in number, has been taken for a sign of the crisis; but this has not, as yet, been fully determined. The agglutination reaction is of some diagnostic value in obscure cases of pneumonia; but a careful study of fifty cases in my experience failed to reveal any definite prognostic suggestions.

The clinical picture of the disease from day to day thus constitutes the court of last resort for the correct interpretation of these extremely valuable, but uncertain, determinations in the prognosis of the individual case.

In the attempt to bring to a favorable issue this struggle between the body cells and the bacterial cells, there are obviously serious difficulties, which, now that they are being more fully realized, render seemingly ridiculous the heroic efforts of older observers to abort or control the course of pneumonia by the use of such drugs as tartar emetic, quinine and other antipyretics, veratrum viride, digitalis, and, last, but not least, ergot, for it is still being feebly advocated by some observers. In the light of this valuable, but costly, experience, the reasons for the adoption, and the long discussions leading up to the judicious withdrawal, of one after another of these powerful drugs, are now only of historic interest.

Victor Hugo defined composition as the art of putting the right word in the right place, and Millet similarly described painting as the art of putting the right color in the right place. The administration of drugs and treatment is an art. In malaria, quinine; in syphilis, mercury; in diphtheria, antitoxin, act specifically; but in pneumonia the right drug has not, as yet, been determined. Pneumonic infection varies in different localities, and at different times, to such an extent that the comparative study of different modes of treatment is extremely difficult and at best uncertain. Such statistics as include long series of cases for several years, however, suggest that the simpler measures, in the old days as now, yield, all things considered, the best results. Northrup has done a great service here in New York by calling attention away from the vagaries of the past and directing it to the open window. But aside from these obvious, yet much disregarded, indications for simple, nutritious diet, for cool, fresh, unpolluted air, sunlight, the requisite amount and kind of clothing, and for quiet—aside from all this, conditions arise in the individual cases of pneumonia, as in those of other infectious diseases, which require active measures, however inadequate they may be, in controlling the development and course of the infectious disease.

Of first importance is a careful prophylaxis against disturbances of the digestive tract. Except in rare instances, when both lungs are mechanically blocked, the respiratory organs, in spite of the lung involvement, are comparatively free from serious functional derangement, until the circulation fails, and this steadily, even in favorable cases, weakens as a result of the continued fever and the prolonged toxemia. It is hardly necessary in this brief and purely suggestive outline of the subject to consider, in detail, possible or even probable contingencies, and the means at our disposal for their relief. Suffice it to recall the importance of determining accurately the changes occurring in the individual cases before resorting to venesection or saline infusions, to ice packs or baths, to stimulation with alcohol and powerful drugs, or to other strenuous measures which have apparently proved of great value in

certain cases, but which in most instances are ill-advised and liable to do serious damage. Thus it is that in the treatment of pneumonia there is a more and more precise realization of the limitations and of the difficulties of avoiding, on the one hand, the pitfalls of over treatment, and, on the other, of rendering efficient aid to the natural resources of the body tissues upon whose capacity for adaptation recovery ultimately depends.

There are many ways of achieving the same end, and the choice rests largely, if not wholly, with personal experience; the experience of one is not necessarily that of another, nor is it ever a final criterion. And thus the treatment of pneumonia in its present stage, like the poetry of Hugo, to use the author's own words, is very easy or it is impossible.

The hope of definite results in the treatment of pneumonia lies in the production of an efficient and specific antiserum. Certain it is that poisonous substances are elaborated by the pneumococcus; but the attempts to secure from this organism, under artificial cultivation, a sufficiently concentrated toxin, which in animals would give rise to a corresponding antitoxin similar to that now used in diphtheria, have failed. Diphtheria, however, is essentially a toxemic disease, in contradistinction to the bacteremic, in which the incitants develop, not only in the local lesions, but in the circulating blood, as in pneumonia. Antisera which act on the bacterial cells have been secured in sufficient strength to control many of the infections in smaller animals, but in none of the bacteremic diseases of man have satisfactory results, as yet, been secured.

Since in lobar pneumonia the protective resources of the body tissues are so extremely well adapted for the elimination of the infectious material, and since the pneumococcus, as compared with other pathogenic bacteria is extremely susceptible to unfavorable conditions, the hope of success ultimately crowning failure brightens, materially, with each new advance in our knowledge of pneumonic infection.

112 West Fifty-fifth Street.

A CASE OF SYRINGOMYELIA WITH PARTIAL MACROSOMIA.

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Not many years ago, cases showing hypertrophy of one or more extremities, or other parts of the body, in connection with symptoms of syringomeylia, were described as acromegalia with accidental association of syringomeylia. These two groups of symptoms were looked upon as not having any special relationship to each other. It was not until recent years that this combination of symptoms was recognized as being caused by the same lesion, syringomyelia. This condition has been given a special name by Schlesinger—"Partial Macrosomia." For the enlargement of the whole hand, Hoffman and Marie have chosen the name "Cheiromegalia;" for the enlargement of the foot, Schlesinger has suggested the name "Podomegalia."

This hypertrophy usually begins in one extremity, spreading from there to the trunk, or jumping to the other extremity. It seems, sometimes, to involve the soft tissue alone; other times, and less frequently, it involves the soft and skeletal tissues. The length of an extremity is not found increased as often as is the thickness, nor does the length increase as much, when increased at all, as does the thickness.

In connection with the hypertrophy of the tissue, arthropathies are frequently found—thickening of bones about the joints, hardening of articular ligaments, and, as in the case described by Nolbandoff, softening of the bones.

The following case shows the unusual and interesting combination of hypertrophy of an extremity with dissociation of sensation, and with a number of other interesting symptoms.

G. H., male, thirty-eight years old, married, and has four healthy children. Father died of old age. Mother living and well, eighty-three years old. Three brothers and two sisters living and well. Two brothers died in infancy, cause not known.

Family history negative as to tuberculosis, nervous or mental diseases, rheumatism, etc. No deformities in family. As a child and boy, the patient always enjoyed good health. Fifteen years ago he had chancre with marked enlargement of the inguinal glands, which were very painful. He never had any further trouble from the chancre, but states that his wife had two miscarriages, and that one child died a few hours after birth.

The habits of the patient are good. Up to two years ago he was well. At this time he began to feel a heaviness in his left shoulder, and somewhat in the left arm. He paid no further attention to this condition until last December, about Christmas time, when rather suddenly his legs gave way, he felt "ill all over," as he expresses it, and went to bed. Immediately after this attack of indefinite illness, his left shoulder, arm and hand began to swell to about twice their normal size. He had no pain in the swollen arm and hand, but some in the joints of the right arm and hand. The arm remained swollen for about two or three months, after which the swelling began to subside gradually. Since this illness it has always been somewhat larger than the right arm and hand. Immediately after the onset of the illness in December, patient began to have attacks of dizziness, and during some of these attacks, he would become totally blind in his left eye, the loss of vision lasting for about five minutes. These attacks of total blindness occurred four times, successive days. After the fourth attack the blindness was not complete. The loss of sight was confined to the lower half of the visual field; only the upper half of the left retina being involved. These attacks of partial blindness of the left eye gradually became less frequent, until now they occur about once a week, or once in ten days, accompanied always by dizziness.

During the past summer patient noticed that, while during the hot weather the right side of his face would perspire very freely, the left side would always remain dry. He was not so sure about the absence of perspiration on the left arm and chest, although he thinks they do not perspire so much as the right.

Status præsens: Well nourished man, not much adipose tissue, but muscles well developed. Symmetry of face not disturbed, except that the left eye is drawn back into the fossa somewhat more than the right, which, however, does not show well in the photograph.

The left scapula has a lower position than the

right, and recedes more from the vertebral column.

The left half of the chest and back, the left arm, and hand are larger than the right chest, arm, and hand. This is clearly seen in the accompanying illustrations (Figs. 1 and 2), drawn from photographs.

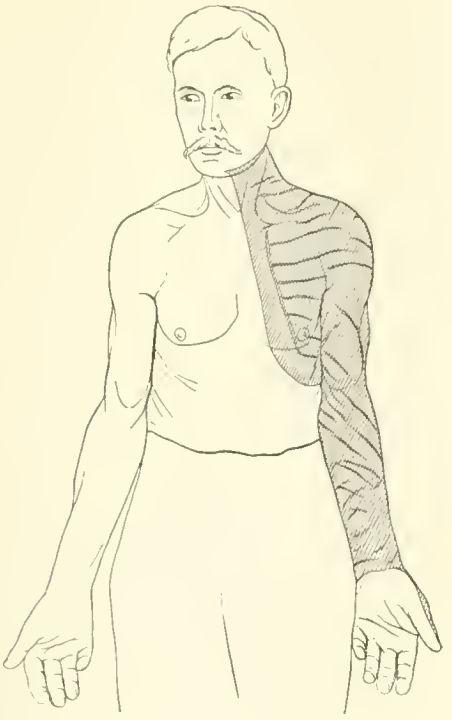

Fig. 1.—Anterior view.

There is a slight double curvature of the spine; the upper convexity in the region of the sixth and seventh cervical vertebræ pointing to the left, the lower convexity at about the fifth, sixth,

Fig. 2.—Posterior view.

and seventh dorsal vertebræ, pointing to the right. The lower part of the body and the legs appear normal.

The measurement of the two arms, and both sides of the body in the region of the chest are as follows: Middle of biceps, R., 28 cm.; L., 30 cm. Over largest circumference of lower arm, about 1½ inches below the elbow joint, R., 27 cm.; L., 28 cm. Wrist, over prominence, R., 18½ cm.; L., 20 cm. Hands, with thumb adducted, at base of first phalanx of thumb, R., 25 cm.; L., 26 cm. Over base of first phalanges of hands, thumb abducted, R., 22½ cm.; L., 23 cm. Length of middle fingers from base to tip, R., 11 cm.; L., 11½ cm. Length of ring finger, R., 10 cm.; L., 10½cm. Length of little finger, R., 8 cm.; L., 8½cm. Chest, from spine to middle of sternum over the nipple, R., 45 cm.; L., 46½ cm.

There is complete loss to the pain and thermal senses over the whole of left arm and hand, and on the surface of back and chest, neck, and back of head, as indicated by the shading in the illustrations.

On the chest, the area in which the thermal sense is lost is smaller than the area of analgesia, as indicated by the second line. Tactile and muscular senses not disturbed. No sensory disturbance in the trigeminal region, or on any other part of the body. The skin reflexes are present. The tendon reflexes of the legs, right arm, and jaw are slightly exaggerated. Tendon reflexes of the left arm are very much diminished.

The patient was placed in a hot air chamber and allowed to perspire freely. It was seen that on the left side of the face there was no perspiration (anidrosis), whereas, on the right side there was profuse perspiration, the line of demarcation being sharply drawn down the middle of the face. The left arm and hand, the left side of chest and back were moist, whereas on the right side, on the same areas, the perspiration was very profuse.

The bones of the left wrist joint seem enlarged. There is a permanent dislocation of the carpometacarpal joint of the thumb, which cannot be replaced. This dislocation is readily seen in the *x*-ray picture.

The strength in both arms and hands is equal, but in comparison to the muscular development the strength seems to be diminished. Both hands register 80 on the dynomometer. Nowhere is there seen any muscular atrophy or paralysis. A paresis of the left *rhomboidei* and *levator anguli scapulæ*, however, is found

Eyes: pupils equal; react to light and accommodation. Movements of the eyes normal. Visual field normal; normal fundus; physiological excavation of the papilla; left eye cleft smaller than right; left eye deeper in fossa than the right (enophthalmus)

Lungs: Normal.

Heart: Somewhat enlarged Loud systlioc murmur heard at apex, transmitted to all parts of the left chest. Mitral insufficiency. Blood pressure equal in both arms, measuring 120 mm. at systole, and 83 mm. at diastole.

Skin temperature equal on both sides. All other organs apparently normal. Taste, smell, and hearing normal

For a year previous to the acute attack which the patient had in December of 1904, his left arm felt numb and not the same as did his right arm, although he did not know that the pain and thermal senses were absent until the examination was made at the clinic. It seems probable, therefore, that the loss of the pain and thermal senses has been gradually coming on for at least one year previous to the acute attack. This attack was, no doubt, brought on by a hemorrhage in the area of gliosis, or in the necrotic tissue, the result of a central gliosis (for such I take the lesion to be).¹ It would appear that

the hemorrhage confined itself to the intermediate gray matter at the base of the left anterior horn throughout a number of segments, first cervical to about the sixth dorsal. Two sets of symptoms resulted from this hemorrhage: irritative and paralytic.

As irritative symptoms, must be considered the attacks of blindness of the left eye, and, with this blindness, the dizziness. These attacks were no doubt caused by an irritation to the sympathetic centers in the cervical region, causing spasms of the blood-vessels of the left retina, with resulting blindness, and spasms of the small vessels in part of the brain, with resulting dizziness.

These irritative symptoms have gradually subsided since the onset of the acute attack. An interesting feature to which attention should be directed, is that when the irritation was most marked, all the blood-vessels of the retina were involved in the spasm, but as the irritation subsided the spasm involved only the blood-vessels of the upper half of the retina. The correct interpretation of this peculiar phenomenon is, no doubt, that the motor impulses from the intermediate gray matter of the cord passing through the cervical sympathetic to the upper half of the eye, come from cells that have a different position from that of those cells which supply the blood-vessels of the lower half of the retina.

With the paralytic symptoms must be classed the anidrosis of the left side of the head, the enophthalmus (paralysis of M. orbitalis), and the edema of the hand, arm, and shoulder, caused by the paralytic dilatation of the blood-vessels in these parts. It is very probable, likewise, that an enlargement of the area of analgesia and loss of the thermal sense took place after the hemorrhage, although this could not be demonstrated, as it is impossible to know how large the area was in which the pain and thermal senses were missing before the acute attack.

Before the appearance of the edema in the left arm and shoulder, the patient is positive that there was no difference in the size of both arms. It seems, therefore, that the hypertrophy began to develop some time during the existence of the edema. This being the case, is there any connection between the edema and the subsequent hypertrophy? I am inclined to think that there is, although it would have been desirable and important to know whether all tissues were involved in the process of hypertrophy, or whether there is only increase in the connective tissue as the result of katabiotic changes. I suggested to the patient that pieces of different tissues of the arm be removed for histological examination, but this was refused. It seems that the bones are involved as well as the soft tissue; not so much in the increase in their size, as in the greater opacity of the affected bones, possibly due to an abnormal amount of salts deposited. This difference in the opacity of the bones in the two hands is shown on the *x*-ray picture.

Fig. 3. (*a*) Normal hand; (*b*) Involved hand showing the dislocation and also the greater opacity of the bones.

In many of the reported cases of partial macrosomia, the hypertrophy is either preceded by phlegmonous conditions with edema, etc., or by edema only due to the paralytic dilatation of the blood-vessels, as in the above case. In the cases where this factor has not been mentioned,

it is possible that it has been overlooked, as no importance was attached to it.

Before endeavoring to point out the connection between the edema and the subsequent hypertrophy in the above case, it is perhaps advisable to state very briefly the prevailing opinion held at present concerning the cause of hypertrophy of tissue.

It is generally conceded that a living cell is capable of developing three physiological activities: functional, nutritive, and formative. Formerly it was supposed that these three activities were the result of a direct stimulation. The functional activity being the result of the weakest, the formative activity the result of the strongest stimulation. This, as has been pointed out by Weigert, cannot be the case, for the functional activity is a translation of the energy stored in the cell body and nucleus, into the specific energy of the cell in question, and attended with a breaking-down of the cell element. The nutritive and formative activities are the diametric opposite of this—a replenishing of the broken-down elements and growth or multiplication of the cell. The former or functional activity has been given the name "Katabiotic process;" the latter, or nutritive and formative activities the "bioplastic process."

In the undeveloped individual, as in the undeveloped cell, the relation of different parts of the whole, to one another, is such that an equilibrium throughout the whole does not exist, or in other words, the tissue tension has not reached the point where it inhibits the bioplastic processes, so that they will continue until this equilibrium is established, after which the bioplastic energy will be forced into a dormant state. Should this tissue tension, either in the individual cell, or in the individual, as a whole, again be disturbed, the bioplastic process will again flare up, and growth will continue until the amount of tissue tension develops, which will again inhibit growth. The equilibrium in the individual cell is disturbed every time a cell is stimulated physiologically, whereby substances are removed from the cell (katabiotic process), but which can be, and are normally replaced readily by the nutritive or bioplastic process, thereby reestablishing the equilibrium. It often occurs that by a pathological irritation more intense than a physiological stimulus, the tissue tension is disturbed to such an extent that not only the nutritive but also the formative activity will be liberated, and we will then have cell division and growth beyond the replacement of normally disturbed tissue or hypertrophy. This growth of tissue is due to the bioplastic process.

There is, however, another way by which the amount of tissue can be increased, and that is by the katabiotic process. If a muscle cell is stimulated it will contract, thereby developing measureable energy and heat; if a gland cell is stimulated, it will secrete a substance characteristic of itself. If a connective tissue cell is stimulated it will deposit an intercellular substance (connective tissue fibers), or, in case of osteoblasts, calcium deposits in bones, the result of the katabiotic process. So it is evident that we can have increase of a certain kind of tissue (connective tissue) as the result of a katabiotic process.

In the above case, is it not probable that the hypertrophy is the result of a disturbance of tissue tension, which in turn was brought about by the edema caused by the paralytic dilatation of the arteries in the tissue involved?

Ribbert has expressed the opinion that tissue tension can be disturbed by a simple hyperemia, the result of which is an hypertrophy of the tissue involved. A pupil of Ribbert, E. Feurst, has taken up this subject, and he succeeded in producing an hyperemia with a subsequent hypertrophy of the tissue involved, by exposing tissues to low and high temperatures. Feurst, however, is of the opinion that it is not the hyperemia alone that causes a disturbance of tissue tension, but that pathological changes in the cells, brought about by exposure to the low or high temperature, is a factor in disturbing tissue tension. In the above case the factor of pathological changes in the tissue due directly to the effect of the low or high temperature, in bringing about a disturbance of tissue tension. can be excluded; instead, we have a paralytic dilatation of the blood vessels with edema caused by a lesion lying remote from the tissue hypertrophied and therefore in no way directly affecting it. This is, therefore, that ideal condition to which Ribbert has referred as being so difficult to produce experimentally, viz., the production of an hyperemia in a tissue, without injuring the tissue directly by the agent which produces the hyperemia.

The present case may also bear upon the theory of special trophic nerves, but it seems to me that there is not sufficient evidence in support of this theory to call for a discussion of it in this connection.

The study of this case is by no means complete, as it is impossible for me to ascertain the nature and extent of the hypertrophy, as histological sections of the tissue could not be made; but it seems probable that we have a tissue hypertrophy, the result of the bioplastic, as well as the katabiotic process.

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EXERCISE.

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A certain amount of exercise is essential for the preservation of health. To make a proper use of it, a thorough knowledge of the true principles involved is necessary. Du Bois Reymond, who perhaps offers the most lucid definition of exercise says: "Exercise is the frequent repetition of a more or less complicated action of the body with the cooperation of the mind, or of an action of the mind alone, for the purpose of being able to perform such actions better." It must be clear then that the mere fact of forcing the muscles to perform a definite amount of work is not sufficient for one to secure the benefits to be derived from healthy exercise. On the contrary, the mind and muscular system must act conjointly in order that a good result may be attained. Bodily exercise will only be considered, since the discussion of the complete subject would be foreign to the purpose of this necessarily brief article.

It is difficult to lay down any exact rules regarding the amount of exercise necessary for an individual, since many factors, such as muscular strength, age, season, and temperament, must be considered. Dr. Parkes, who has given much attention to the subject, estimates that every healthy man ought to take daily an amount of exercise equivalent to the raising of one hundred and fifty tons about one foot, or a walk of about nine miles. An equivalent of this amount of work is indulged in by most individuals occupied with the usual trades. The trouble is that in some of them their vocation demands the exercise of certain muscles only; besides, to make matters worse, it is carried on in quarters lacking in the very essentials of proper ventilation, etc.

Ordinary physical exercises as opposed to gymnastic exercises are of the greatest importance both in health and disease. Indeed, it may be questioned whether an outdoor life combined with exercise taken in the pursuit of sport or of games is not, after all, the best mode of regaining and preserving health. There are, however, a very large number of persons who are compelled by occupation to endure a sedentary existence, and for these gymnastics of various kinds afford a useful substitute. The art of breathing correctly is a most essential one and is of more importance than any other means of retaining health. There are numerous series of movements calculated to improve the organs of respiration. The Japanese are greatly given to the practice of these methods and probably there is no race of men living at the present time who possess an average chest capacity equaling that of the Japanese. The necessity, however, of breathing properly is too obvious to need argument. Natural full breathing is an essential to sound health, and in order to increase the capacity of the lungs, there is only one exercise which will effect this purpose and that is to breathe deeply and slowly, until expansion has reached its utmost limit. The methods, of course, employed to attain this object are various and too numerous to discuss within the scope of a short article. It may, however, be stated that to cause involuntary respiration, exercise of speed and strength are required. Perhaps, the best of such exercises is speed running employed with discretion, but swimming, rowing, and walking, especially uphill walking, are all excellent means in the same direction; and it is a fact that the use of the legs tends to develop the chest capacity more effectually than the use of the arms.

It goes without saying that the aged, those whose arteries show symptoms of degeneration, or whose hearts have been weakened by organic changes, and those with lung affections, should undertake no violent exercise whatever, but if they are allowed any outdoor sport at all, should take gentle exercise involving only slow, steady movements. The best treatment in the way of exercise for the young, for the healthy fat persons, for the sound but flabby individuals is often really strong exercise, the form of exercise requiring endurance and speed.

By some authorities sharp walking exercise and horseback riding is recommended in the treatment of suspected phthisis. In the treatment of obesity exercise naturally plays an important part, but in all fat persons the condition of the heart must be considered. Exercise is of the greatest value in the treatment of gout, but rather as a preventive of an attack than as a remedy for the disease. Careful and restricted diet, daily exercise, though not of a violent nature, yet, sufficiently strenuous to open well the pores of the skin, and continued long enough to cause fatigue are the most effectual remedial measures. Exercise and massage in conjunction with abstinence are beneficial even in cases of acute gout.

Many investigations have been made concerning the influence of exercise on the assimilation of food. As regards gastric digestion, there can be no doubt that severe mental and vigorous bodily exertion directly after a meal retards the digestive processes. The entrance of food excites the free flow of gastric juice, which, like all secreting processes, is dependent upon an afflux of blood to the secretory glands. Other parts of the body, notably the brain, thus suffer from a temporary and partial anemia, and hence the great tendency to sleep which so often follows the eating of a hearty meal. At such a time, severe mental work or vigorous bodily exercise must necessarily cause incidentally a corresponding withdrawal of blood from the alimentary system to the brain, or as in the case of physical labor, to the extremities in order to furnish the amount of blood necessary for the proper performance of the functions of these parts. The withdrawal of blood from the digestive organs has the effect of inhibiting gastric digestion, since there has been an interruption to the free flow of gastric juice. Cohn's and Salvioli's experiments on dogs prove the correctness of this theory. The influence of exercise upon intestinal digestion has received attention from other experimenters. Grandeau and Leclerc as a result of their investigations on trotting horses found that this kind of exercise tended to bring about an inhibition of intestinal digestion, this amounting to about 3.4 per cent. of the total organic matter of the food stuffs ingested. Wolff, however, found that increased work will exert the above influence on digestion only under certain peculiar conditions, and that the amount of work and the length of time the work is continued have

but little or no influence on the digestion of food. Some very interesting studies in this line have been made, and as a result it has been found that in spite of the most vigorous exercise, intestinal digestion is not interfered with. A weighed amount of food, of known composition, is at a stated time each day fed to a healthy dog. Analysis of the feces during the periods of rest and of violent exercise shows practically no difference in the amount of nitrogen and fat absorbed. These experiments would seem to indicate that while gastric digestion may be temporarily retarded by vigorous exercise, the ultimate assimilation of food, is practically independent of work or rest. This is further attested by the fact that an ordinary laborer, with only an hour, or in certain factories half an hour for his midday meal, must recommence his work at a time when gastric digestion is just under way, and must continue at his labors when the most important part of digestion—the intestinal digestion—is in progress, and still assimilation of food is apparently as complete as in the case of people of sedentary habits. We are safe then in believing that digestion is favored by rest of the stomach before eating, by gentle exercise of the mind and body after eating, and by undisturbed mental condition.

Men engaged in mental work do not need the same amount of exercise required of those whose occupations involve physical rather than mental effort. Gentle exercise in the open air, such as walking, bicycling, etc., and sufficient sleep and good food, will suffice to keep the functions of the vital organs in good order. Severe muscular exertion can never compensate for expenditure of nervous energy.

It has been proven that the effect of muscular exercise upon the secretion of urine varies according to whether the person is accustomed to exercise or not. The excretion of urea is increased by exercise in the case of those trained to athletic work, while the amount of urea remains unaffected or is even diminished in those instances where moderate muscular exertion is indulged in by those not possessing such training. Thus, it will be seen that an athletic training is productive of a more complete oxidation of the nitrogenous materials of the body, and therefore of a more economic utilization of these substances. In those cases where there is a lack of physical training, sudden muscular exertion is followed by a waste of nitrogenous matter. Good muscular development must not be considered as indispensable to health, nor must strength be regarded as immunity against attacks of disease. It is to be remembered that in many instances trained athletes have developed simultaneously with their general muscular development, a corresponding hypertrophy of the heart muscle, which, while not in itself an alarming condition, may lead to degeneration of the cardiac walls.

Moderate exercise is of great value for hygienic as well as therapeutic reasons, in the treatment of debility, anemia, hysteria, neurasthenia, muscular atrophy, and obesity. In ill-nourished children, as well as convalescents recovering from acute or chronic illness, gentle exercise is of the greatest value in promoting a speedy return to health. Gymnastics can be put to remarkably good use in the treatment of chorea. Physical exercise, in the education of children with inherited neurotic or insane tendencies, has now been introduced in many asylums devoted to the care of such patients, not only as a means of promoting health, but for the purpose as well, of rousing and strengthening the activities of the brain and general nervous system. The aim of general exercise should be to keep the body in good physical condition, not merely to increase muscular development. Gymnastics after the German and Scandinavian methods tend to develop certain muscles at the expense of others. For instance the muscles of the upper part of the body are unduly developed, while the muscles of the thigh and leg are comparatively neglected. Such exercises are of value to attain a definite purpose. They are useful to strengthen certain groups of muscles, to improve deformities, or to correct bad postural habits. But for children, in particular, games are more beneficial than drill and calisthenics. Up to the age of eighteen years it is well not to attempt violent effort in feats of endurance or strength. As a rule, from eighteen to thirty is the period of life when a man can take any form of athletic exercise, not only without injury to health, but with healthgiving effects. Individuals vary, however in this respect, and many men do not mature until they reach the age of twenty-one, and the majority of men may be said to be absolutely at their best for active exercise at about the age of twenty-five. After the age of thirty, except in somewhat exceptional cases, a man is less adapted physically for strenuous activities. Work calling for continued speed is then calculated to place too great a strain upon the heart and blood-vessels. Nevertheless, exercise should be continued in later middle life and old age. The tendency in these days is to take life too easily, and to disregard the need for exercise. This tendency is fostered by the numerous facilities afforded to avoid exertion, such as elevators, and the innumerable opportunities of locomotion found in the streets of modern cities and towns.

There can be but little room for doubt that old people fall into senile decay, often unnecessarily, merely because they do not take a reasonable amount of active exertion. The consequence is that joints stiffen, muscles relax, and arteries harden prematurely, while if old persons were to continue their interest and to participate in those outdoor sports and activities which are possible without overexertion, their lives might be prolonged considerably and the evil day of decrepitude might be longer postponed. With regard to elderly persons who put on flesh more rapidly than is good for the health, and as sweating by baths and drugs and strict diet might be dangerous for such as these, their sole means of salvation from fatty changes and senile degeneration of tissue lies in muscular exercise. It may then be laid down as an irrefutable truth that all sorts and conditions of men require exercise, but exercise taken with discretion and the personal factor in each case duly considered. Women, speaking generally, do not take sufficient exercise. The trend of the present day is for the girls of the richer classes to lead an outdoor and far more healthy life than was formerly the case; but the women of the middle class even now do not obtain either enough fresh air or exercise. The reason that so many women in this and other countries present an anemic and fragile appearance is mainly on account of lack of fresh air and exercise. A woman has need of both these essentials to really sound health as much as has a man.

Wolfe lays down the following axioms as to the regulation of exercise. First, exercise should be

taken out of doors. One of its greatest benefits is that it causes us to inhale full inspirations of fresh air, which thus, amid the millions of air cells in the lungs, coming in proximity with the blood, serves to purify it and send it onward, circulating freshly and purely through the arteries of life. Now, if this air is impure or loaded with dust, or with the effluvia of confined localities, much of the benefit is lost. Second, exercise should not be dependent on the weather; dull, damp air, frosty mornings, and the fear of taking cold, are often the scapegoats of lazy dispositions, of erroneous opinion. The system in a state of activity is less susceptible to sudden changes of temperature than when at rest. Third, exercise should not be taken after long fasting nor immediately after a hearty meal. An hour after an early breakfast or two hours after dinner is the best time for regular exercise. Fourth, do not exercise to extreme weariness. The amount that is beneficial is very different for different persons, and is to be measured by the occurrence of fatigue. With those much debilitated it is often the case that they need to be exercised, rather than to exercise; and this may be done by the use of a flesh brush and by moving or assisting to move the various joints of the body as in active exertion.

N. S. Davis, discussing the treatment of heart disease through exercise and under certain rules that must be observed, praises this treatment highly. However, in taking exercise the muscular effort must be slight, although numerous large muscles must be used. Respiration should be deepened but not hurried, and exercise must be graduated, beginning with the lightest. He is of the opinion that all forms of heart disease, accompanied with muscular weakness, with or without dilatation, can be treated with fair hope of success by exercise. The best results are obtained in cases of dilatation which are due to high arterial pressure or physical exertion, and in which there is no, or trifling, degeneration. In the early stage of muscular degeneration the outlook for treatment by this means is favorable. When, however, there is much degeneration or cause for its increase, only temporary improvement can be anticipated. Oertel's treatment is particularly well adapted for the treatment of obesity and fatty infiltration of the heart, although various kinds of graduated gymnastics will also give good results. Of chronic valvular diseases the mitral form most frequently respond favorably to gymnastics, but numerous cases will be met with in which treatment is useless to restore compensation. Improvement of aortic valvular affections is less likely to result.

One of the best modes of exercise to be taken is horseback riding. Hippocrates mentions in high terms of approval the practice of horseback riding at full gallop, as a remedy for certain affections. Oribasius, also passed the highest encomium upon this form of exercise as a remedial measure. The Greeks regarded equestration as a therapeutic means of much value in the treatment of disease. The Romans, as a rule, were not such ardent votaries of horseback riding as the Greeks, nor did they recommend it so widely as beneficial in disease. Bagliva, however, advocated it strongly and is said to have cured two hypochondriacal patients, by causing them to ride in the country on asses. Early English writers usually praise horseback riding. Fuller, in 1740, said that this exercise, upon several accounts, may be esteemed the best and noblest of all exercises for a sick person; whether we consider it with respect to the mind or body. Sydenham was one of the most enthusiastic advocates of horseback exercise as a remedial agent, and declared that it was a sure remedy for consumption. Without going quite as far as the "Father" of English medicine, the fact must be conceded that riding on horseback is a most healthful exercise. The opinion was held in ancient times that horseback riding was under all circumstances harmful to those suffering from hemorrhoids. This view is entertained by many at the present time. Lewis has written recently to show that horseback exercise, judiciously and carefully undertaken, is more often a prevention and cure of hemorrhoids than a cause of them. Many distinguished medical authorities oppose this opinion, while on the other hand, Baron Larrey, Surgeon-in-Chief of the Grand Army, under the first Napoleon, declared positively that the motion of the horse was much better calculated to cure hemorrhoids than to cause them. Lewis states that he himself had witnessed the good effects of horseback exercise in the affection. Some of the patients had the disease in the form of varices in the anal region; while in others it was attended by regular organized tumors. The pressure of the saddle and the motion of the horse in these cases appeared to exert a most salutary influence in removing the congestion and the tumors. There can be no doubt that horseback exercise is beneficial in various conditions, and especially in that known as a torpid liver. The gentle shaking in riding certainly induces a more active secretion in that organ, and absorption in the intestines, probably by accelerating the circulation.

Medical gymnastics had their origin in Sweden, and are practised largely in that country, Denmark, Norway, Germany, Austria, Holland, and to some extent in France. Neither in the United States nor in Great Britain has the system been received with much favor, chiefly for the reason that the medical profession generally has held aloof, and medical gymnastics are taught and practised by individuals, many of whom are ignorant of the proper manner of applying the methods. In Europe and in Sweden especially, medical gymnasts are thoroughly trained. For example, the requirements for admission as a qualified gymnast, and the courses at the Royal Gymnastic Institute at Stockholm are as follows: The entrance requirements are: Candidates must be of good moral character, and must have matriculated from one of the public colleges. Only persons from good families are admitted, this because the graduates will have to move in the best social circles. The course for men lasts three years and for women two years. The curriculum comprises a complete course in the anatomy of the human body, physiology, theory and practice of medicine, and pedagogical gymnastics. For medical students and physicians there is a one-year course of medical and pedagogical gymnastics. At the University of Uppsala in Sweden, every medical student has to pass an examination in massage and gymnastics. In order to be qualified by the Royal Medical Department as a medical gymnast, it is obligatory to have graduated from the Central Institute. In fact, in Sweden and in some other European countries, medical gymnastics are recognized as a part of medical and surgical practice, and consequently its exponents must be skilful and competent.

Modern gymnastics are divided under two heads, the Swedish, or movement exercises, and the German, or "Turnen" exercises. The Swedish are considered far superior for medical purposes. Peter Henry Ling, a Swede, who was born in 1776, and died in 1839, and who was most instrumental in promoting this form of exercise, divided these gymnastic movements into four main classes: (1) Movements serviceable in the treatment of disease or depravity; (2) movements chiefly useful in promoting and maintaining a normal bodily development; (3) movements suited to rendering recruits in the army and navy strong, dextrous, and enduring and (4) movements for giving outward expression to thoughts or motion. Each movement should have some specific effect upon the inner organs of the body, and for this reason only such motions are employed as have been proven by experience to produce these definite changes. These exercises consist of active movements (voluntary on the part of the patient), passive movements (movements secured by the manipulator) and duplex movements (in which both patient and manipulator take part). Passive and duplex movements characterize in great part the features of Ling's Swedish-movement treatment.

Dr. Zander, also a Swede, has devised some sixty different machines by means of which it is possible to secure accurately regulated exercise for any particular group of muscles in the body. This form of exercise is known as the Zander Mechanico-Medical Gymnastics. While it is highly lauded in some quarters, it has been severely criticised in others, owing to the fact that in many diseases, for instance, those affecting the joints, a trained hand is necessary to supplement the use of the machine. Sargeant of Harvard University has invented a series of developing machines, which are now extensively employed in the United States. The principle involved is the running of adjustable pulley weights between metal rods as guides. Of course in this form of exercising machine only active motions can be employed.

Medical gymnastics deservedly holds a prominent part in the list of the so-called "Natural Methods" in the treatment and prevention of disease. The physician ought to understand something of this method of "mechanico-therapeutics," and avoid such expressions as "out-of-door life," "muscular exercise," and other vague advice when consulted as to the propriety of exercise in an individual case. Each man is a law unto himself, and the kind and amount of exercise beneficial in one case may be entirely unsuited in another. For practical purposes the moderate use of the dumb-bells, Indian clubs, developing machines, bicycling, horseback riding, walking, and similar methods of exercise, will accomplish much in promoting the physiological functions of our organs, and thus assist, in great part, to ward off the ravages of disease.

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RHEUMATIC MANIFESTATIONS IN CHILDREN.*

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Acute articular rheumatism in adults is a disease of sudden, severe infection with polyarthritis, and the possibility of endocardial involvement; this, however, does not form an adequate picture of acute articular rheumatism in children. One sees in them such manifestations as endocarditis, chorea, tonsillitis, the various erythemas and subcutaneous nodules, overshadowing the arthritic symptoms, which apparently play but a minor part. Any one of the above conditions may be associated with disease of the endocardium or pericardium, and in some cases these last are the sole evidences of the rheumatic infection; so that to consider the joint symptoms alone as an indication of the severity of the case would prove a dangerous error.

The arthralgias seldom present the evidence of inflammation seen in the adult, redness, swelling, extreme pain, and tenderness; but there is moderate pain on motion, so that the patient chooses certain positions of the limbs for comfort. On examination we find tenderness in the periarticular structures, over the insertion of tendons and over ligaments. The inflammation selects by preference the articulations of the lower extremities, the knees, ankles, or the small joints of the foot; if the upper extremities be affected, the elbows, shoulders or wrist, or the small joints of the hands suffer. Infrequently the vertebral joints are affected, chiefly in the cervical region, where they may be accompanied by torticollis.

These attacks last a few days or weeks, and then subside, but unfortunately they show a tendency to recur, and a rheumatism of benign appearance may last with exacerbations for weeks or months, sometimes causing considerable deformity of the parts.

Rheumatism is of very uncommon occurrence in children under 2 years of age, and of very rare occurrence in those under 1 year of age. When localized swelling, pain, and tenderness are present in an infant, they almost invariably prove to be scurvy, and quickly clear up on the proper change of diet. Rauchfuss found only five cases of rheumatism in 15,000 nursing infants, and Wiederhofer found but one among 70,000. Miller was able to collect from the literature only 19 authentic cases. After the second year, however, the disease becomes more common, and attains its greatest frequency after the tenth year.

Quoting from Grancher and Combe's "Traité des Maladies de l'Enfance," we find that rheumatism of childhood is distinguished from that of adult life:

"(1) By the character of the arthropathies, which, are far from having the importance and the aspect which they have in adults; (2) by the frequency of abarticular rheumatism; (3) by the frequency and gravity of cardiac complications."

The nursing infant cries, is restless, does not take the breast, has fever, favors one extremity and screams with pain when moved. In most children of 2 years and over, the onset is not sudden, the temperature is comparatively low, usually not above 102°, there is moderate pain and malaise; examination reveals a slight puffiness or moderate swelling. The joints most often affected are the knee, the ankle, the elbow or wrist, or the small joints of the foot or hand; sometimes the symptoms are limited to one joint alone, sometimes they are multiple. In some cases there are fever, restlessness, and pain of an indefinite character, but without true rheumatic swelling. Some cases have no fever, and the pain is so slight that it does not make much impression upon the mother: these children are not even kept in bed and are able to walk about. These mild subacute attacks are not infrequently overlooked when occurring in the upper extremity, for it is often the limp which attracts one's attention to the stiff or painful joint,

*Read before the Monthly Medical Club of New York, December 8, 1905.

and if this is not evident by observation, the disease may escape detection.

A child may have afternoon temperature, which subsides after the night's rest, and which recurs again on the following days; influenza, malaria, indigestion and typhoid fever are all diagnosed, when minute examination would perhaps reveal a sensitive joint, tendon, or muscle; if not, the occurrence of endocarditis, of chorea, or of a persistent anemia would tell us the nature of the trouble. Tenderness often affects the ligaments, tendons, and muscles rather than the joint; muscular spasm is sometimes marked, and when persisting, makes one think of beginning tuberculous disease.

Only a few days ago I saw a child of 3 years who had been under observation for some time with a harsh, whistling, mitral murmur and evidence of cardiac hypertrophy, and with no history whatever of previous rheumatism. Upon the occasion in question she had a temperature of 103°, with no cause that could be ascertained by the mother, and no complaint on the part of the child. Careful examination revealed the presence of slight tenderness in the calves of the legs. This child was having a recurrent rheumatic attack, abarticular in character; without the endocarditis to give us a clew in this case, the rheumatic infection might easily have been overlooked.

Endocarditis is remarkable not only for the number of cases in which it occurs, but also for the extent of the inflammatory changes; it exists in a very large percentage of cases, exceeding considerably the same complication in adults. The most frequent lesion is insufficiency of the mitral valve; the aortic orifice seems to escape the ravages of disease to a greater extent in children than in adults. The endocarditis may exist alone or coincidently with pericarditis, or with other manifestations of rheumatism; it occurs most often early, contemporarily with the first articular symptoms, but may wait for a recurrent attack; sometimes it precedes the joint infection. A striking feature of endocarditis in older children is the number of cases one sees, in which no history of a definite rheumatic attack can be obtained; it may even require the closest questioning of the mother to bring out the history of pains, however indefinite, usually called by the parents growing pains, and considered to be of no importance; in some cases the pain has escaped notice altogether, but the endocarditis bears evidence to the presence of the infection. If these patients of indefinite history be kept under observation, articular symptoms are almost sure to arise at some future period.

True ulcerative endocarditis in little children is extremely rare. S. S. Adams, of Washington, D. C., has collected all cases reported in children under 15 years of age, 46 in number; three were congenital, and three only acquired under one year, the others were all above three years of age.

Pericarditis is more important from a prognostic standpoint, but fortunately is of less frequent occurrence than disease of the endocardium; occurring in about 18 per cent. of rheumatic cases, it may be taken as the transition stage between benign and severe cases of acute articular rheumatism. It forms a danger to life in the acute stage, during convalescence, and during the months which follow. The dry form is not always diagnosticated, and Koplick thinks it occurs oftener than we imagine. If general it is apt to be accompanied by fluid, which, when absorbed, may be followed by adhesions; so much thickening may result that the pericardial sac is obliterated, but fortunately this is unusual. In some cases of pericardial effusion I have seen, bronchial voice and breathing have been present over the upper left chest, due to compression of the lung, by the distended pericardial sac. Signs of the enlarged sac may also be made out in the back.

Endopericarditis, then, adds much to the gravity of the situation; Cadet de Gassicourt found that out of 100 rheumatic children, 29 were compensated, while six died suddenly, these latter being pericardial cases. Some children are touched only lightly by the inflammation, but the majority have incurable heart disease, which causes death during adolescence, or which hampers the patient throughout life.

Pleurisy manifests itself as an effusion; it may be double (though usually not), and, like endocarditis, occurs either during the course or decline of the rheumatic attack, usually the former. Cadet de Gassicourt has seen the pleurisy precede the arthropathies. The effusion is apt to coexist with endocarditis; it may be absorbed without leaving traces, and if not infected does not suppurate. These pleurisies may be difficult to separate from the pleurisies of tuberculous origin, and we may have to rely upon cyto-diagnosis for a solution. However, it must be said that inflammations of the serous membranes, the pleura, peritoneum, and pia mater were formerly much more frequently ascribed to rheumatism than they are at present.

Attacks of pulmonary congestion accompany the cases of endopericarditis; they are manifested by dyspnea, cyanosis of pallor, rapid pulse, and many fine moist râles; they may go on to pulmonary edema and death.

Not infrequently *chorea* is a precursor of rheumatism; or the first sequel which appears after the chorea may be endocarditis. It may also occur coincidently with rheumatism or endocarditis, or with both. The three conditions are so closely associated that when finding one it is well to suspect the presence or the advent of the other two. When acute articular rheumatism occurs in a choreic child, the nervous symptoms may subside for a time, to recur at the subsidence of the rheumatic attack. Although many writers differ as to the rheumatic element of chorea, Holt finds over 56 per cent. give evidence of rheumatism, and thinks that there is a large group of cases which may be classed as rheumatic chorea. Crandall gives the following interesting statistics from 111 cases of chorea: Previous arthritic symptoms were present in 37 per cent., concurrent arthritic symptoms in 24 per cent., and subsequent arthritic symptoms in 15 per cent. of the cases.

A curious lesion which is not infrequently seen in children is the occurrence of *subcutaneous nodules;* these nodules were first described by Barlow and Warner among the English writers; and by Jaccourd and Meynel among the French; they consist of little tumors situated beneath the skin, free from it and attached by a pedicle to the tendon sheaths, ligaments, or to the periosteum; they are usually found around the elbow joint, connected with the condyles of the humerus, the olecranon, and with the tendon sheaths of the forearm and hand; with the clavicle, the sternomastoid muscle and the skull, with the patella, the spines of the vertebræ, or the crest of the ilium; they are usually about the size of a pea, though they may be larger, and may occur in crops, as many as 50 having been counted at one time. They are composed of fibrous tissue and may undergo degeneration and disappear in a few weeks, or may remain for months.

They appear coincidently with the rheumatic attack, or may be free from it, and are not as commonly seen in this country as abroad. Barlow and Warner found them to be almost always associated with heart disease, and, moreover, with heart disease of a progressive character. Goodhart found them in as many as 23 of 50 consecutive cases of rheumatism admitted to the Hospital for Sick Children, London.

The *erythemas,* nodosum, marginatum, and circinatum may occur in childhood, and of these manifestations erythema nodosum is the most common. The nodes are situated mostly along the tibial regions and the extensor surfaces of the forearm; they are the size of a pecan nut, have their long axes parallel to that of the limb, are red, raised, inflamed, and exquisitely tender; upon fading they leave ecchymotic spots. I have seen them independent of any articular attack, although they are always suggestive of rheumatism.

Tonsillitis and *pharyngitis* are thought to be rheumatic; certainly sore throats yield to rheumatic treatment, and many cases of typical articular rheumatism are ushered in by such an attack. I have in mind a boy, who, with a mild tonsillitis, for which he was kept in bed solely as a precautionary measure, shortly afterward developed slight swelling and pain in the wrist joints, followed in 24 hours by acute cardiac dilatation; recovering sufficiently to gain a slight degree of compensation, he developed a septic endocarditis of typical course, with pericardial effusion, pulmonary and cerebral hemorrhages, which soon led to his death. Of course such cases are not always rheumatic in origin, but the tonsil forms as good a portal of entrance for the organism causing rheumatism as for that of sepsis.

Torticollis may be of like origin and is sometimes associated with sore throat. Not long ago I saw a little girl with torticollis of two days' standing, with pain and tenderness over the sternomastoid muscle which soon gave way to the use of salicylates. Tonsillitis and cervical adenitis may be present as well. When the torticollis is due to vertebral arthritis, we must be careful not to confuse it with torticollis due to cervical Pott's disease, which is generally of longer standing and more gradual onset.

Anemia is present during the attack as well as after it; it is severe and often acute in its onset, and delays convalescence; if persistent it predisposes to another attack. Goodhart goes so far as to say that in every anemia without cause, he closely questions the parents regarding rheumatism in themselves, in order to establish a rheumatic tendency in the offspring.

Purpura is seen as a complication, though not as often as in adults.

Differential Diagnosis.—There are conditions which may be confounded with rheumatism at the different periods of life. In infancy there are—scurvy, acute osteomyelitis, gonorrheal arthritis, syphilitic epiphysitis, hereditary syphilitic bone disease, and hemophilia. In older children there are osteomyelitis and tuberculosis.

In scurvy the children have been fed upon proprietary foods; about the joint, usually knee or ankle, there is a spindle-shaped swelling of extreme tenderness, and frequently accompanied by discoloration; the swelling may extend also over the shaft of the bone; ecchymoses occur and there is bleeding and discoloration of the gums. The symptoms soon clear up on the addition of fresh milk, orange juice, and beef juice to the diet.

Acute epiphysitis, acute purulent synovitis or acute osteomyelitis is a form of pyemia, and is suppurative from the outset, beginning in the epiphysis and soon invading the joint; there are a chill, rise of temperature frequently high and septic in course, prostration, restlessness, and stupor. There is diffuse swelling with tenderness, redness, edema, and deep fluctuation. The symptoms are too acute for rheumatism, the local signs too well marked, and the child dies in from two to fourteen days. In like manner does gonorrhea take the form of pyemia; it may be manifested primarily by ophthalmia, vulvovaginitis, stomatitis, or inflammation of the umbilical cord, but there are cases on record where no primary lesion, nor any abrasion of skin or mucous membrane could be found.

Acute syphilitic epiphysitis may be present in intrauterine life, and is present to some extent in most syphilitic fetuses, and in syphilitic infants who are still-born; the symptoms usually develop within six or eight weeks of birth and consist of pain, swelling, and tenderness at the epiphyseal line, with pseudoparalysis; separation of the epiphysis occurs with crepitation, and sometimes there is suppuration.

In late hereditary syphilis chronic osteoperiostitis may simulate rheumatism for a time; but the boggy swelling, nocturnal pain, the deformity, and the presence of other syphilitic signs will serve to differentiate the two. Osteomyelitis is confined to the shaft of the bone, and unless the pus burrows beneath the periosteum to the neighborhood of the joints, it is not apt to confuse us. Tuberculous joints are difficult to tell in the beginning; the fusiform swelling, pain on pressure over the bones, atrophy of the limb, and the history, will help in our diagnosis. When one joint only is involved, we must bear traumatism in mind. Gonorrheal infection among older children may be monarticular; the inflammation is mostly periarticular, the swelling spindle shaped and exquisitely tender. The disease is obstinate and does not resolve upon rheumatic measures, and may leave adhesions.

To *recapitulate,* we find that rheumatism in nursing infants is very rare; that in childhood the disease is atypical, the joint signs being but little marked; the so-called complications being in children rather types of the disease, for they may occur without joint symptoms, either alone or associated with each other. The whole attack, while seemingly mild and subacute, is capable of causing severe damage to other structures, notably the endocardium, pericardium, and the nervous system. Relapses occur and patients are often left invalids for life.

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Alpine Accidents.—Statistics of accidents in the Swiss Alps during 1905 show that 172 climbers were killed and a few more injured. The greatest number of victims was among the Swiss themselves. Of the total accidents, 10 per cent. were unavoidable. The remainder were due to foolhardiness or inexperience.—*The Sun.*

THE FORMATION OF A CUL-DE-SAC FOR AN ARTIFICIAL EYE.*

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This case is presented to the section for two reasons. We have the very unusual traumatism to the orbital contents, and the necessity for the operation of forming a cul-de-sac by transplantation of tissue. Mrs. —— was referred to me by Dr. Gates, and I have been fortunate in having her consent to be present to-night, as this case is a private one, the operation having been performed at Kingston, N. Y., November 23, 1905, nearly two months ago. The accident occurred at Kingston on July 22, 1902, and is unique in its history. It is rather difficult to understand how this severe traumatism should have happened. She was at an exhibition of fireworks at a park, looking upward, when one of the sticks from a rocket, that had been fired, in falling, with the burnt end downward, passed through the brim of her hat, lacerated the eyeball, tore out the lower part of the conjunctiva and the free border of the lower lid, passed down through the cheek and out below. It was pulled out by one of those present, and the lower outer edge of the orbit was found to have been broken. The traumatism seems to have torn out the eyeball, or part of it, and probably part of the muscular cone, as I have not noticed any movement of the tissues of the orbit by muscular action.

It also seems to have fractured the outer part of the orbital plate of the superior maxillary bone near the articulation of the malar, but did not injure the infra-orbital nerve. There has been some loss of the bone of the edge of the orbit from the depression at that point. After the accident she was taken home and under ether the wound was cleaned, the remains of the eyeball and the loose portions of bone removed. The wound healed kindly and left the patient in the condition shown in the photograph.

The burnt end of the stick must have penetrated the cheek first, as there seems to be some discoloration of the tissues at the point of the fracture, probably from a deposit of carbon. On the first examination of Mrs. —— I found the superior lid and cul-de-sac intact and perfectly normal in every way, the superior portion of the ocular conjunctiva presented smoothly over the contents of the orbit to the exact horizontal meridian, where it was joined by the straight edge of the lower lid without any evidence of the Meibomian glands or cilia. The free border of the lid had evidently been torn away. The disfigurement caused by the accident was so great that the patient seldom went out and then had to wear a cover over the orbit to hide this condition. On November 23, 1905, assisted by Dr. Gates I operated on this patient at her house for the purpose of forming a lower cul-de-sac so that she could wear an artificial eye. In attempting this procedure I determined to follow out the method of Weeks in every detail with a Wolf's graft obtained from the inner aspect of the arm. It is very evident that in this operation perfect asepsis is necessary, that the technique of the operation must be carried out very rapidly, that at no time must the graft be allowed to cool but must be kept constantly moistened in warm normal salt solution and that the graft shall be quickly and securely attached to the periosteum of the edge of the orbit. This is a brief outline of the procedure necessary, in my opinion, to secure a reasonable success. Weeks has published the entire method of operating and it is not essential to repeat it here* except so far as I have detailed above what seem to me the most necessary points to be carefully observed.

This is the second time I have attempted to perform this operation, and I attribute the success in this case to the fact that I followed out all the suggestions in every particular. The result in my first operation was fairly good but not as successful as in this case, as I then tried to change the procedure somewhat, using a glass eye in place of the rubber plate. Every step was according to Weeks' suggestion, and I think the result shows the necessity of careful, rapid work along the proper lines. I think that the suggestion of attaching the graft to the periosteum of the edge of the orbit is probably the keynote to the success of the procedure, as it must render the graft much more immobile and in that way assist in its attachment to the tissues beneath, while the rubber plate readily retains the normal temperature of the body better than that of an artificial eye.

As to the complete final result in this case I do not know what it will be. Two months is probably too short a time for positive prognosis of the future and "time alone will tell;" but I have done other work with the Wolf's graft and while I have had a certain degree of shrinking it has not impaired the final success of the operations.

The other photograph gives an excellent picture of the present appearance of the patient with the artificial eye in position. On removal of this artificial eye the graft appears to be firmly attached to the tissues beneath, forming a complete cul-de-sac for the prosthesis. As it is now more than four months since the operation, I do not think we will have any further shrinking of the graft, as changes of that nature generally take place before the end of the second month; so that at the present time we may consider it a success. In conclusion it seems to me that no special plastic operation can be adapted to all cases. Some will do well by the implantation of the Thiersch graft, particularly so in the cases where we have a loss of the conjunctiva of the upper lid. The Maxwell operation, as reported by Ball, seems to meet the requirements of those cases, in which the lower cul-de-sac is so contracted that an artificial eye will not remain in place. My case is reported for the reason that, after a careful consideration of other methods, the procedure of Weeks seems to promise the best final result, and the ultimate story, up to the present time, seems to justify that conclusion.

164 EAST SIXTY-FIRST STREET.

*Read before the Section on Ophthalmology of the New York Academy of Medicine, January 15, 1906.

*Weeks: Transactions Tenth International Congress of Ophthalmology, Lucerne, 1904.

STRANGULATION OF SMALL INTESTINE THROUGH A SLIT IN THE OMENTUM.*

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The importance and great value of the omentum in guarding the visceral contents of the peritoneal cavity, and the readiness with which it responds to an impending bacterial invasion by walling off the offending organ from the general cavity, is well known to every abdominal surgeon. The hernial orifice, whether diaphragmatic or inguinal, is almost invariably guarded by the omentum in its effort to protect the intestine from possible impending injury. The case herewith reported demonstrates the omentum defeated in its effort so that it became itself a menace, and which but for the timely surgical intervention would have caused a fatal obstruction of the bowel.

Patient, J. S., age 63 years, Russian, was admitted to Beth Israel Hospital December 17, 1905. Family history negative. He had been an inveterate smoker for many years and had been in the habit of taking a glass of whiskey before each meal. He had long been troubled with constipation and as long as he could remember he has had a cough, with attacks, at times, of difficulty in breathing. Two years before admission to the hospital he was run over and received several bruises about his extremities, but he was not confined to bed. Some weeks after this accident he noticed the hernial swelling in the right groin.

Three days before admission, after his evening meal, he was suddenly seized with acute colicky pains in the abdomen. Earlier in the day he had taken his usual laxative, but without result. Ascribing his pain to an attack of indigestion, he brought on emesis and then took two compound cathartic pills. The pain continued throughout the night, and towards morning he had vomited several times. He then sent for a physician. He was treated for two days more, but his condition became worse. He was therefore sent to the hospital, and upon admission presented the following condition: Temperature, 101.°; respiration, 28; pulse, 100 and small. Tongue coated and dry, vomiting continuous and of brown fluid consistency. The abdomen was very much distended and tympanites was present.

There was a right bubonocele, easily reducible, the inguinal ring admitting two fingers. Urine showed a trace of albumen with hyalogranular casts. Laparotomy was immediately performed under ether anesthesia. As soon as the peritoneal cavity was entered several coils of distended, very much congested, and lymph-covered small intestine forced their way through the wound.

Exploration of the peritoneal cavity with the gloved hand revealed a mass of collapsed small intestine and attached omentum in the right iliac region. The mass being movable, it was readily delivered for examination through the wound. This mass when spread upon the abdomen revealed a coil of small intestine about eight inches in length, which had passed through an opening in the omental apron, about one inch from its free border. This coil of intestine was twisted on itself and strangulated, forming a volvulus, and was so firmly wedged in the slit in the omentum that it seemed impossible to reduce it without injury. The strangulation was released by dividing the omentum from the free border through to the constricting slit.

The intestine, upon being released and untwisted, readily resumed a viable appearance, and the collapsed portion began to distend. As it was evident that the obstruction was relieved, the abdomen was closed by layer sutures of catgut reinforced by a few of kangaroo tendon for the rectus muscle.

The stomach was then washed with a weak solution of bicarbonate of soda and the patient returned to his bed. The vomiting ceased immediately after the operation, and eight hours later the patient had a spontaneous fluid movement and his condition improved decidedly. The patient was discharged four weeks after admission to the hospital, and soon returned to his former employment.

The literature on this unique condition is rather scant. There are, however, a number of cases of intestinal obstruction reported which were caused by a slit in the mesentery. Treves, in his monograph on "Intestinal Obstruction," has an illustration of a similar case to the one here reported, the specimen of which is on exhibition in the University College Museum.

In 1889 Dr. Brown reported a case in the *Medical Standard*, of Chicago, in which the postmortem made on a patient admitted in a moribund condition to the hospital revealed a slit in the omentum through which several coils of intestine had passed which had become strangulated and produced a fatal obstruction. According to Treves, these slits in the omentum are either congenital or traumatic in origin.

The history and findings in this case would point to a possible adhesion of the omentum in the region of the right inguinal hernia, which, if we can accept the history as given by the patient, was caused by accident; the constant pressure of the intestine against the adherent apron had caused a stretching and an attenuation of this structure, which eventually gave way and permitted the coil of intestine to pass through and become strangulated.

1190 Madison Avenue.

*Read before the Surgical Section of the New York Academy of Medicine, April 6, 1906.

FOREIGN BODY IN THE ORBIT.

By T. A. BOOT, M.D.,

HOLLAND, MICH.

On the evening of December 22, 1905, Mr. D——, aged 68, of drinking habits and being at the time very drunk, had a fall, as a result of which the left eye was severely injured. There was, I am told, considerable hemorrhage, but aside from spending three days in bed he had no treatment.

On February 1, 1906, he came to my office. The contents of the orbit were badly inflamed and swollen; there was free discharge of pus and the eyeball was crowded into the upper inner quadrant. Lifting up and looking under the eyelid I found the cornea clear and vision present.

On February 7, the inflammation and swelling having somewhat subsided, a small black spot was noticed near the outer canthus. To the probe this felt hard, of some size and gave the feeling of dead bone. In the absence of any obtainable history of foreign body this it was supposed to be. As it was firmly imbedded, no effort at removal was made at this time.

On February 10 I removed it with forceps. It proved to be a fragment of clay pipe stem, discolored by age and tobacco, one and five-eighths inches long, and one-quarter inch in its widest diameter, weighing fifty grains. It had been lodged in the orbit forty-nine days.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, May 5, 1906.

THE MECHANISM OF THE AORTIC VALVES.

THE precise mechanism of the aortic semilunar valves and their relations to the sinuses of Valsalva and to the openings of the coronary arteries have, until quite recently, been questions of much uncertainty to physiologists. The exact position of these valves during systole was first definitely determined by Hesse and Krehl who, by plunging the fresh human heart into a saturated solution of potassium bichromate, and holding it there in a position of strong systole, succeeded in fixing it in this condition. They obtained specimens in this way which, on dissection, revealed a number of important facts. It was found that the semilunar valves during systole projected obliquely upward in the direction of the blood stream, neither lying flat against the walls of the aorta, as Bücke had believed, nor projecting horizontally inward in the manner described by Ceradini. It was further determined that, during this period of the cardiac cycle a number of strong muscular strands, obliquely placed in the vessel wall about the valves, contracted in such a way that they converted the entrance to the aorta into a narrow slit.

The peculiar position of the valves could be readily explained by the previous work of Ceradini. This investigator had shown that when fluid is forced through a narrow opening into a wide channel, not only is a strong axial current produced, but there are formed, as well, small circular currents or eddies which, moving at the periphery in a direction opposite to that of the central current exert strong pressure upon the upper surfaces of the valves, holding them away from the wall while there is pressure from below, causing their rapid and forcible closure as soon as this pressure ceases. The observations were made by noting the movements of small particles of lycopodium suspended in the fluid employed.

Ernst Mai (*Zeitschrift für klinische Medizin*, Vol. 58, No. 5) has repeated these experiments with improved technique, and, with a rather ingenious apparatus, has studied the action of the circular currents or eddies under conditions of varying pressure and resistance and as influenced by changes in the size of the opening through the valves. His conclusions, apart from their purely physiological interest, may tend to throw some light upon certain clinical conditions. He shows that there is an inverse relation between the size of the opening and the force of the eddies described above. The smaller, therefore, the aperture through the valves (the pressure, of course, remaining the same), the more violent and forcible are these circular currents; the greater, consequently, is the pressure they exert upon the valves from above, and the more rapid and perfect is the closure of these valves. Even very gradual enlargement of the aperture produced very speedy and marked diminution in the force and excursion of these currents.

Reasoning from this point, the function of the oblique muscle-strands of Krehl, which have been mentioned above, becomes clear. These at first sight appear only to throw increased work upon the heart by narrowing the opening through the aortic valves. This they undoubtedly do to a certain degree, but, by narrowing this aperture, they at the same time render the circular eddies more forcible, and thus aid in the rapid and perfect closure of the valves. The importance of this may be better appreciated when it is considered that even the most faultless of the pumps used in the industries, acting without these circular currents, because of the unchanging diameter of the valvular orifice, are operated with a loss of energy, by regurgitation, amounting to as much as 20 per cent.

As Krehl has pointed out, this would account for cases of aortic regurgitation in which the valves themselves remained entirely intact, but in which, by atheroma, the narrowing produced normally by these oblique muscle-bundles, was prevented. Mai further concludes from his experiments that, while the force behind directly influenced the power and efficiency of the circular currents, these were entirely uninfluenced by the resistance offered above the valves. Should this be borne out by further work, it would tend to show that the sharp snapping closure of the valves, so familiar to the physician as an accompaniment of nephritis, is due rather to the cardiac hypertrophy than to the back pressure associated with the high arterial tension.

Mai's experiments cannot, of course, be regarded as conclusive. The necessity for transparency of the walls of his apparatus in order that the currents could be observed, rendered it impossible to include in his considerations the elasticity of the vascular coats. Other imperfections necessarily accompanying mechanical imitation of so delicate an apparatus as the human heart were unavoidable; but, so far as they go, the results of these experiments serve to add materially to our understanding of the aortic mechanism.

THE RADICAL OPERATION FOR CANCER OF THE UTERUS.

THE operative treatment of carcinoma of the uterus has been marked by alternating periods of optimism and pessimism, and at the present time it is scarcely possible to judge, from the literature on the subject, which of these two is prevalent. When vaginal hysterectomy was accepted as the elective operation for this condition, an improvement in the prognosis was looked for. Experience has demonstrated, however, that this assumption was somewhat premature, and in reaching out for a more effective means of eradicating the disease, abdominal hysterectomy, together with the removal of the adjacent tissues and lymphatic organs, was proposed and has been largely employed. While it was soon recognized that this procedure was very difficult and would be accom-

panied by a greater immediate mortality than the simpler and less extensive operations previously in favor, it was expected nevertheless that the ultimate results would justify the employment of the more complex method. J. G. Clark, however, who discusses this subject in the *University of Pennsylvania Medical Bulletin* for January, 1906, believes that the experience of many operators has not warranted the universal adoption of this radical operation. He advocates the removal, as far as possible, of the surrounding tissues without any regard being paid to a possible glandular metastasis, for it has been quite conclusively demonstrated that these patients die from local continuance of the growth rather than from widespread secondary deposits. If the glands are already involved, recurrences are almost unavoidable, even if the most radical measures be adopted.

There is considerable difference of opinion with reference to this question of metastasis in cancer of the uterus, and it has been pointed out by a number of recent observers that the extent of the disease does not furnish any criterion as to the presence or the extent of the metastasis, nor is the size of the gland of any clinical value in deciding whether it is the seat of a malignant deposit. Another peculiarity to which Clark calls attention is the fact that although a lymph gland may be greatly enlarged, it may not necessarily be involved, whereas a neighboring gland of minute size may, on histological examination, be found to contain cancerous deposits. This seems to be a good reason in a way for avoiding the extensive radical operation, especially if it is also true, as claimed by Schauta, that in only 13 per cent. of the cases is the glandular metastasis localized in the pelvic area. Aside from the futility of attempting a complete extirpation of all the pelvic glands, it has also become known that these glands are not the only places in which the cancer cells are deposited, but that the lymph vessels themselves and the surrounding connective tissue are often involved.

With these facts before us the outlook for an improvement in the mortality rate by a resort to a more radical operation for carcinoma uteri is, as pointed out by Clark, decidedly discouraging. Experience has taught that in most cases the radical operation is futile because metastatic distribution is apt to be very irregular; it may be present even in the earliest cases, and when the lower accessible glands are involved the upper inaccessible ones are in most instances also affected. Added to these uncertainties is the largely increased immediate mortality that must necessarily follow this procedure from shock, infection, and other complications. The writer's conclusion, although reluctantly reached, is that we lose more than we gain by the extreme radical operation, and in this he will undoubtedly be supported by many other operators. He still advises the abdominal extirpation of a carcinomatous uterus, and claims that it can be carried out in the most complete and radical manner by the use of the actual cautery. No dissection of the pelvic glands is attempted, with the possible exception of a few which are palpably enlarged and readily accessible. This step is of value, however, only as an aid in determining the general prognosis in any given case. It seems unfortunate that no operative means should have been devised by which more than 50 per cent. of the patients can be saved, but as a matter of fact this is a much hoped for but still unaccomplished desideratum.

Our Brethren in San Francisco.

We hope that the appeal of the joint committee of the New York Academy of Medicine and of the Medical Societies of the Counties of New York and Richmond, printed in another column, will meet with a prompt and liberal response on the part of those to whom it is addressed. It is known that hundreds of our colleagues in San Francisco have lost their homes, their books, and their professional instruments; many have also lost temporarily a great part of their clientèle, for the homes of the latter are destroyed and many are scattered through various nearby towns, and for the time being could not find their doctors even if they remained in the city. The donations made to the Red Cross and other relief associations go to feed the hungry, clothe the naked, and shelter the homeless, and no part of these sums could be diverted to such objects as the replacing of surgical instruments; even if it could, physicians would shrink from accepting it, for it would savor of charity. But no such feeling would or should attach to the acceptance of aid from their medical brethren. We would suggest to those who are inclined to contribute of their means to the needs of their San Francisco colleagues that he gives twice who gives quickly. The need is urgent and the time for aid is now. We would call attention also to the appeal of the Relief Committee of Kings County for contributions of books and instruments. Nearly everyone can spare a few books from his library or a thermometer or a few instruments from his office case, and such will be of exceeding service to the physician despoiled of his armamentarium. But the books should be recent editions, and the instruments should be in good condition and serviceable. Rusty instruments of antique pattern and old books are not worth the transportation, and the committee would probably not forward them, even if they were sent in.

The Investigation of the Street-Cleaning Department.

The investigation of the methods of Dr. Woodbury, Commissioner of Street Cleaning of New York City, instituted by the Board of Aldermen, has been going on in a desultory way for a couple of weeks, with the result thus far which everybody who knew the Commissioner, or knew of him, expected. Nothing whatever has been brought to light which reflects or can be twisted in any way to reflect upon his personal character or the honesty of administration of his department so far as essentials go. No doubt there has been some petty "grafting" by subordinates; the collectors of ashes and garbage are doubtless quickened in their zeal by judicious tips, and may perhaps be neglectful of those householders who scorn bribery even in small sums; but that there has been any wrongdoing or even undue favoritism in the award of contracts or in any other of the large concerns which came directly under the supervision of the Commissioner or his chief lieutenants, no one, we are persuaded, really believed when the investigation was begun. The fault of the Commissioner has been that his attention is fixed too closely on secondary matters—on the economical and scientific disposal of refuse rather than the practical cleaning of the streets. He

would be deserving of praise for the reforms which he has instituted in this direction had it not led to a neglect of his titular duties. He is the Commissioner of Street-cleaning, and that should be his first effort. The refuse collected must, of course be disposed of, but the primary duty of the department is to remove the dirt from the streets, and the manner of its disposal is, albeit important, a secondary consideration. It is better to dump it into the sea, after the old-time wasteful and unscientific methods, than to leave it on the streets, if the appropriations at the Commissioner's disposal will not permit of both collection and disposal. If Woodbury's political enemies had started this investigation along this line they would have had a better chance of "putting him in a hole," but the pit which, in their malevolent shortsightedness, they have tried to dig for him is one into which they themselves are likely to fall.

"The Principles of Ethics."

The Committee on Referendum of the Medical Society of the State of New York has sent to the members of the society a blank form on which they may register their will regarding the adoption or rejection of the emasculated code, or, as it is now called, "principles" of ethics of the American Medical Association. The committee has decided to keep the polls open only ten days after the date of the issuance of the ballot (noon of April 27), so that the matter will be determined at 12 o'clock noon on Monday, May 7. It is therefore too late to discuss the question now, for such of the members of the State Society who have enough interest in the matter to vote at all will probably have done so before this issue of the Medical Record is printed. There may be some, however, who have been dilatory in turning in their ballots. If there are any such we would urge them to mail an emphatic *No* before noon on the coming Monday. If they would ask why they should vote in this way, we would refer them to the analyses of those "principles" presented by Dr. Benedict of Buffalo in the issue of the Medical Record of December 9, 1905, and by Dr. Sturgis of New York City in that of January 27, 1906. "The Principles of Medical Ethics of the American Medical Association, being suggestive and advisory, shall be the guide of members in their relations to each other and to the public." This is pure nonsense. If the principles are "suggestive and advisory" they are not binding on anybody, whether they are adopted or not, and a vote for approval will mean only that the society commits itself to the commendation of a lot of sappily expressed platitudes without in any way obligating its members to an observance of them. It will make no difference, of course, in the conduct of any member of the State Society whether this inoperative code is adopted or not, for the question is purely academic. If the code were mandatory there would be some sense in it, in spite of its Tupperian phraseology, but with its present weak enacting clause it is even more silly than it is inconclusive, and we hope the great Medical Society of the State of New York, the parent of the American Medical Association, will not make itself ridiculous by adopting it.

Gasoline in the Sewers.

Many delinquencies have already been laid at the doors of automobile users, and probably the list of the undesirable concomitants of progress in this particular field has not yet been exhausted. Public attention has recently been directed toward one abuse connected with the use of gasoline motors in rather dramatic fashion by the series of sewer explosions which has occurred on the West Side in the region between Fiftieth and Fifty-ninth streets, the automobile district. The early suspicions that these heretofore unheard-of accidents were due to the presence in the sewers of gasoline vapor emanating from the many garages in the neighborhood have apparently been justified by the reports of the inspectors of the Departments or Sewers and of Combustibles and of Dr. Ernst J. Lederle, ex-Commissioner of Health, who was commissioned to investigate the matter. The Health Department has accordingly taken the question up and the owners of garages have been notified that if any more gasoline is allowed to escape into the house drains and sewers prompt arrest of the offenders, if detected, will follow. It remains to be seen whether the automobiling fraternity will be more amenable to control in this direction than they have been in regard to speed regulations. The possibilities of a serious catastrophe resulting from the flooding of the sewerage system with this intensely dangerous vapor have been clearly enough portended by the minor explosions that have already occurred, and penalties for the wilful jeopardizing of the lives and property of others in this way could hardly be made too severe.

Primary Carcinoma of the Vermiform Appendix.

The relative frequency of primary carcinoma of the vermiform appendix has become apparent only within comparatively recent years, since systematic histological examination of all appendices removed at operation has become common. A number of careful and elaborate studies of the subject have been made, both in this country and abroad, and the results are summarized in a recent communication by Dr. Leon K. Baldauf (*Albany Medical Annals*, December, 1905), who himself makes a report of three cases from the Bender Laboratory. From an analysis of the cases recorded the conclusion is reached that primary carcinoma is present in from one-third to one per cent. of the appendices removed at operation. The condition is rarely discovered microscopically at autopsy. The growth is most common during early life, occurring usually between the ages of ten and forty, and the largest number being found during the third decade. The disorder occurs with equal frequency in the two sexes. Acute or chronic inflammatory lesions are usually present, and they are responsible for the symptoms demanding operation. The tumor itself while localized gives rise to no pathonomonic symptoms. Direct extension to other organs and metastases are rare. The usual type of neoplasm is the simple alveolar carcinoma, adenocarcinoma occurring next in frequency, while colloid carcinoma is unusual. Conclusive information concerning the relation of primary carcinoma to other diseases of the appendix can be obtained only by careful routine histological examination of all appendices removed at operation.

The Medical and Chirurgical Faculty of Maryland.—At the annual meeting of this society, held in Baltimore Arpil 24-26, the following officers were elected. *President*, Dr. Hiram Woods; *Secretary*, Dr. John Ruhräh; *Treasurer*, Dr. William S. Gardner.

The Fifteenth International Medical Congress.

HELD IN LISBON, APRIL 19-26, 1906.

(Special Cable Report to the MEDICAL RECORD.)

(*Continued from page 673.*)

AT the general session of the Fifteenth International Medical Congress, on April 23, Professor von Hansemann of Berlin delivered an address on the "Significance of Domestication in Relation to Disease in Man and Animals." Professor Crocq of Brussels followed with an address, in which he discussed the "Mechanism of the Reflexes and of Muscular Tone." On Wednesday, April 25, Dr. N. Senn of Chicago addressed the Congress on the subject of cancer, his title being "The International Study of Carcinoma."

The closing session of the Congress was held on Thursday, April 26. At the termination of the meeting the congressists joined in singing the Portuguese national anthem and the president of the Congress, Councillor Costa Alemao, delivered his closing address, in which he expressed the thanks of the members to the Royal House, to the city of Lisbon, to the Government, and to the citizens for the welcome and hospitality they had so warmly extended to all those taking part. He also on his own behalf thanked the members of the Congress for their cooperation in making this one of the most successful of the international congresses that had yet been held. This address was greeted with great applause, and when the speaker had closed Dr. Angel Fernández-Caro, vice-president of the Spanish National Committee, proposed three cheers for President Costa Alemao, which were given in the various tongues of the different nationalities represented. Dr. Miguel Bombarda, secretary of the Congress, then extended the thanks of the assembled delegates to the Royal House and to Portugal for their friendly reception, saying that he was sure the foreign congressists would never forget Portugal and Portuguese hospitality, and would have many pleasant memories of the country and its people to carry back with them to their homes. They had learned to recognize the fact that Portugal's glory did not all lie in its former greatness, but that it was still one of the foremost countries in science and art. The secretary then read resolutions relating to international agreements regarding the regulation of emigration, the prophylaxis of tuberculosis, and the cancer question, which had been formulated as the result of the deliberations of the Congress, and which were adopted. He also announced that the next Congress would be held in 1909, in Budapest, under the presidency of Professor Mueller, and with Professor Grosz as secretary. The Hungarian national hymn was then sung, and Professor Mueller arose amid great applause and in Hungary's name expressed thanks for the honor and privilege of serving as host to so distinguished a body. The president then adjourned the Congress *sine die*.

During the week many delightful entertainments had been provided, which were well attended by the visiting medical men and the ladies of their families. Prominent among these were the dinner given by the King to the official representatives of the various governments, a concert given to the ladies in the Zöological Gardens, and a reception held under the auspices of the Geographical Society. The Government and the municipality also gave elaborate receptions.

News of the Week.

Aid for Medical Sufferers in San Francisco.—The following appeal has been addressed to the members of the medical profession of the Boroughs of Manhattan, Richmond, and the Bronx:

"The undersigned, a committee appointed by the New York Academy of Medicine, the Medical Society of the County of New York and the County of Richmond, appeal to the members of the medical profession of this city for funds to help our medical brethren of California, who have suffered losses in the recent great disaster. The large sums of money already raised by the public must be spent in providing food, shelter, and the necessities of life. It is reported that over five hundred physicians in San Francisco alone have lost their homes and all their medical and surgical equipment. They need direct financial help in order to enable them to take up their work again, and we believe that they will be more willing to accept this help from their medical brethren. We ask, therefore, that every physician send to the treasurer some contribution, large or small, and that it be sent at once. The money will be received and acknowledged by the treasurer, but the list of contributors will not be published. Arrangements will be made to have the fund, when completed, sent to a properly authorized person in California, probably one designated by the California State Medical Society. A final report will be made and sent to each contributor. Checks should be made out and money sent to Dr. Charles H. Richardson, Treasurer, Medical Relief Committee, 336 Lexington avenue, New York City. (Signed) Charles L. Dana, M.D., John H. Huddleston, M.D., Reginald H. Sayre, M.D., for the New York Academy of Medicine: Floyd M. Crandall, M.D., John Van D. Young, M.D., Chas. H. Richardson, M.D., for the Medical Society of the County of New York; George P. Jessup, M.D., Charles E. Pearson, M.D., for the Richmond County Medical Society."

The Physicians' Relief Committee of Kings County has sent out a request for contributions to be sent to the San Francisco County Medical Society. The profession have responded generously, and a first installment of $1,200 was forwarded on May 1. The committee is now sending out an appeal for contributions of instruments, books, etc., for those medical practitioners in San Francisco who have lost their equipment. These contributions will be received and packed by the local Red Cross, and transmitted by the Wells Fargo Express Company, free of charge. The chairman of the Kings County Relief Committee is Dr. L. A. W. Alleman, 64 Montague street.

Seaside Hospital Bill Signed.—The Seaside Hospital and Park bill which authorizes the city to expend $2,500,000 for the purchase of land near the seashore for a public park and convalescent sanatorium was signed by Mayor McClellan on April 27. Several sites have already been inspected, and it is likely that the city will acquire a tract of land at Far Rockaway which includes a beach front of more than four miles and 850 acres of ground. The park, when established, is to be under the control of the Park Department, but will be for the use also of the Departments of Charities and Health, and the Trustees of Bellevue and allied hospitals. Charitable societies may also lease space in the park.

Mosquito Fighting in New Jersey.—Work is to begin immediately on the extermination of mosquitos in New Jersey. Governor Stokes, on April 26, signed the Brown mosquito bill which was passed by the Assembly and Senate some

weeks ago. The measure provides for the appropriation of $350,000, or $50,000 annually for seven years, to be used in fighting the insects.

Patent Medicine Bill.—The State patent medicine bill introduced by Senator Stevens, which provides for the proper labeling of medicinal preparations containing alcohol or narcotic or other potent drugs, and for their inspection, analysis, and regulation of manufacture, passed the Senate on April 27 by a vote of 30 to 15. There was some opposition to the passage of the measure, on the ground that it was in favor of the medical profession and discriminated against druggists.

Pathological Society of Philadelphia.—At the annual conversational meeting held April 26 Dr. Edward R. Baldwin of Saranac Lake delivered an address entitled, "The Mechanism of Resistance to Tuberculosis." The discussion was participated in by Drs. Leonard Pearson, J. J. Kinyoun, M. P. Ravenel, and Joseph McFarland.

State Lunacy Commission.—Dr. William Mabon, the new superintendent of the Manhattan State Hospital, has resigned his position as president of the State Lunacy Commission. Dr. Pilgrim, superintendent of the Hudson River State Hospital at Poughkeepsie, is suggested as his successor.

The Pure Food Bill.—Endorsement in letters to congressmen was given recently by the Chicago Medical Society to secure reform in the national pure food laws. To each of the nine members of the local Congressional delegation was mailed a copy of a petition signed by 550 members of the society. Congressman Mann was especially urged to use his efforts to defeat the two amendments proposed in the House to the pending pure food bill. These relate to a restricted national commission of five experts, and the unrestricted sale of medicines containing narcotics without an analytical label on packages containing them.

American Climatological Association.—The twenty-third annual meeting of this association will be held in Atlantic City at the Marlborough-Blenheim Hotel May 12 and 14, 1906. The secretary is Dr. Guy Hinsdale of Hot Springs, Va., and the members of the committee of arrangements are: Dr. Philip Marvel, 1616 Pacific avenue, Atlantic City, Dr. Jas. B. Walker, 1617 Green street, Philadelphia, and Dr. Thos. Darlington, Fifty-sixth street and Sixth avenue, New York City.

Illinois State Medical Society.—The fifty-sixth annual session of this society is to be held at Springfield, May 15, 16, and 17, under the presidency of Dr. Henry H. Mitchell of Carbondale. The scientific work of the society will be divided into two sections, medical and surgical. The medical section has 44 papers mentioned in the program, and the surgical section 30.

Dr. Albert Vander Veer of Albany has been elected to the State Board of Regents to succeed Mr. Charles S. Francis, resigned.

Health Board in Jersey City.—Dr. John H. Finnerty was appointed by the Mayor a member of the Jersey City Board of Health on April 28 to serve for a period of three years.

Dr. Eugene S. Talbot of Chicago has been unanimously elected an honorary member of the Belgian Society of Stomatology.

Sleeping Sickness in Africa.—A remarkable increase in the morbidity from this disease is reported from tropical Africa. It is stated that it has now reached the west shores of lakes Mweru and Tanganyika, where the natives are dying in large numbers. British Central Africa is threatened, and there is every reason to fear that the disease in time will reach the thickly populated country. It is thought that the spread of the disease is chiefly due to the increased facilities of transport that have accompanied civilization. The natives are now constantly moving, whereas in the old days of tribal wars they did not move far from the native villages.

University Education More Expensive at Bonn.—It is reported from Bonn that owing to the proposed new brewery tax that is to be levied in Germany the restaurant-keepers of that city have decided to increase the price of beer 25 per cent. Bonn is the first university town to take this step, which, it is said, is causing considerable apprehension in academic circles, lest the rise in the price of this pabulum of learning may impel students to prefer some other university town where beer is cheaper.

Plague in India.—India is suffering severely from plague which, during the past month, has increased rapidly in nearly every province. Bengal has been reporting 5,000 deaths a week and Calcutta had forty deaths in one day in March. Bombay has 150 deaths every day. Matters are equally bad in the central provinces, in spite of the efforts to crush the disease by segregation, inoculation, etc.

An Epidemic of Diphtheria.—A serious outbreak of this disease is reported from the town of Barre, Mass., where forty-eight cases have developed. In the Stetson House for Orphan Boys thirty-five of the forty-two inmates are down with the infection.

Adjunct to the Presbyterian Hospital of Chicago.—The directors of the Presbyterian Hospital of Chicago on April 26 announced that $350,000 of the $500,000 desired for the erection of a new private patient building had already been subscribed. It is intended to use the revenue accruing from this part of the institution for the purpose of eliminating the annual deficit which results from the charitable work of the hospital.

International Congress of Chemistry at Rome.—The International Congress of Chemistry was opened at Rome on April 26 by King Victor Emmanuel and Queen Helena in the presence of 1,800 members. The American delegates are H. W. Wiley, Chief of the Bureau of Chemistry of the Department of Agriculture; Prof. Edward Hart, Lafayette College, Doylestown, Pa.; W. D. Horn, Yonkers; C. A. Browne, Louisiana University; C. B. Dudley, Altoona, Pa., and J. U. Lloyd, Cincinnati.

Metric System Bill Defeated.—The House Committee on Coinage, Weights, and Measures on April 27 voted down a motion to report the Littauer bill establishing the metric system of weights and measures.

American Society of Superintendents of Training Schools for Nurses.—The twelfth annual meeting of this association was held on April 26 at the Academy of Medicine. Addresses were delivered by Ex-Mayor Seth Low and Miss A. W. Goodrich, president of the association and directress of nurses in the New York Hospital.

Free Alcohol Bill Shelved.—The free alcohol bill which passed the House a few weeks ago is apparently to be denied consideration before the

Senate through the action of the Senate Committee on Finance on the ground that it will possibly affect the revenue of the country unfavorably.

Meningitis in Virginia.—A severe epidemic of meningitis is reported from Franklin, Va., a town of 2,000 inhabitants twenty miles west of Suffolk, and many deaths have already occurred.

Indiana Cigarette Law.—The Parks anti-cigarette law, passed by the last Legislature, has been declared valid by the Supreme Court. According to the decision, it is illegal to sell cigarettes in Indiana or to keep them for sale, but it is not illegal to smoke them and it is not illegal to bring them into the State.

Alabama State Medical Association.—The following officers were elected at the last meeting of the annual session of this society on April 20 in Birmingham: *President,* Dr. George T. Mc Whorter of Riverton; *Vice-Presidents,* Dr. Louis W. Johnston of Tuskegee, Dr. A. J. Coley of Alexandria City; *State Health Officer,* Dr. W. H. Sanders; *Secretary,* Dr. J. N. Baker of Mobile; *Treasurer,* Dr. Henry G. Perry of Greensboro.

South Carolina Medical Association.—This association, at its meeting held at Columbia on April 19, elected the following officers for the ensuing year: *President,* Dr. T. P. Whaley of Charleston; *Vice-Presidents,* Dr. W. P. Timmerman of Edgefield, Dr. Henry Horlbeck of Columbia, Dr. M. G. Salley of Orangeburg; *Secretary,* Dr. Walter Cheyne of Sumter; *Treasurer,* Dr. C. D. Aimar of Charleston.

Southwest Missouri Medical Association.—At the annual meeting of this association held in Springfield on April 20 officers were elected as follows: *President,* Dr. T. R. Loer, Billings; *First Vice-President,* Dr. Finis L. Anderson, Joplin; *Second Vice-President,* Dr. O. N. Carter, Brookline; *Secretary,* Dr. H. S. Hill, Springfield; *Treasurer,* Dr. W. P. Patterson, Springfield.

South Idaho Medical Association.—At the annual meeting of this association held in Twin Falls, April 20, the following officers for the ensuing year were elected: *President,* Dr. E. W. Klienman of Shoshone; *Vice-President,* Dr. W. F. Pike of Twin Falls; *Secretary,* Dr. J. M. Taylor of Boise.

Plymouth (Mass.) District Medical Society.—Officers were elected as follows at the meeting of this society, held on April 18, at East Bridgewater: *President,* Dr. Frank G. Wheatley; *Vice-President,* Dr. Fred J. Ripley; *Secretary and Treasurer,* Dr. A. C. Smith.

Obituary Notes.—Dr. Israel T. Buckbee of Amsterdam, N. Y., died on April 25, at Fonda, at the age of eighty-six years. He was graduated from the Albany Medical College in 1841 and had been a member of the New York State Medical Society since 1861.

Dr. Chas. F. Moulton of West Roxbury, Mass., died on April 24, of tuberculous meningitis at the age of forty years. Dr. Moulton was born in Camden, Me., and was graduated from Bowdoin College in 1887, and from Dartmouth Medical School in 1890. At the time of his death he was on the staff of the Boston City Hospital and the Massachusetts Eye and Ear Infirmary.

Dr. Benjamin H. Burrell, formerly of Roxbury, Mass., died at Denver, Col., on April 23, at the age of fifty-three years. After practising for some years in Roxbury, he went to Lewiston, Me., in 1882, where he took the Chairs of Anatomy and Physiology in Bates' College. In 1884 he removed to Dorchester, Mass., where he resumed active practice.

Dr. J. P. Waste of Plainview, Minn., died on April 17, at the age of sixty-nine years. Dr. Waste had practised in Plainview since 1865 and was a charter member of the Southern Minnesota Medical Association.

Dr. Emil Hertel of Wilmington, Del., died on April 23, at the age of fifty years, after a long illness. He was born in Germany, but came to this country at the age of fourteen years and received his medical degree from the Jefferson Medical College. He had practised in Wilmington for thirty years.

Dr. Peter L. Horne of St. George, S. C., died on April 21, at the age of sixty-nine years. He was graduated from the Medical College of South Carolina and served through the Civil War as assistant surgeon in the Confederate States Army. He had been vice-president of the State Medical Society, and president of the Dorchester County Medical Association from its organization until his death.

Dr. Emma D. Cook of Detroit died on April 14, at the age of fifty-nine years. She was born in Concord, Mich., and in 1892 was graduated from the medical department of the University of Michigan, since which time she had practised in Detroit.

Dr. J. B. Hinds of New Hope Ala, died at Huntsville on April 21. He was a graduate of the Mobile Medical College, and during the last three or four years had practised in Madison and Jackson counties.

Dr. Benjamin Pennebaker died at Philadelphia on April 25 at the age of fifty-two years. He was graduated from the medical department of the University of Pennsylvania in the class of 1873. He had been for thirteen years chief resident physician at the House of Correction, and for twenty-four years attending physician at the Franklin Arsenal, and he was also visiting physician to the Holmesburg County Prison.

Dr. Leonard Keehn of St. Louis died at Los Angeles, Cal., on April 9. Dr. Keehn was a graduate of the St. Louis Medical College and had been practising in St. Louis for the past five years.

Dr. J. W. B. Wellcome of Sleepy Eye, Minn., died on April 8, at the age of eighty-one years. Dr. Wellcome was born in Maine and began the practice of medicine in 1850. In 1856 he went to Wisconsin, and in 1858 he located in Garden City, Minn. He removed to Sleepy Eye in 1873, and continued in practice until about a year ago. He served as surgeon in the Tenth Minnesota Infantry during the Indian wars, and later was appointed a pension examiner.

Dr. I. A. Ketron of Clarkesville, Ga., died on April 12, at the age of fifty-eight years. He had practised in Clarkesville since 1883.

Dr. J. K. Milbourne of Clinton, Ia., died on April 12 at the age of fifty-one years. Dr. Milbourne was born in Ohio and was a graduate of the University of Iowa. He had served as president of the Iowa State Medical Society and as president of the Clinton Medical Association.

Dr. G. W. Beggs of Sioux City, Ia., died on April 10, at the age of sixty-nine years. He was born at Plainfield, Ill., and received the degree of M.D. from Rush Medical College in 1862. After his graduation he served for three years as surgeon to the One Hundred and Sixth Regiment Illinois Volunteer Infantry, and at the close of the war settled at Napierville, Ill. In 1885 he was elected surgeon-general of the Union Veteran Army of the United States, with the rank of brigadier-general, and he was for ten years president of the Sioux City College of Medicine.

Correspondence.

THE THIRD ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(From Our Special Correspondent.)

THE DYSENTERY BACILLI AND THE SERUM THERAPY OF THIS DISEASE—AMEBIASIS—FIGHTING THE PLAGUE IN JAPAN—BERIBERI—AGGRESSINS AND IMMUNITY.

MANILA, P. I., March 5, 1906.

THE third scientific session of the Third Annual Meeting of the Philippine Islands Medical Association took place in the library of the Bureau of Science, at 3 p. m., March 3.

A paper was read by Professor K. Shiga, of the Institute of Infectious Diseases, of Tokio, entitled, "Ueber die Typen der Dysenteriebacillen und die Serum-Therapie der Dysenterie," and also, "Epidemiologische Beobachtungen über die Dysenterie in Japan." Professor Shiga started his paper by stating that Japan lay between latitudes 21 and 50. He stated that reliable statistics on the bacillary type of the disease went back only thirty years. Amebic dysentery was found in Formosa, but reliable reports had yet been made only on the bacillary form. He stated, for the purpose of his paper, the mainland of Japan need only be considered. During the last thirty years there have been two great epidemics of dysentery, which spread from south to north. The first began in 1883, and lasted until 1888; the second began in 1892 and lasted until 1895, disappearing very suddenly during the latter part of that year. Since that time, smaller epidemics have been encountered, in which as high as sixty thousand people were stricken. Experience had shown that whenever the dysentery made its appearance in the small towns practically everyone in the town was stricken. In larger places as high as 10 per cent. suffered.

The spread is due chiefly to three factors: (1) Healthy persons harboring the bacillus in their intestines. (2) Those persons who only suffered from slight attacks, and consequently, their movements not being interfered with. (3) Those in a convalescent stage of the disease; on account of the organism being found in the stools as long as two weeks after the attack. Research, as made by Dr. Amako, of Kobe, showed that the bacillus could not be cultivated either from the gall bladder or the spleen, and that in all probability the organism is never present in the blood. He stated that among the first to point out the difference between the bacillary and amebic forms of the disease were Professor Flexner and Dr. Strong, at Manila. The speaker said that an important clinical distinction was the fact that the bacillary form is generally very acute, while the amebic form is more or less chronic in character.

In the succeeding years much work has been done by a great many observers, and various types of the bacillus have been found and described. Four different groups have received recognition, but Shiga believed that the classification which he made some years ago should still stand, viz: (1) The type which does not form indol; (2) The type which forms indol with great difficulty; and (3) The type with only slight indol forming properties.

An important observation made last year by Dr. Amako, of Kobe, was to the effect that the bacillus occurs in both an acid and a non-acid form. It was the acid form that was probably described first, from Manila, by Dr. Strong. Owing to the difference in the organisms mentioned above, it could be scarcely hoped that a serum made from any one of them would be effective against dysentery produced by other types. Experiments made showed that horses immunized against type No. 1 and type No. 2, mentioned above, were not immunized against type No. 3. He stated that the best method of obtaining a universal serum that would be effective in any type of the disease was to immunize horses with each individual group of organisms, and then mix the serums from the three different horses with equal proportions, and thus obtain a serum that contained the necessary elements to combat any of the types of the disease that might be encountered. He stated that one of the principal drawbacks to this method, however, was that the dose of the serum would necessarily have to be very much larger than if only the serum of one particular kind of organism was used.

The next paper read was entitled, "Amebiasis, Its Complications and After Effects," by Dr. W. E. Musgrave, Pathologist of the Bureau of Science. He divided his subject into four parts: (1) Diseases accidentally associated with Amebiasis; (2) Diseases of different etiology, in which the association produces modifications in one or both diseases; (3) Direct complications; (4) After effects of amebic diseases.

He said the first heading need only be mentioned, because it would include practically the whole subject of tropical medicine. In passing, he stated that it is important to observe that in beriberi, if the treatment was directed against intestinal parasites it had a most favorable influence upon the prognosis of the coexistant beriberi. Liver abcess was found by Rogers, in India, in 200 cases in making 5,000 autopsies. Strong and Musgrave, in Manila, found liver abscess in 27 out of 400 autopsies, most of which occurred in American soldiers. He stated the most likely route of entrance of ameba to the liver was through bowel lesions, which afterwards became entirely repaired. This belief was strengthened by the fact that abscesses were found in the right lobe in about 90 per cent. of the cases, and that solitary abscesses are practically found only in the right lobe. Liver abscess was very rare in children, particularly those under ten years of age; amebic abscesses in natives of the islands were exceedingly rare, although they had been observed by Drs. McDill and Herzog. Abscesses were also rarely found in Chinese. He stated that ameba are rarely found in the gastrointestinal tract above the ilcocecal valve; that perforating intestinal ulcers were a very frequent complication in untreated cases, but were rare if proper therapy had been instituted early. He stated that in 150 post-mortem examinations made by himself of intestinal amebiasis 6 per cent. showed amebic lesions of the appendix. The nervous system often showed disturbances intimately associated with amebic dysentery, as pointed out by Allen Starr; that old nervous troubles are often "fired up" by dysentery. In conclusion, he stated that in the majority of early treated cases of simple amebic colitis, there were no serious sequelæ, even in cases of long standing, where there had been considerable passage of blood and mucus, and even where there had been sloughs, rejuvenation had been so satisfactory that the perfect function of the bowels was restored. In well-established cases a change of climate was almost absolutely necessary. He stated that the abdominal pain and soreness was a common sequela, and often lasted for years.

The next paper read was that of Professor S. Kitasato, of Tokio, entitled "Ueber die Bekämpfung der Pest in Japan" (Fighting Plague in Japan). He stated that in 1896 an epidemic of plague which was raging in India and Hong Kong at that time, spread to Formosa, and from there Japan was threatened. The strict preventive measures which were instituted were successful in eliminating the spread to Japan proper. The first vessel arriving with plague on board was at Yokohama, in 1896. Since that time vessels have arrived frequently at Nagasaki and Kobe, with cases of plague on board. He stated that the origin of the disease in Japan was not due to persons, but to inanimate objects; that the plague had been introduced into Japan through freight, and in all probability with cotton. At that time it was not recognized that this was a source of danger, and the infection spread rapidly in the principal trading ports. Rats soon became infected, and from them human beings, in all probability, contracted their infection. The principal outbreaks in Japan occurred in 1899-1900 and 1902-1903, both of which times the disease was probably introduced in cotton imported from Hong Kong. The last outbreak occurred in 1905, which was still prevailing, and has probably been one of the worst from which they had suffered.

The total number of cases in Japan, during 1905, was: Tokio, 15; Chiba, 11; Osaka, 134; Nara, 2; Kagawa, 36; Kobe, 90; Moji, 9. He called attention to the enormous amount of money that these outbreaks have cost, citing Kobe, where the first outbreak cost 352,500 yen ($176,250); the second outbreak in Tokio cost 320,000 yen ($160,000), or, briefly stated, 21,333 yen ($10,667) for each victim. During the present outbreak Kobe has already spent 310,000 yen ($155,000), and Osaka, 470,000 yen ($235,000) in combating the disease. He stated that this was only the direct burden, and that the indirect loss, by interference with domestic and foreign affairs, could scarcely be estimated.

The first epidemic could be traced to the importation of raw cotton and Chinese rice from Bombay and Hong Kong, respectively. The second epidemic entered through Yokohama, with freight consisting of raw cotton. The present epidemic at Osaka and Kobe could be traced to a steamer that entered Kobe with raw cotton. The experience of Japan with plague has been that it generally attacks rats first, afterwards man. In February, 1905, many infected rats were found in Kobe, but it was not until May that human victims were detected. He laid particular stress upon the fact that more infected rats are found in the winter epidemics than in summer epidemics.

The manner of combating the disease in Japan consisted first, in the quarantine service, which acted as an outpost defense. On this alone the safety of the country could not be assured. It was necessary to divide the country into small districts, in each of which a Board of Health is necessary to combat the disease whenever it makes its appearance. He praised highly the practice of the United States to have properly qualified medical officers stationed on duty at the principal ports in the world. He stated, by

this means alone, there was greater security to the country than any other measure which has been suggested up to the present time. The most successful method of combating the disease, he had found, was to take measures looking toward the destruction of the rats. If these could be eliminated, the disease could be expected to disappear. He stated that in Tokio alone there were examined bacteriologically from three to four thousand rats daily, and stated further, that the examination of rats was the best guide to prophylaxis, and that Japan had several times been saved an outbreak of the disease by its prompt detection in rats; that isolation, disinfection and quarantine were absolutely necessary, so far as human subjects were concerned. He stated that permanent results could be hoped for only by the construction of warehouses where freight is stored in such a manner as to preclude the entrance or breeding of rats. The present plan in Japan was that whenever a case of plague was found in a house, such house was surrounded by a zinc wall about three feet high, and sunk into the ground about two feet, so as to prevent the possibility of rats burrowing under the guard. Rat-catchers were then sent into this inclosure to destroy all rats, and thereby prevent the infection being spread.

He also spoke of the value of vaccination against plague, citing as an example, that in Formosa, out of 10,176 vaccinated against plague, only seven were attacked, while out of 40,000 who were untreated, more than 500 were infected. For the treatment of those actually stricken with the disease, he stated two methods had been recommended; one, the extirpation of the bubos, and the other, inoculation with plague serum; that the efficicacy of the extirpation and serum treatment depends upon the stage of the disease; that if seen early, favorable results might be expected, but when the disease was more advanced, either method was practically worthless.

Returning to the destruction of rats, he said the question seemed almost hopeless; that in Tokio, 4,800,000 rats had been destroyed, still no decrease in the number was noticeable. He said it had been suggested that *Mus decumanus* was not likely to contract plague, and that it was the bitter enemy of *Mus rattus*, which was very likely to contract plague, and that it was hoped that the decumanus would soon kill off the *rattus*, but such a suggestion seemed to him impracticable, because from actual observation he had noted that the two species interbreed and that the offspring readily contracted plague. He stated that in the winter the rat remained in the ground, but in the summer it lived in the roofs of houses, and this probably accounted for the greater danger of infection in winter than in summer.

In conclusion, he stated that the danger of the introduction of plague in the open ports must increase in the proportion that international commerce progresses; that unfortunately, wherever man fixed his abode the rat usually followed him. The best hope of successfully dealing with plague seemed to him to lie in the calling of an international congress, at which the delegates could pledge substantial monetary support to combat plague in its great epidemic centers, namely, southern China and India; in other words, that a great international army should go forth to fight plague in these countries, and after it was once eliminated there, the disease could be readily eradicated in the remainder of the world, and that plague would then disappear from the face of the earth. He hoped that President Roosevelt, of the United States, would take the initiative in this matter.

The next paper was "Etiology and Pathology of Beriberi," by Dr. Maximilian Herzog, Pathologist of the Bureau of Science. He stated that his paper was not entirely ready for publication, and he would confine himself only to a brief résumé. For that reason no extract of same will be given here.

The last paper read at the congress was that of Dr. R. P. Strong, entitled "A Consideration of Some of Bail's Recent Views in Connection with the Study of Immunity, and a Comparison of the Value of Protective Inoculation with 'Aggressin' with that of Vaccination in Plague." Bail was of the opinion that through the process of bacteriolysis, the non-infective power of an animal might be explained, but he pointed out that the germ-killing properties of the body fluids are primarily worthless for the explanation of the actual process of immunity. In support of this view he called attention to the fact that the rabbit, whose blood serum usually possesses a powerful antagonistic action against the anthrax bacillus, is susceptible to the disease anthrax, while the fowl, whose blood shows the opposite properties, is insusceptible. In short, he stated that bacteriolysis is fallacious in its relation to immunity.

He then took the consideration of aggressins. Krusé first designated these substances lysins, but owing to the fact that this term came to be employed in a different sense, he more recently has proposed the name of aggressins. These aggressins, he believed, are formed by bacteria only in the animal body, and are to be particularly encountered in pathological fluids, such as edemas and exudates, which result from the inoculation of the different microorganisms.

In conclusion, he emphasized that the action of aggressins cannot be explained on the assumption that they are anti-complements or anti-immune bodies, soluble in bacterial fluids, free repositors, etc.; that they must be considered as new substances, which have heretofore been unrecognized, and which are formed by bacteria during infection in the living organism. Dr. Strong stated that the only reasonably sure method of immunizing guinea pigs against plague infection was by inoculation by living attenuated plague bacilli. He stated that he had reported in detail on this method in the second number of the *Philippine Journal of Science*. He stated that the method of vaccination with living organisms was not ideal, because, in order to thoroughly immunize 90 per cent. of the animals, it was necessary to use cultures of such virulence that some of the animals succumbed to the effects of the vaccination itself; that is, to true plague infection. He stated that in his last series of inoculations with aggressins, comprising fifty-three animals, none of the guinea pigs and only 25 per cent. of the monkeys proved on subsequent inoculation with virulent plague bacilli to be immune; so that the results in immunization with this extract of the plague bacillus are not nearly as good as those obtained with the living plague organism which are sufficiently attenuated to be used for human inoculations. Dr. Strong concluded that immunization with the attenuated living plague bacillus must be acknowledged as superior to that of inoculation with extracts, similar to or like aggressins.

OUR LONDON LETTER.

(From Our Special Correspondent.)

THE KING'S HOSPITAL FUND, ANNUAL MEETING—SATURDAY FUND—R. C. P. SIR D. POWELL, PRESIDENT—STREPTOTHRIX INFECTION—PLAGUE IMMUNITY—MEDITERRANEAN FEVER—SPREAD OF CONSUMPTION—THE "RAGGING CASE"—UNIVERSITY OF EDINBURGH—SIR W. CROOKES.

London, April 14, 1906.

The annual meeting of the King's Hospital Fund was held on Saturday, the Duke of Fife, acting president in the absence of the Prince of Wales, presiding. Lord Rothschild, hon. treasurer, reported that the fund received in 1905 the sum of £361,068, of which £237,206 goes to capital. His Lordship thought it satisfactory that the normal receipts might be taken as £123,862, exceeding the expenditure by some £20,000, another satisfactory feature being that the total cost of carrying on the work does not amount to ¾ per cent. on the sum collected. The balance sheet shows a capital sum of nearly a million sterling.

The Duke of Fife in his speech held that the fund has done a great work in the nine years of its existence, having in that time created a greater interest in hospitals, improved their organization, and raised a very large sum of money. But he found one thing which nothing seems to overcome—the apathy of Londoners with regard to their hospitals, the needs and necessities of which have grown enormously in the last twenty years, and if it was not for doubtful finance, sensational appeals, and every form of begging, many would have to close their doors. There must be many, the Duke thought, who could afford to give their guineas but who did nothing, and sooner or later the whole question of maintaining these institutions must be faced. After all, they are not charities in the ordinary sense, but necessities of our civilization. The Duke then read a long letter from the Prince of Wales, passing the whole work in review and displaying the greatest interest in it.

In the General Council's report the subject of contributions to medical schools is referred to, and they see no objection to subscribers to hospitals earmarking their contributions to one fund or another, that being the donor's concern only. The report of the auditor appointed by the Prince to inquire into the uniformity of hospital accounts has been received, and steps are now being taken to bring it before the Sunday and Saturday funds, so that any changes made may meet the views of all concerned. With regard to schemes carried on for profit which offer a commission for the use of the fund's name, the council very properly declines to be exploited and cannot sanction the use of its name for raising money in any form other than direct contributions to the fund itself.

The Hospital Saturday's annual meeting was held on Saturday last. The report, which was adopted, showed an increase in the receipts from workshops and business houses of £1,586, bringing the total to £25,930, the highest in the history of the fund. The expenses amounted to 9.49 per cent. of the receipts. The sum of £500 has been voted toward the establishment of a sanatorium for workers suf-

fering from tuberculosis and for which a site has been secured.

On Monday Sir R. Douglas Powell, Bart., was re-elected president of the Royal College of Physicians for the ensuing year. In the usual annual address he had passed in review the chief collegiate events and referred specially to the course adopted in connection with examinations to be held in tropical medicine, which had received the approval of the Colonial office. The president included brief obituary notices of the Fellows who had died during the year, notes about whom I have sent you at the time of these occurrences. The president announced that he had nominated Dr. W. B. Headley of Melbourne to represent the College at the opening of the public library of Victoria and the fiftieth anniversary of the University of Melbourne. He had also appointed Sir G. H. Philipson to represent the College Royal Sanitary Institute's Congress at Bristol

Streptothrix infection was the subject of a paper by Mr. Foulerton at the Pathological Society, on April 3. Last year he recorded thirty-three cases, and now he adds six others. Of the thirty-nine, one affected the conjunctiva, twenty-one the tissues of the mouth, seven the lung, nine the intestinal tract, five of these last being appendicitis and four right iliac abscess, probably appendical. One case was renal. Out of the thirty-nine patients four were of the unoccupied class, and in seven others the occupation was not ascertained, but of the remaining twenty-eight their occupation was more or less connected with liability to infection from the natural habitat of several species of streptothrix. Stablemen, coachmen, and others connected with grain and grasses, and others whose history suggested herbage as the source of infection, formed a large proportion. Indirect connection of the kind was noticed—thus a cellarman lived in a mews, a woman had spent the summer in the country and had been in the habit of chewing ears of barley and oats, and a young man who had spent some weeks on a farm was one of the lung cases. The presence of the parasite was proved in all the thirty-nine cases. Attempts at obtaining cultures were made in thirty cases, thirteen of these failing completely, four giving a scanty growth in broth only, and thirteen furnishing pure cultures on various media, so that the species could be identified. Two previously described were *Streptothrix luteola* and *S. hominis I;* the former Mr. Foulerton isolated from a case of conjunctivitis and an alveolar abscess; the latter from two pulmonary cases, two abscesses of the jaw, and a tonsil case spreading to the tissues of the neck. This *S. hominis I* is a slow-growing organism, somewhat resembling *Bacillus tuberculosis*, a somewhat similar organism to be distinguished as *S. hominis II;* it grows more freely and differs in pathogenicity for animals. He isolated it from an abscess of the tongue. Two other specis, *S. hominis III* and *IV*, are distinct species of the type met in cattle. *III* was found in the case of renal streptothricosis, *IV* from appendicitis and right iliac abscess.

At the same meeting Captain Douglas, I. M. S., described his experiments as to immunity against *Bacillus pestis*. These completely contradict the conclusion of the German Commission, that the immunizing substance is contained in the sediment only of the plague vaccine and that the clear supernatant fluid is practically inert. Out of three vaccines Captain Douglas found that in two there was more in the filtrate than in the sediment, and in the third the amount was about equal. He showed further that the sediment is made up of many variable constituents, consequently in any attempt to standardize by the weight of the sediment, every precaution would have to be taken to have everything, including media culture, the temperature and sterilization, as parallel as possible. From numerous experiments it appeared that an efficient vaccine could be prepared from cultures so non-virulent that the growth from three Agar tubes failed to kill a rat when inoculated subcutaneously. The dosage will have to be studied by numerous observations on the opsonic power of the blood. One-fifth the dose which has been recommended was taken by two normal men and followed by severe symptoms lasting almost a week in Captain Douglas's own case. The opsonic power rose steadily to its maximum of three times the normal on the 9th day, and rapidly fell again to normal on the 12th day.

Staff Surgeon Reid, R. N., communicated observations on therapeutic inoculations in Mediterranean fever. The dose of the vaccine, he said, could be regulated by the opsonic power of the blood; the temperature was raised in the negative phase which never lasted more than forty-eight hours. In nine cases a fall of temperature was the chief benefit; in four there was also decrease of pain. A gain in weight of about one-half a pound a day was common. One patient gained thirty pounds in a little over a month. The inoculations were also prophylactic and the health of the troops might be greatly improved by its employment for this purpose.

Dr. Wynter Blyth yesterday issued a report on the spread of phthisis, in which he says a health society has been formed in his Borough, Marylebone, to cooperate with the local sanitary authorities in preventing the spread of the disease and diminishing infantile mortality, etc. As to consumption, he remarks that "no age is exempt. The infant at the breast and the octogenarian alike are often infected by the minute parasite; but the special age favoring its development is that of the working period of life, which renders the prevention of the malady so important from every point of view—humanitarian, social, national." He gives an example of seven persons, living in two rooms, one consumptive, and points out the liability of one or more of the others becoming affected. The new society will keep this family under sympathetic supervision.

In the court martial held last week to inquire into the so-called "ragging case" in the Scots' guards, it transpired that the medical officer of the regiment had reported that the officer "ragged" was in a dirty state and had scabies. The commanding officer was greatly shocked at such a "horrible disease" invading his command, and evidently gave a free hand if he did not instigate the cruelty of the subalterns, whose victim, however, desired to give no evidence against his brother officers. The surgeon who made this report about a patient to his commanding officer and left him in such a state of "horror" about a disease he might himself easily contract, owes some explanation to his profession of the course he adopted, especially as his evidence was repudiated by other army surgeons.

Yesterday the University of Edinburgh conferred honorary degrees in several faculties. Professor W. M. Ramsay was made a D.D., the first layman admitted to the roll of honorary graduates in divinity, and this in recognition of the "invaluable services he has rendered to the elucidation of the literature of the New Testament." The LL.D. was conferred on nine persons, including Prof. A. G. Bell, inventor of the first articulating telephone; Prof. Thane, of University College, London, of whom the dean said no one had a more extensive knowledge of anatomical science; Miss Stevenson, a strenuous advocate of the admission of women to university privileges; Dr. E. von Bergmann of Berlin.

Sir Wm. and Lady Crookes kept their golden wedding day on Tuesday and received the congratulations of most of the scientific world.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

A NEW BLOOD TEST—MULTIPLE INJURIES OF THE SKULL AND BRAIN—TUBERCULOUS INFECTION THROUGH THE PLACENTA—A CASE OF MICROGRAPHIA—A CANINE CRETIN.

VIENNA, March 30, 1906.

DR. HOLLANDER HUGO has described a new method of applying the test for the presence of blood with peroxide of hydrogen and guaiac. Hugo states that used according to his method the test surpasses all others in delicacy. If a specimen of urine is to be tested the reaction is carried out as follows: A test tube is one-fourth filled with warm, acidulated urine, then a drop of official tincture of guaiac is added and the precipitate of resin which results is dissolved by the addition of strong alcohol. One or two, or at the most, three, drops of 15 per cent. H_2O_2 solution are then added. If blood is present the usual blue color appears either at once or after several seconds; in order to hasten its appearance the fluid may be gently warmed. In cases in which blood is to be sought for in the urine one should first ascertain whether iodine or bromine is present. The following is a simple reaction for iodine: Ten or fifteen c.c. of urine are mixed with half the volume of concentrated hydrochloric acid, a little chloroform, and a drop or two of 15 per cent. H_2O_2 solution. If iodine salts are present pure iodine is at once set free and gives a cherry-red color to the chloroform. Indican may be tested for in the same way.

A remarkable case of multiple injuries of the skull with extensive destruction of the brain was reported to the Society of Hospital Physicians by Dr. Milko. The patient was a man of sixty-two years, who received several blows with a hatchet on his head three days before entering the hospital. He was treated at home during this time by having his head bound up with rags. The whole skull was found covered with a crust consisting of blood, hair, and dried brain tissue. Bloody brain tissue was oozing from one of the wounds. Two wounds, each about seven cm. long, were present, one on the right side of the frontal bone, and the other over the parietal bone. On cutting through the bridge of skin between the two it was discovered that these bones had been crushed in and broken into splinters for a distance of

fourteen cm. The two plates of bone could be drawn apart and in this way a considerable extent of the cranial cavity could be inspected. It was seen that the cerebral substance for an extent twice as large as the palm of the hand had been demolished and converted into a dirty gray yellow mass. The brain injury extended over nearly all the right frontal lobe, the anterior portion of the right parietal lobe, and even partially involved the corresponding lobes on the left side. The fragmented edges of bone were chiseled off and as much as possible of the damaged brain tissue was removed. After the operation the temperature was 38.5° C. For the first days the patient was stuporous, and then he was restless for several days, but he was never wholly unconscious, and excepting slight paralysis of the facial nerve, no palsies were produced. During the first days there was involuntary defecation and micturition. Under the ordinary methods of wound treatment the injuries healed completely. The case is particularly interesting through the facts that the man recovered from such extensive destruction of the brain and the bone, that no paralysis was noted, and that no infection occurred in spite of the neglect during the first few days after the injury.

Dr. Geza Kiralyfi has reported an interesting instance of placental tuberculous infection which throws light on the question of intrauterine infections in this disease. A woman thirty-two years old, in the seventh month of pregnancy, was brought to the hospital for severe illness. It was found that she was suffering from advanced tuberculosis, and seven days later she aborted. The child was born living, but died an hour after birth, and the mother survived only twenty-four hours, so that both bodies came to the autopsy room together. In the adult body there was found extensive chronic tuberculosis of both lungs, with cheesy bronchial and peribronchial lymph glands. The body of the infant showed no traces of the disease, either externally or in the internal organs. It was therefore decided to attempt to detect the presence of tubercle bacilli by inoculations. These gave positive results, and it was found that tubercle bacilli were present in the liver of the infant. The question of the manner in which such intrauterine infections take place is a difficult one, some observers believing that in these cases the placenta is the portal of entry, whereas others assume a germinal transmission. In the present case it was plainly shown that the tubercle bacilli had traveled from the maternal circulation through the placenta into the body of the fetus. They passed through the umbilical vein into the hepatic vein of the fetus and formed infarcts in the capillaries of the liver, causing the blood of this organ to be infected. The case therefore corroborates the view that tubercle bacilli may enter the fetal body through the placenta, from the mother's blood.

A case of micrographia has been described by Dr. Bleier. The patient was a man of nervous disposition, with a negative family history, who denied syphilis, but admitted excessive alcoholism. He had always suffered from an ungovernable temper, but of late years had become still more morose, quarrelsome, and bad-humored. Noticeable changes had also been observed in the course of the last few years in the patient's gait, speech, and especially in his handwriting. The gait became uncertain and staggering, so that the patient could walk only with very small rapid steps, swaying to and fro, and with the feeling of being pushed forward. This infirmity was especially pronounced in rising from the sitting posture or in standing still, and on several occasions he had fallen down under these conditions, usually on the back. Two years ago he fractured the neck of his right femur as the result of such an accident. The patient's speech was very low, monotonous, and rapid. When irritated these peculiarities became accentuated, although the monotony persisted. The last words of a sentence were repeated several times. The most pronounced change was exhibited in the patient's handwriting, however, on account of which he had been obliged to give up his position of bookkeeper. The handwriting was extremely small; at first the separate letters could be distinguished but toward the end of a sentence they became an illegible scrawl. The rigid attitude and fixed facial expression without any change of countenance were especially remarkable. Arteriosclerosis, Gräfe's symptom, a slight difference in the size of the pupils, which reacted to light, tremor of the fingers, and restriction of vision upward were other symptoms present.

Prof. von Wagner exhibited a dog with cretinism before the Medical Association. The dog came from Steiermark and showed unmistakable evidences of the disease, such as apathy, slow, clumsy movements, thick, short skull and legs, and abnormal development of the soft parts, especially in the face. The examination of the hearing undertaken by Dr. Alexander also gave results characteristic of cretinism. High tones were not perceived by the dog, although he responded with his customary aimless movements to deep and medium tones, indicating a lesion of the internal ear. Wagner expects to obtain interesting information from the autopsy of this dog, and hopes to make use of it in the course of his well-known studies on human cretinism.

MEDICAL SUPERINTENDENTS OF HOSPITALS.

To the Editor of the Medical Record:

Sir:—That was an interesting enumeration of opportunities for recent graduates in medicine that appeared in the Medical Record on Saturday last. But the field was not fully covered; and one omission is all the more striking because the writer of the article in question evidently is alive to the extent to which the practice of medicine, preventive as well as curative, has now become organized in a thousand and one institutions, state supported as well as privately conducted. I refer to his failure to perceive that there is an excellent opening in hospitals for young medical men of executive ability; and yet hospitals all over the country are seeking distractedly for men fitted by taste, talent, and training to become hospital superintendents.

The careers and occupations referred to by your contributor will prove more or less attractive to struggling young medical graduates, according to their needs and temperaments. It is frankly conceded, however, that most of the "opportunities" named are mere rent-payers and pot-boilers; whereas hospital superintendency, or the broader field of administrative medicine, is a field full of promise of honor as well as of profit. Shall I defend the contention that the inspection of hospitals is quite as interesting, fully as profitable, no less dignified, than the visiting of tenements, prisons, slaughterhouses, schools, or dairies? Surely it is not necessary to do so.

Medical men, let me repeat, are needed in hospital administration. Recent graduates can readily find openings in New York, Boston, Philadelphia, Baltimore, etc., as assistant executive officers in the great public and private hospitals. Having supplemented their theoretical knowledge by practical experience, they can step easily into positions as hospital managers. The medical college which first recognizes this situation, and through a chair of hospital economics or administrative medicine starts, each year, a wisely selected few of its graduates on successful hospital careers, will do much to extend its own influence, to promote sympathy between hospitals and medical schools, and to inaugurate an era of scientific hospital control and development.

S. S. Goldwater, M.D.

The Mount Sinai Hospital,
New York City.

Progress of Medical Science.

Boston Medical and Surgical Journal, April 26, 1906.

Some Influence in Favor of Better Milk.—Four factors bearing in favor of improvement of the milk supply are, according to R. A. Pearson, laws and ordinances, public demand, milk commissions, and well-conducted dairies. The great drawback is the unwillingness of the majority of people to pay even a small advance for improvement in the quality of their milk. The dairyman is like the manufacturer in that he will not willingly increase the cost of placing his product on the market so long as he can receive no more for it. Dairying on modern conditions requires considerable capital, hard work, and a high grade of intelligence. It is a battle with bacteria, calling for the utmost care at every step.

Jacksonian Epilepsy.—C. K. Mills discusses this condition in a long and exhaustive article, certain salient points of which only can be referred to here. In many instances Jacksonian spasm has been an important or deciding symptom in successfully fixing the site for operation in the case of a cerebral tumor. Several such cases are summarized. The author has had a number of cases of cyst of the motor region, in some of which unilateral convulsions or monopasms have been present, these being evidently due to the unstable condition of the cortex surrounding the cyst. It has been possible to expose the cyst, cut away its roof and so lessen the frequency and severity of the attack. Several clinical histories are given, illustrating the importance of Jacksonian spasm in gross lesions of the cortex, especially in tumor and localized meningitis. In these cases a few features would seem to point with

comparative certainty to gross lesion. In these and in a large number of similar cases, other evidences of gross lesion in addition to the spasm were present. They were chiefly monoplegia or hemiparesis with exaggerated reflexes on the side of the body in which the localized spasm occurred. In unraveling the symptomatology of this general class of cases, the diagnostician must bear in mind (1) that tumors situated in other parts of the brain than the motor cortex may cause Jacksonian epilepsy; (2) that other lesions besides tumors situated in the motor cortex may cause this form of spasm; (3) that it may occur in toxic and other disease in which no demonstrable focal lesions are present; (4) that a spasm closely counterparting the Jacksonian type may be observed as a reflex or a hysterical disorder; and (5) that Jacksonian epilepsy may be simply an integral part of the entire expression of a case of idiopathic epilepsy. In some instances Jacksonian epilepsy apparently of the usual motor area type is observed in tumors of the cerebello-pontile angle or of the cerebellum. The gross lesions of the motor area which cause monopasm or hemispasm counterparting that produced by tumors are depressed fracture, localized meningitis, meningeal or cortical hemorrhage, local hemorrhagic encephalitis or cortical polioencephalitis and focal necrosis or embolism including cases associated with generalized arteriosclerosis.

New York Medical Journal, April 21, 1906.

The Bile Acids as a Remedy.—A. C. Croftan declares that the bile acids may be properly employed in (1) intestinal putrefaction, (2) hepatic insufficiency, and (3) gallstone disease. In (1) they check the development of putrefactive intestinal parasites by direct contact and are powerful cholagogues, hastening peristalsis, aiding in the emulsifying of the fats, promoting their absorption, and preventing the formation of poisonous acid by-products. In (2) the stagnation of the bile is prevented, pressure on the hepatic cells through the biliary channels is removed, and the cells perform their functions more freely. In (3), while the bile acids cannot dissolve a calculus already formed, they may aid in preventing further formation. Of the two acids glycocholic is the cheaper and should be administered in the form of the sodium salt. The author has been in the habit of giving half-grain doses at frequent intervals until the proper effect is produced. Aside from chemical results we have three chemical evidences that enough is being given: (1) the disappearance of sulphides from the stools, (2) the disappearance from, or great reduction of, indican in the urine, and (3) the appearance of the bile acids in the urine. Some simple chemical tests easily applicable by any physician are given for the determination of the three points just enumerated.

Brow Ague: Frontal Sinus Congestion with Periodical Headache.—Three clinical histories are summarized by F. Woodbury. In all, the pain was increased if the patient bent forward as in picking anything up from the floor, and on introducing the nasal speculum congestion and swelling of the middle turbinal mucosa were noted. Presumably, says the author, the same condition extended into the accessory sinuses, and probably blocked the outlet from the frontal cavities and ethmoid cells. Tapping with the finger end over the superciliary ridge, on each side, increased the painful sensations. There was no external swelling or redness; and apparently no active catarrhal condition. The general condition was first class in all the cases, with no evidences of any cachexia or toxemia. The author believes that in this class of cases some vasomotor factor is the fundamental disturbance. The nasal mucosa alteration may be due to malaria or to influenza. He gave speedy relief to his patient by applying cocaine and adrenalin followed by injections of moist hot air and alkaline fluids into the superior meatus. A saline cathartic was ordered, followed by small doses of quinine, camphor monobromate, and acetanilid. Small hypodermics of morphine were given when the case seemed complicated with neuralgia. Later the usual nerve tonics were employed.

The Association of Adenoids and Deafness in Young Children.—P. D. Kerrison believes that many cases of chronic catarrhal otitis media in adults have their origin in diseased conditions incident to child life and that chronic deafness, even in young children, is far more common than is generally supposed. In the examination of the latter class of patients we generally find retraction of the drum membrane, which may be considerably congested. If this condition is bilateral we can predicate nasopharyngeal obstruction. The congestion is not confined to the periphery and region of the handle of the malleus as in adults with tubotympanic congestion, but is more extensive, generally affecting the greater part of the membrana tensa. The author gives the detailed findings in fifty children. This class of patients is frequently neglected and they do not come under the otologist's care until a chronic lesion is present. The nasopharyngeal obstruction should be promptly removed, and a month later the hearing should be again tested. If the membrane is still retracted or congested, inflation by the Politzer method or by catheter, if the age and temperament of the patient will permit, often aids in establishing the results for which the operation was undertaken. Patent Eustachian tubes, improved hearing, and restoration of the drum membranes to a more nearly normal condition should be regarded as among the tests of a successful result.

Journal of the American Medical Association, April 28, 1906.

The Parasitism of the Tubercle Bacillus.—Theobald Smith finds from his studies on cattle that there are three main portals of entry of the tubercle bacillus into the system, the upper air passages, the lungs, and the small intestines. Infection by other routes, such as the skin, is very exceptional. The lodgment in the lymph nodes is accomplished without any apparent lesion whatever, and the nodes act as temporary barriers to the progress of the infection. The tendency is to the formation of a quiescent focus—the tubercle. There is probably some element in the blood that, together with the stimulating influence of the bacilli, provokes the protective cell proliferation. The bacilli, when set free from a discharging focus, are provided with an inert protective envelope, which is destroyed by the normal tissue fluids. When this happens they are able to multiply, but this multiplication stimulates cell proliferation, and, according to the activity of this process, multiplication is checked. The bacilli are destroyed in part; the rest, through the protecting influence of caseation, remain latent, provide themselves with the protective envelope, and if discharged outward are able to infect another individual. The question of the possibility of producing a specific artificial immunity toward the tubercle bacilli is discussed at length by Smith, who thinks the best results in protective inoculation will be obtained with the use of bacilli killed at a low temperature and from fresh cultures, which can be made at any hospital or sanatorium. These can be injected locally, each injection forming a new radiating focus of immunity, and the fresh culture insuring a more effective preparation. The tendency of infectious diseases, he holds, is toward a balanced parasitism, with reduced mortality, but not necessarily a reduced morbidity. This is due to selective adaptation of both the host and parasite, and this selection will, he believes, go much farther, and we may yet have a type of tubercle bacilli producing only a bronchitis. There are already some indications of this. The effect of a possible immunization of the human race is open to question. Immunization, Smith says, would be an admission that the germ has come to stay, and merely increasing our resistance to the prevailing type would lead eventually to the selective production of more virulent types and a slackening of the usual preventive measures that might eventually cause disastrous effects from the newly-developed more virulent organisms.

Formic Acid.—H. Stern says that formic acid in ten-drop doses has a mild diaphoretic and diuretic effect; this is still more pronounced with twenty-drop doses, and is accompanied with contracting sensations in the pyloric region when the stomach is empty. In large doses (from 3 to 4 c.c., well diluted) on an empty stomach, it causes dryness of the throat, tinnitus, slight vertigo, gastric burning, sometimes mild pyloric spasms, lassitude, slight motor disturbances, and elevation of temperature of from one-half to two degrees, followed in from half an hour to one hour by marked prespiration and diuresis. In doses of from 0.5 to 1 c.c. three times a day for some weeks it acts as a muscular excitant in some instances. No fatal case of formic acid poisoning is on record. The therapeutic uses of formic acid are manifold, but it has been used chiefly as an epispastic. Internally, Stern has used it with benefit in cancer, and thinks it has certainly delayed the fatal issue in a number of inoperable cases. He has often used it in toxicoses of supposedly intestinal origin, and believes it has a distinct antidotal value in these cases. Besides its pronounced antiseptic properties, it exerts a specific influence on the enteric secretion which is lacking in the formates. He has had splendid results with the drug in the secondary and tertiary stages of syphilis. He uses a special iodine-formic acid solution in these cases in gradually increasing doses, carrying

it up to even 3 c.c. of the solution three times daily, but so large a dose is hardly called for and might be injurious to the gastric lining. He thinks this solution especially adapted to the treatment of the nervous manifestations of syphilis. It has also proved the most valuable agent in his hands for what have been called the chronic ulcerative and chronic fibrous types of pulmonary tuberculosis.

Cancer in the United States.—Guthrie McConnell finds from an elaborate study of the statistics of the census of 1900 that while the death rate from consumption has very markedly decreased, that from pneumonia and cancer, especially the latter, has increased during the decade, the ratio of cancer increase being 12.1 per 100,000, and that this mortality is higher in the rural districts than in the cities. It is greater among foreign-born whites than among native whites, but the death rate from this cause is only apparently greater among the former here than in their native lands. Females are more subject to cancer than men, the respective percentages being 63.1 and 36.9. Persons employed in hard out-door labor seem more liable to the disease than those following sedentary occupations. Well-watered and timbered mountainous regions like the northwest coast, show the greatest mortality, and the figures do not support the view that cancer is more prevalent along rivers. No proof is afforded by the statistics of any direct connection between cancer mortality, a prevalence of German population, and beer drinking. Cancer mortality is highest after the sixty-fifth year of life, and after the forty-fourth year is greater among the unmarried of both sexes than the married. The general average at death from cancer is 58.1 years.

A New Protozoan Infection.—S. T. Darling reports a case of apparent miliary tuberculosis, in which, however, instead of tubercle bacilli, there were found vast numbers of a protozoan parasite resembling somewhat the Leishman-Donovan bodies, but differing markedly in certain particulars and in the lesions produced. The organism, when stained with carbol-fuchsin and methylene blue and washed with eosin, appeared as an oval or rounded body with a refractile, non-staining rim, and containing chromatin granules, averaging three microns in diameter and dividing by fission. Flagellated forms were also seen. In the lung smears the parasite was apparently always intracellular, and it seems generally to have a predilection for endothelial and epithelial cells. The lesions produced were scattered focal necroses of liver, spleen, and lymph nodes with foci of catarrhal pneumonia and hemorrhages in the lungs, in which the lungs play a very passive part, there being no leucocytic infiltration of the miliary pneumonic nodules. The infection was a fatal one, no other cause of death being found. For the parasite the designation *Histoplasma capsulata* is proposed by the discoverer.

Misleading Symptoms in Cerebral Disease.—J. A. Stucky reports a case of sarcoma involving the whole right temporo-sphenoidal lobe, associated with and infected by chronic suppurative ethmoiditis, and asks which was the primary lesion. No macroscopic evidence existed of disease elsewhere in the brain. The local symptoms, pain and bulging of the orbit, pointed to trouble in the right fronto-orbital region, but there was aphasia (the patient was right handed), spasm of the right arm and hand, and the tongue deviated to the right. The author asks: Could general intracranial pressure exist without motor symptoms referable to right-sided pressure and also what would have been the result had the sinus disease been eradicated months before?

The Lancet, April 14, 1906.

Some Points in the Treatment of Chronic Bright's Disease.—According to Samuel West, the conditions included under this term are therapeutically reducible to two: chronic parenchymatous inflammation or the later stage of acute nephritis and granular kidney. In the former, it is a mistake to keep the patient too long on an exclusive milk diet. Nutrition suffers and the tissues become flabby and soft. Alcohol and meat extracts should be avoided, also fruits and vegetables which are rich in irritating salts, *e. g.* tomatoes, asparagus, etc. Eggs are allowable. Red and white meats may both be used but should be boiled, not roasted. Fresh air must be allowed in abundance. In granular kidney the conditions are different. In the early stage the patients must live moderate, careful, and temperate lives, be properly clothed, avoid chills and exposure, keep their skin in good action, and the bowels regular. They must avoid alcohol, especially spirits, eschew dissipation of every kind, and live as much as possible in fresh air and sunlight. Even their recreations need not be seriously restricted, provided they are not such as to lead to risky exposure or fatigue. In the intermediate stage when the heart is markedly hypertrophied and the arteries are much thickened, the treatment has to be directed, in addition, to guarding against the accidents that are now specially liable to occur. These are chiefly failure of the heart, rupture of vessels, and inflammatory affections of the kidney itself. A hypertrophied heart has diminished reserves and therefore hypertrophy of the heart is rightly regarded as a pathological condition. It lacks the margin or reserve of power which the healthy heart possesses. Its reserves have been swallowed up in growth, so it is that a hypertrophied heart will give way under strain that would not affect a healthy heart at all. It is therefore especially necessary in this stage to avoid physical or mental strain and fatigue and to watch the heart very carefully. In the third stage, symptoms may be referable to almost any organ in the body, and the kidney may be overlooked. A patient with granular kidney ought to have an arterial tension above normal. If too low it may be raised by digitalis, adrenalin, or ergot and a more liberal diet. If too high, we may give the iodides and nitroglycerin. Caffeine, theobromine, and diuretin will increase the daily output of urine. The author uses pilocarpin freely and cannot understand the prejudice against it. He advances the idea that the kidney may have an internal secretion like the thyroid, though of this fact we have no proof. He says that the administration of renal substance or extracts is in the experimental stage. *A priori*, that treatment deserves serious trial. The results are so far inconclusive. For this there may be several reasons. Many of the cases come under notice too late for treatment of any kind whatever to do much good; the suitable cases would be those in the earlier stages. Then, again, stable renal extracts cannot as yet be prepared, and the extracts to be used must be made fresh as required. Many of the extracts have been made from the kidneys of sheep—that is, from those of vegetable feeders. It may be that the kidneys of omnivorous creatures like the pig would be more efficacious. Using such preparations as he could make or get made, he thinks he has had some good results.

The Influence of the Nervous System and External Temperature upon Certain Circulatory Changes Concerned in the Etiology of Catarrh, Ulcer, and Simple Dilatation of the Stomach, with Suggestions as to Treatment.—Alfred Mantle says that the gastric circulation may become disordered through the central nervous system by the irritation of food and by changes in external temperature, all of which factors may be combined in varying degree. The effect of excitement and worry on gastric functions is well known. Dietetic errors are chiefly manifested in the nerves. Grave circulatory disturbances are excited by gastric irritation. Collapse often ensues and patients are put in desperate straits. Gastric perforation has been simulated in some instances. Some patients with sensitive stomachs are greatly affected by changes in external temperature, being directly affected through vasomotor alterations in the general splanchnic area. When food is taken much blood is attracted to this region with a consequent lessening of the amount in the skin, so that a feeling of chilliness is not infrequently experienced after a full meal. Naturally this happens more often during the colder months. Similar splanchnic congestion follows from malaria and severe burns. Splanchnic statis may lead to hematemesis. In 26 patients with gastric ulcer operated on, 18 acknowledged that they had always had a poor peripheral circulation and had been very sensitive to cold, while 2 out of 6 patients, with duodenal ulcer made similar confession. As to treatment, the great measure is to supply external warmth to the cold parts and the wearing of the proper clothing. Moreover, we should examine the mouth for carious teeth or other sources of infection in all cases of gastric disorder, inasmuch, as already stated, any superficial ulceration of the stomach may become infected by organisms from the mouth and develop into deeper ulceration. It is equally important to treat anemia if present, for its existence will hinder any reparative process.

The Relationship Between Graves's Disease and Acute Rheumatism.—Several series of cases of Graves's disease reported by different authors are analyzed by W. E. Robinson. The pertinent fact running through the various groups is that the salicylates seemed to be of distinct therapeutic value. In some coincident point symptoms were strongly in evidence; in others the family histories suggested an etiological relationship. Out of 127 cases analyzed from Guy's Hospital Reports, 18.9 per cent. gave a definite history of acute rheuma-

tism, while in 9.45 per cent. there was a family but not a personal history of the same disease. The author does not believe that there is in the cases he has studied any evidence to support the toxin theory of Graves's disease. He purposes three questions as worthy of careful consideration by clinicians: (1) Is Graves's disease due to a rheumatic diathesis? (2) Is it due to a toxin or toxins produced by acute rheumatism? (3) Is it an alternative set of symptoms to the more usual articular lesions in acute rheumatism? In other words, is the hyperplasia of the thyroid gland a true rheumatic affection? And though one cannot at once hope for an answer yet it would seem to be a logical deduction from the cases he reports to treat a series of cases of Graves's disease in a routine way with sodium salicylate and compare results with those already published.

British Medical Journal, April 14, 1906.

Painless Labor.—Another case is reported by W. J. Young. He says that most practitioners are familiar with the "physiological anesthesia" in strong women at the height of their pains, but that this is very different from a "painless labor" in the strict sense of the term.

Angina Pectoris Without Apparent Disease of the Heart or Blood Vessels.—A case is reported by E. Curtin which seems to point to the possibility of blood pressure as a cause of anginoid seizures. His patient was a man of 59 years without antecedent history except dyspepsia of two years' duration. The attacks were typical in character, but no evidences of cardiac or vascular disease could be discovered. A diagnosis was made of a cancerous growth of the pancreas with a metastasis on the under surface of the left lobe of the liver. The author believes that the essential condition of the attack was an extreme contraction of the systemic arteries, and especially those of the splanchnic area, probably induced by involvement of the solar plexus in the cancerous growth, and consequent damming back of the blood on the left ventricle, which, owing to the attenuated condition of its walls, became suddenly stretched and perhaps dilated, and therefore unable to bear the stress on its increased superficial area.

Treatment of Tænia.—J. K. Fowler finds that the admission of tænia patients to hospitals gives much better results than does their treatment as out-patients. His method is as follows: (1) The patient is kept in bed. (2) For two or three, or in some cases four, days the patient is given a diet consisting of: Beef tea, 2 pints; Mason's essence, one tin; two rusks; and port wine, 4 oz. During the same period the patient takes tabloids of cascara sagrada (gr. ij) three times daily. (3) On the fourth day (usually) at 5 A. M. haustus sennae co. ℥j; at 9 A. M. a capsule containing ℞xv of the extract of male fern; at 9:15 ditto; at 9:30 ditto; at 9:45 ditto; at 11 A. M. haustus sennae co. ℥j. If by 1 P. M. the worm has not been passed and the head found, a second course of treatment with male fern at intervals of fifteen minutes is begun; to be followed in an hour by a purgative draught. If the head is not found a third course of treatment is prescribed.

Important Symptoms in Diseases of the Eye.—A. M. Ramsay considers this subject under the two headings of disorders of general sensibility and of the function of vision. Of the general symptoms, pain is the most common and the most important. The condition causing it may be inflammatory or non-inflammatory. In the latter circumstance it is often described as neuralgic and is aggravated by the use of the eyes. It may be present apart from such use, and then is mostly unilateral involving some portion of the fifth cranial nerve. Itching may be present, being caused by inflammation of the edges of the lids or by defective metabolism. Photophobia is another common symptom. In phlyctenular keratitis it is the most striking subjective feature. It may be present acutely in retinal asthenopia. In reaching a conclusion by the method of differential diagnosis, the accompaniments of the pain, photophobia, condition of the pupil, high tension, and tenderness on pressure are most helpful. As to disorders of visual function, it may be said that sudden loss of sight when bilateral is generally due to some toxic cause, most commonly by anemia. Embolism of the central artery of the retina destroys sight without a moment's warning; but in nearly every case one eye only is affected, and ophthalmoscopic examination leaves no room for doubt regarding the diagnosis. Again, sight may be completely lost immediately after a blow on the forehead; but in that case ophthalmoscopic examination reveals at first nothing abnormal, the reason being that the optic nerve has been injured through fracture of the bones at the optic foramen, and not till some weeks after the accident can atrophy of the optic disk be recognized. When the blindness is sudden, but incomplete, much information is obtained by testing the field of vision. A blank in a portion of the periphery is due in all likelihood to a detachment of the retina, or to an extensive hemorrhage into the vitreous; should the patient complain that all lights seem to be blood-red in color, the latter lesion is almost certain to exist. When there is a failure to recognize the various colors in the central portion of the visual field, the fault may be due to overindulgence in alcohol or tobacco. A patient may see well during the day but be practically blind after sunset. This symptom is almost pathognomonic of that form of retinal degeneration known as retinitis pigmentosa. Other disturbances may be referable to changes not in the eyeball but in the ocular nerves, optic tracts, and cortical visual centers. Syphilis is the chief cause of ocular paralysis.

Berliner klinische Wochenschrift, April 9, 1906.

A Case of Acute Bromine Rash in Exophthalmic Goiter.—Uhlich describes this case, which was that of a woman with pronounced exophthalmic goiter, for whom a bromine combination was prescribed. On the first day after beginning the remedy she developed an eruption, but as she did not recognize its origin the use of the drug was continued for a week. The rash began with small red spots which rapidly enlarged, itched, and finally developed into vesicles. In some instances these became confluent and the whole rash somewhat resembled the antipyrin exanthem. The eruption was most abundant on the backs of the hands, about the neck, and the eyebrows. Acute bromine eruptions are very rare, the usual skin lesions produced by the drug being the characteristic acne which follows its long continued administration. In this instance the patient's susceptibility was no doubt due to the extremely irritable nature of her skin, which rendered her an excellent subject for the demonstration of urticaria factitia.

Torsion of the Omentum in Incarcerated Inguinal Hernia.—Litthauer says that the case which he reports is the second instance of this kind described in the literature. The patient was a woman fifty-three years old who had suffered from an inguinal hernia for several years. She was brought into the hospital because of incarceration, and on opening the hernial tract a large mass of omentum was revealed which was in a loop so that no free end presented. As it was impossible to liberate any free extremity a laparotomy was done, and it was found that the omentum had been turned about its axis one hundred and eighty degrees three times not far from the transverse colon. Of the distal portion a considerable part formed the loop which had been found in the hernial sac, while the tip was very much swollen and congested, and had therefore formed an obstacle which had made it impossible to draw the free end down through the hernial ring. The patient made a good recovery, which was somewhat protracted, however, through a thrombosis of the left femoral vein.

Münchener medizinische Wochenschrift, April 10, 1906.

The Incision in Laparotomy.—Heusner says that the first consideration in the laparotomy incision is perfect asepsis with the avoidance of contact with irritating fluids, superfluous manipulation, or intraperitoneal bleeding. The incision should be no larger than necessary because with the increase in size there is greater danger of the formation of adhesions and of infection. The nerves of the muscles must be avoided, as otherwise relaxation and stretching of the affected region will follow. In order to secure as firm a scar as possible it is advisable to place the incision so that it shall pass through firm and resistant portions of the abdominal wall, preferably where several layers exist rather than through thin and weak regions. Finally, as Kocher has pointed out, the skin incision should, where possible, coincide with the skin fibers of Langers, as in this way there is less gaping of the wound and better cosmetic results are attained. He then reviews the advantages and disadvantages of the different incisions most in use, and finally states that he has himself in a number of instances made use of transverse incisions through the rectus muscles. These are made slightly curved upward or downward according as they are placed above or below the umbilicus. At the level of the umbilicus the incision is made horizontal. The author considers that the scars following this mode of operation are firmer than those obtained by incisions in the median line.

The Indications for Operation in Appendicitis.—Krecke is a warm adherent of the doctrine that early operation offers the best chance of cure in appendicitis,

but he believes that there is a certain small percentage of cases in which a single, very light attack is experienced without being followed by recurrences. Such attacks do not, of course, demand operation, but it is extremely difficult to distinguish them from the severer type. In making the differential diagnosis between these simple and severe forms, the necessity for which presents itself in every instance, abdominal rigidity furnishes the most valuable single sign. If there is no rigidity or other disquieting symptom the existence of the mild form of the disease may be assumed, but if there is any rigidity whatever it is an imperative indication for operation. The elevation of the pulse rate above 100 is usually a sign of destructive appendicitis and demands prompt operation, but a low pulse rate does not justify the assumption of a mild attack. The behavior of the temperature is not of great value in determining the variety of the disease. Increased rapidity of respiration and the appearance of the costal type of breathing are always unfavorable signs. A single unfavorable sign is of greater significance in estimating the gravity of the case than four favorable signs. Having made the diagnosis of destructive appendicitis the operation should be performed within the next two hours.

The Treatment of Inflammatory Conditions of the Skin with Hot Baths.—Richter, who has a very large accident practice among miners, states that he has for some years used a method of treatment for infected wounds, contusions, furuncles, etc., which while apparently old-fashioned in conception is yet in accord with the teachings of modern bacteriology and hemology. It consists in having the patient place the injured member several times a day in a bath of water as warm as it can be borne, in which it is kept for at least a half to one hour. In view of the doubtful cleanliness of the vessels often used for this purpose by the patients, the author usually directs that half a tablespoonful of soda be added to each liter of water. When the injury is situated in a region that cannot be immersed in a bath he applies wet compresses which are kept hot by means of hot water bottles. The results obtained by this method are excellent, and Richter ascribes its efficacy to the fact that marked local congestion is caused, as in Bier's method of hyperemia treatment, and that through the abundant supply of blood and lymph brought to the affected region the body is enabled to cope successfully with the infection.

Deutsche medizinische Wochenschrift, March 22 and April 12, 1906.

Asepsis in Operation Wounds.—Döderlein has carried out an extensive series of observations intended to determine the degree of asepsis attained in the course of operative work. For this purpose about five thousand bacteriological tests were made in the course of one hundred laparotomies, cultures being made from all of the instruments, fluids, hands, and other objects coming in contact with the wound, as well as from the interior of the wounds themselves. It was found that even when the most rigid precautions were used a considerable number of the cultures were positive, and it was finally concluded that the most important source of contamination was furnished by the skin of the patient. After considerable experimentation with various forms of coating for the skin Döderlein decided that the most practical and serviceable method was to paint the area to be operated upon with pure tincture of iodine, after which a solution of India rubber in ether and benzin was applied. As soon as dry a little sterilized talcum powder was rubbed over the surface in order to prevent stickiness, the superfluous powder being brushed off again. When operating in this way not only the bacteriological tests showed great improvement, but advantages from the clinical standpoint, such as a lessened tendency to postoperative intestinal disturbances, were also noticed. The author warmly commends to all operators the practice of from time to time making systematic bacteriological tests of all the elements that can possibly enter into the question of wound contamination.

Local Anesthesia in the Surgery of the Internal Ear.—Neumann says that the prevalent belief that operations on the internal ear cannot satisfactorily be carried out under local anesthesia is erroneous, and describes his method for producing a painless operative field. The point of the injecting needle is inserted into the upper wall of the cartilaginous portion of the meatus about .5 to 1 cm. from the beginning of the bony canal. This point is determined by the fact that on moving the external ear back and forth a sharp fold appears at the junction of the movable cartilaginous portion of the meatus with the fixed portion of the canal. The needle is carried obliquely upward to the bony surface and the anesthetic solution, warmed to forty-five degrees C., is injected under the periosteum. The procedure is almost painless, but if necessary may be carried out under ethyl chloride anesthesia. In order to anesthetize the mastoid process for operations in this region the needle is carried vertically down the bone, is then inclined obliquely, and 3 to 4 c.c. of the fluid solution, warmed to 50° C., are injected. If a radical operation is to be done these methods of anesthesia are combined. The author prefers a solution of cocaine with the addition of some one of the adrenal preparations, to all the other local anesthetics.

Surgical Treatment of Sciatica.—Pers believes that the surgical treatment of this disease might with advantage be resorted to more frequently than is usually done. He does not consider the old operation of stretching the nerve as the proper one, however, and ascribes the disfavor into which the procedure has fallen to the bad effects produced by this method of operating. In two cases of severe sciatica that he was called upon to treat, a permanent cure was effected after all the ordinary remedies had been used without avail, by exposing a very considerable portion of the nerve and removing from its surface with forceps and gauze the fine network of pink connective tissue strands which surrounded it. These the author regards as the results of a perineuritis attending the neuritis, and he suggests that in obstinate cases the affected portion of the nerve be freed from these adhesions through an incision which must be made long enough to extend to the point where the nerve begins to be normal in appearance again.

Premenstrual Elevations of Temperature.—Riebold made careful observations in this respect on a series of 2,000 patients who were under hospital treatment on an average for thirty days. Only such instances were included in the figures in which there was an elevation of temperature of at least .5° C. on one of the three days preceding the period or on the first day of the period, without there being any discoverable reason for the fever. The temperatures of the patients were taken for at least six days previous to this premenstrual period, and the maximum temperature of this time was taken as the basis for estimating the elevation. Eighty-five cases were discovered in which premenstrual fever of this sort was noted. Most of the patients were phthisical, but a considerable number suffered from other affections. The author considers that such fever is never observed in entirely healthy women, and that when it does occur it indicates an irritation of some already existing, possibly latent, disease focus. It is the result of the stimulation of the vital processes in general, which is the normal concomitant of ovulation. While healthy women do not manifest any heightened susceptibility to disease during the premenstrual period, an already diseased organism is in greater jeopardy than usual at this time. The cessation of a previously existing tendency to premenstrual fever is to be regarded as a favorable prognostic omen in pulmonary tuberculosis, whereas it is a distinctly adverse sign if the symptom appears in any severity in the course of tuberculous disease.

A New Test for Santonin in the Urine.—Neuhaus suggests the following test: Several drops of Fehling's solution are added to a few c.c. of the urine in question. If santonin is present a dark green color appears, which changes to dark violet-red on addition of more of the reagent. If an acid is added, the color changes to light green. Acetic acid is the most suitable for the purpose. The reaction can always be obtained in the urine of children that have taken the ordinary doses of santonin, but in the case of adults the amount of the drug ingested must have been somewhat larger, corresponding to the greater body weight. No other drugs appear to give rise to this reaction, with the exception of rhubarb, which produces a dirty green color, but does not pass through the preliminary violet-red stage. The commonly used test for santonin in the urine, which consists in the production of a red color on the addition of caustic alkali, is more sensitive than the reaction with Fehling's solution.

Potassium Permanganate as a Hemostatic.—Vörner recommends potassium permanganate as a hemostatic of exceptional efficiency. He uses it in a strong solution, in a powder (50 per cent.), or in a paste with vaseline (1 to 3). It is most useful in hemorrhage following minor operations, excision of small tumors, or in epistaxis. Usually one application will control the hemorrhage. There is little irritation attending its application, it does not destroy the tissues, and its antiseptic properties make it especially valuable.—*Clinical Review.*

Book Reviews.

Manuale delle Malattie dei Bambini. Di John Madison Taylor, A.M., M.D., Professore delle Malattie dei bambini presso il Policlinico di Philadelphia, ecc., e William H. Wells, M.D., Professore aggiunto di Ostetricia e malattie dell' infanzia nel Policlinico di Philadelphia, ecc. Traduzione Italiana sulla seconda edizione, interamente riveduta ed ampliata. Per il Dr. Mario Flamini, Assistente nella Clinica Pediatrica e negli Ospedali di Roma. Con Prefazione del Prof. Luigi Concetti, Direttore della Clinica Pediatrica di Roma. Con Note ed Aggiunte del Prof. Francesco Valagussa, Aiuto e Docente nella Clinica Pediatrica della R. Università di Roma.

The translation of another American textbook into Italian is but a sign of the constant advance of American medicine and surgery, and the inevitable recognition of this advance abroad. In this review it is not our purpose to offer a criticism of the now standard work of Taylor and Wells, but rather to give a brief account of the Italian version of the book which lies before us. The Italians as a rule read medical French fluently enough, so that the works of Comby and other pediatrists are accessible to them. The German treatises, those of Gerhardt—now out of date—Henoch, Baginsky, etc., have appeared in excellent Italian translations. "English and American pediatric literature," to quote from Professor Concetti's introduction to this present volume, "is rich in excellent treatises from the pen of masters of his branch who are the products of the model hospitals so munificently provided by private charity in the Anglo-Saxon countries." The classical lectures of West, the treatise of Ashby and Wright—both known to students of the generation just arisen—and now the work of Taylor and Wells, a book current among the rising medical men of this country, have been translated into Italian. Professor Concetti, the director of the pediatric clinic at Rome, pays a tribute to the American authors, and speaks appreciatively of the clearness of exposition and the practical character of the work of Taylor and Wells. Especial comment is made on the minute thoroughness of the chapters on infant feeding, intubation, etc., subjects particularly well developed in America.

Some changes, however, were found necessary for the benefit of Italian students. Diseases that more commonly occur in Italy have been treated with a greater profuseness of detail, and some diseases which Taylor and Wells omitted, as Riga's sublingual fibroma, have been added. Rheumatism has been placed where it etiologically belongs—among the infectious diseases—and not among the constitutional diseases, where it appears in the American book.

Verhandlungen der Deutschen Röntgen-Gesellschaft. Band I. Verhandlungen und Berichte des Ersten Kongresses zu Berlin vom 30 April bis 3 Mai, 1905. Hamburg: Lucas Gräfe & Sillem, 1905.

The first volume of the report of the first Congress of the Röntgen Society gives some 250 large pages of most interesting matter in all departments of *x*-ray work, and with the succeeding volume should form a most valuable addition to the literature of a subject growing each day in interest and importance. The great amount of serious work here represented speaks highly for the rank which *x*-ray investigators are taking in the scientific world. English and French as well as German articles are included.

Laboratory Guide in Experimental Pharmacology. Directions for the course given at the University of Michigan. By Charles W. Edmunds, A.B., M.D., Instructor in Pharmacology in the University of Michigan, and Arthur R. Cushing, A.M., M.D., Professor of Pharmacology in University College, London, and late Professor of Materia Medica and Therapeutics in the University of Michigan. Ann Arbor, Mich.: George Wahr, 1905.

This little book is a guide to the student in the pharmacological laboratory at the University of Michigan. It covers the elements of experimental pharmacology, including the modes of action of the principal groups of drugs, and also a certain amount of practical pharmacy, which is comprised in the course given by the authors. While the book essentially represents the methods of teaching at one particular laboratory, and does not attempt to be a systematic treatise on experimental pharmacology, the authors are teachers of such recognized authority that their manual may serve as a guide in other teaching laboratories—with such modifications as local conditions may demand.

Laboratory Manual of Physiology. By Frederick C. Busch, B.S., M.D., Professor of Physiology, Medical Department, University of Buffalo. New York: William Wood & Co., 1905.

This little volume contains the technique of physiological experiments such as are best adapted for the use of medical students. The subjects covered include the physiology of muscle and nerve of the central nervous system, the blood, the circulation, the secretions and excretions, sensation, respiration, and vision. Practical subjects are given prominence wherever possible, *e.g.* thyroid feeding, the influence of drugs on the eye, action of drugs on muscle, etc. Descriptions of apparatus have been largely omitted, and the method of experimenting is given, leaving the deductions to the student to work out for himself. Dr. Busch's manual presents a valuable contribution to the pedagogics of physiology in the medical school, or, for that matter, the biological course of the academic college.

The Animal Parasites of Man. A Handbook for Students and Medical Men. By Dr. Max Braun, Professor of Zoology and Comparative Anatomy, and Director of the Zoological Museum of the University of Königsberg, Prussia. Third Enlarged and Improved Edition, with 294 illustrations in the text. Translated from the German by Pauline Falcke. Brought up to date by Louis W. Sambon, M.D. (Naples), Lecturer at the London School of Tropical Medicine; Honorary Member of the Manila Medical Society; Member of the Société de Médecine Tropicale, Paris; The Royal Medical and Chirurgical Society, etc.; and Fred V. Theobald, M.A., Vice-Principal and Economic Zoologist to the South Eastern Agricultural College; President of the Association of Economic Biologists, etc. New York: William Wood and Company, 1906.

It is a comforting thought that the one hundred and ninety or so animal parasites, exclusive of the countless flies and mosquitos, described in this interesting book, do not all inhabit any one man at any one time. We all entertain some, and are liable to harbor any, especially if we wander into the tropics to take up the white man's burden, hence the interest and value of this important work. Braun's treatise has long been recognized as the authority in this branch of medical research, and it is a matter of congratulation that it is now accessible to English-speaking students. After a brief introduction on parasites in general and their origin, the author devotes the rest of his interesting book to the animal parasites of man. The first chapter is on the protozoa, the immense importance of which, as the *contagia viva* of many of the scourges of mankind, especially in tropical and semitropical regions, has only recently been recognized and is even yet not fully appreciated. Following this are chapters dealing with the platyhelminthes or tapeworms, the nematodes or threadworms, and the acanthocephala (echinorhyncus). Then, after a brief chapter on the leeches, the arthropoda (including the itch mites), ticks, lice, flies, and mosquitos, occurring as temporary or permanent parasites, are treated of at length. Here again, the importance of several of the families of insects as intermediate hosts of many of the pathogenic protozoa is of comparatively recent recognition, but a knowledge of their habits and of their agency in the propagation of malaria, yellow fever, and other diseases is indispensable to the student of tropical diseases.

Dr. Braun handles his subject with Teutonic thoroughness and attention to detail, yet there is nothing dry in his treatise; the work has indeed all the interest of one of the popular nature study books without their superficiality. It is profusely but not superfluously illustrated with well-executed wood-cuts in the text. We know of no work of the kind, in the English or any language, to compare with this in minuteness of detail, clearness of description, interest, and authoritativeness. The only criticism we have to make is that little is said regarding the symptoms occasioned by the animal parasites, or their treatment, beyond a few remarks on prophylaxis. The author is a zoologist and does not attempt to encroach upon the domains of the clinician or the therapeutist. In its own field of animal parasitology, however, the treatise is without rival.

Oliver Wendell Holmes and the Contagiousness of Puerperal Fever. An address delivered at Marlborough, Wiltshire, to the Trowbridge Division of the Bath and Bristol branch of the British Medical Association, October 28, 1905. By Charles J. Cullingworth, M.D., F.R.C.P., D.C.L. (Hon.), Durham; LL.D. (Hon.). Aberdeen; Consulting Obstetric Physician to St. Thomas's Hospital, London. With Portrait. London: Henry J. Glaisher, 1906.

Dr. Cullingworth's admirable address should do much to remind the profession that a countryman of ours had insisted on the contagiousness of puerperal fever and published an essay on the subject several years before the ill-starred Semmelweis had made his earliest observations on the malady. The address has already been discussed at length in the Medical Record, November 25, 1905, at which time the hope was expressed that it might be republished in this more accessible and permanent form.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held April 6, 1906.

DR. SAMUEL LLOYD IN THE CHAIR.

Fractures of the Tarsus.—Dr. LEONARD W. ELY presented six cases illustrating points to be brought out in his paper.

Dislocations of the Metatarsals.—Dr. Ely also presented this case.

Case of Congenital Dislocation of the Patella.—Dr. CHARLES GOODMAN presented a boy, 13 years old, with a congenital dislocation of the patella. His frequent tendency to fall prevented him enjoying games with other boys in which running or jumping was a feature of the sport. The right patella was very movable and the fingers could be readily inserted underneath the inner margin of the bone when the limb was extended. Upon flexing the right knee the patella overrode the external condyle and by voluntary contraction of the quadriceps the boy was able to dislocate the patella completely outwards. There was no deformity of the femur.

Internal Hernia, Strangulated through Omental Slit.—Dr. Goodman presented this case. (See page 713.)

Omental Hernia, with Suppuration; Operation.—Dr. FORBES R. MCCREERY reported the case of a man, 25 years old, a groom, who had been kicked by a horse eight years ago in the right lower quadrant of the abdomen. At first he felt some pain and was about to continue his work when he began to vomit. The abdominal wall became very hard, but there were no lumps or discoloration. At the end of one month he was sent to the hospital. The vomiting and abdominal rigidity persisted and it was thought he would die. There was no pain. The abdomen was blistered and he was bandaged. In about two months he recovered sufficiently to leave the hospital. When he rode horseback he occasionally had a "stitch in the side, near the kidney." Five or six months after the kick a lump appeared in the right inguinal region which worked lower until it entered the scrotum. He never wore a truss. His health failed greatly. On December 2, 1905, the mass was found to be surrounded by old and dense cicatricial tissue. While attempting to separate the mass an opening was made into a cavity containing grumous fluid; a number of small collections of pus were thus opened. The entire mass of omentum seemed to be riddled with abscesses. The pus was odorless and no tubercles were seen. The omentum was tied off in sections, the stump secured just inside the internal ring, the sac was sewn to the skin, and a cigarette drain passed to the bottom of the large intraabdominal abscess cavity. Recovery was satisfactory. The pathologist reported that interference with nutrition was chiefly responsible for the condition of the omentum. There was thickening of vessel walls, and some small foci of calcification in dead tissue. Smears of pus failed to show bacteria.

Perineal Lithotomy for the Successful Removal of a Vesical Calculus of Unusual Size in a Young Child.—Dr. C. C. SICHEL said that this negro child, 2½ years old, was admitted to the hospital for a small umbilical hernia. A few months previous the child had been admitted for rachitis and improved under treatment. The boy was circumcised, but was returned to the hospital because of an infected foreskin. Much pus was found in the urine and the child almost went into convulsions at urination. The prepuce healed, but the pain remained. The amount of pus increased and bladder drainage was instituted. No stone was found, although looked for. The child improved, the pus decreased, and pain and resulting spasm were relieved. Dr. Sichel found a baby well nourished, but with still some pus in the urine. A small opening in the perineum persisted and an umbilical hernia was present. When the abdomen was opened a greatly distended bladder was found with a large calculus resting in its neck but freely movable. After completing his operation for the hernia, he closed the abdominal wound and then enlarged the perineal opening and inserted a broad sponge forceps and, after some difficulty, delivered the calculus. Its shape was oval; its long circumference was 3¼ inches and short circumference 2¾ inches. A calculus of this size was, as a rule, best removed by the suprapubic route. But in this case the perineum had been opened; and again, desiring primary union for the hernia operation, he believed the dangers of a general infection of the peritoneum would be lessened by the perineal lithotomy.

Cases of Fracture.—Dr. CHARLES A. ELSBERG presented several cases to illustrate his paper. One was a fracture of the femur and both bones of the leg in which he had used the aluminum cylinders. There resulted no shortening of the limb.

Report of a Case of Heteroplastic Ovarian Grafting, Followed by Pregnancy and the Delivery of a Living Child.—Dr. ROBERT T. MORRIS presented this communication. (See page 697.)

Dr. C. G. CUMSTON of Boston referred to a recent article by Simon in which it was stated that microscopically two stages followed ovarian grafting. The ovary, during the first part of the time after grafting the ovary, was only nourished by the interstitial fluids of the surrounding tissues. The cortex alone retained its vitality because the fluids could not reach the central portion of the gland. The medullary zone degenerated and disappeared while a cicatricial process became established. At the end of three or four months the ovary regained its normal circulation. The various ovarian elements showed modification in their histological structure, depending upon these different nutritive phases. The interstitial cells gave evidence of changes distinctly demonstrating the influence of the nutrition of the organ, and immediately after the graft they lost their power of differentiation, their boundaries disappeared, while their cell bodies considerably diminished in size. At the end of three months, when their nutrition was again normal, they again gave evidence of functional activity, and took on the appearance characteristic of their physiological state. In view of these facts a properly performed hetero-transplantation of an ovary might result in fecundation and pregnancy. The corpus luteum seemed to him to have considerable bearing on the question of future pregnancies after grafting had been done. Enough work had been done in the study of the relationship between the ovaries and metabolism generally to show that the ovary possessed an internal secretion, and that the influence of the ovary upon the genitalia and body as a whole was due to its action and not to the presence of sympathetic ganglia in the hilum of the gland. Fraenkel had concluded that the corpus luteum was a ductless gland and provided an internal secretion which presided over the nutrition of the uterus and the imbedding of the fertilized ovum, and in the absence of fertilization of an ovum the internal lutein secretion excited the menstrual flow. He had used the corpus luteum of a cow as a therapeutic agent in cases of threatened abortion. The lutein substance was given to stimulate the growth of the trophoblast, upon which the process of successful imbedding depended. Fraenkel was satisfied with the results obtained in fifteen cases. So strongly had the view gained acceptance on the continent that the growing trophoblast was dependent upon the corpus luteum that clinicians were endeavoring to check conception by inhibit-

ing the growth of trophoblast by biochemical means, an antilutein extract being used for the purpose. The lutein tissue found around atresic follicles was held to be totally different in origin to that found within the theca of the true corpus luteum, some writers holding that the former was of connective tissue origin and the latter derived from epitheleum. After extensive investigation Fraenkel decided that the *"glanda interstitiella"* was inconstant and very variable. It did not serve any important or general fuction in the human body. Subsequent to its rupture the corpus luteum was a hematoma lined by convolutions of lutein tissue. This tissue consisted of decidua-like cells held together by strands of connective tissue which carried vessels derived from a vascular tunic upon which the cells lay. This tunic was the theca interna; it surrounded the entire yellow body; it represented the old tunica fibrosa, but during the process of maturation of the Graafian follicle it had become highly vascularized and cellular. Internal to the lutein cells, and lying immediately upon them, was a membrane of variable thickness spoken of as the tunica propria by some and as the basal membrane by others. After discharge of the liquor folliculi and escape of the ovum the delicate new capillaries of the theca interna suffered disruption, blood escaping from them to fill the space previously occupied by the liquor folliculi. Thus a hematoma was formed, and it was in this stage that we generally met with a corpus luteum in the human ovary. He then described the process by which the corpus luteum disappeared. Islands of lutein tissue might escape destruction. In the study of lutein cysts a review of the degenerative stages of the ruptured corpus luteum had been almost barren of results. In studying the developmental processes which preceded rupture there were many difficulties. Of the sixty to eighty thousand primitive ova, only 150 to 200 were said to ripen, and it was a rare chance that provided one with a healthy human ovary. The ovum being a very delicate cell, it may suffer from preparation of the tissues for the microscope, and thus present appearances that were misleading. With regard to the origin of the lutein cell, it could be seen to arise from the connective tissue cells of the vascula theca interna outside the basal membrane of the stratum granulosum. He endeavored to show what was assumed to be a transition of the ordinary connective tissue cells into the large decidua-like cells which made up the large convolutions of the yellow body. He had worked on the assumption that the presence of lutein tissue in the theca interna of a small follicle was not of necessity a pathological phenomena, but that this tissue occurred during the healthy maturation of the follicle, and was in fact a progressive stage in its development. He was not prepared to say at what point in the development of the follicle the lutein cell was due to make its normal appearance, and in the same way at what time the granulosa normally broke up and no longer existed as a complete ring had not been demonstrated. He described lutein cysts and said that when a lutein cyst developed alongside of any other cystic space a complication cyst arose. In large islands of displaced lutein tissue lymphangiectases occurred, and by distention of these spaces nonepithelial lutein cysts arose. The possibility of transplantation of ovaries was now demonstrated beyond a doubt. According to Schultz, both in young and in almost grown animals the ovaries became attached in their new position, whether this were the peritoneal cavity of the same female, of another female, or of a male, or of the same breed, or of a female of a different breed. On other females of the same breed transplanted ovaries of mammals could give off eggs and form corpora lutea; on males of the same breed such ovaries could develop ripe eggs up to forty-two days, and show such after one hundred and seventeen days; on females of other breeds such ovaries exhibited, in the first eight days, no difference from ovaries transplanted on females of the same breed; the mode of healing and development corresponded in the animals investigated to the phenomena described by Ribbert, and in ovaries transplanted to males eggs could be demonstrated in the root, and tube-formed processes crowding from the germinal epithelium downward into the tunica albuginea. At the same time changes took place that at least stimulated the embryonic condition. The transplanted ovarian tissue appeared not to be injuriously influenced either by the blood of the male or by any secretion or other influence from the testicles, at least in the short time covered by the experiments. Transplantation did not operate to produce any unusually rapid growth in ovarian tissue, as might possibly be expected. Dr. Cumston suggested that this subject be followed up by such experiments as implantation of ovaries in a female of another breed whose ovaries had been previously removed, and that breeding experiments be then carried on with the male of the same breed.

Dr. E. B. Cragin said that knowing Dr. Morris's care in experimental work and technique, he would be inclined to take his statements as facts simply because he said so. Still there were a number of tests to be applied to the case before accepting it, and he wished to speak on three things that Dr. Morris had laid particular stress upon, as follows: (1) The condition of the ovaries at the time of removal. It was reported that no graafian follicles were found by the pathologist at the time of its removal, and, it seemed to him, more light should have been thrown upon this statement by the pathologist, especially regarding any developing Graafian follicles. (2) Symptoms presented at time of removal. It should be remembered that a woman might have an absence of menstruation for a long period of time and yet not attain the menopause for a number of years later. There was no question but that the ovaries from a woman who was not menstruating, or who had not menstruated for seven years, might have at the time of removal a recent corpus luteum, showing that ovulation had taken place in spite of amenorrhea existing for seven years. Therefore more light upon this condition of the ovaries was needed in order to decide that the ovaries were unable or incapable of producing ova successfully. (3) Method of removal of ovaries. He said that Dr. Morris laid stress upon the fact that the ovaries were removed by the angiotribe, but Dr. Cragin could not help feeling that possibly there was a little ovarian tissue in the stump. We did not know all that we should know regarding the antomy of the ovarian tissues, but he believed that some of this ovarian tissue might have been left behind in spite of the use of the angiotribe. He said that a few years ago a woman came to him with an ovarian cyst on one side and a large cystic ovary on the other. Just before taking the anesthetic she said she would rather die than be made an "it." He removed both ovaries, and on examining the smaller one found that there were small portions which appeared healthy, and these he stitched in the broad ligament in the horns of the uterus. She was told that she was not an "it." She had menstruated irregularly ever since. Personally he believed that Dr. Morris's case would stand the test, and that he ought to be congratulated in contributing something to the cause of science.

Dr. Henry C. Coe expressed the highest admiration for the reader's successful work. The case was so carefully reported and the technique was so admirable that there seemed to be no question as to the scientific value of the communication. However, as criticism had been invited, the speaker wished to refer to certain lacunæ which should be noted. The report of the pathologist

was not as thorough as could be wished in a case of such importance, as it was not made clear as to whether the ovaries were cirrhotic as the result of previous inflammation, or had simply undergone normal atrophy. The statement with regard to the condition of the Graafian follicles was vague and unconvincing. The age of the patient, and the fact that the uterus had not undergone the usual climacteric atrophy, would seem to show that the case was one of suspension of the ovarian function rather than of premature menopause. Still the fact remained that the patient had not menstruated for a long period and that there was every reason to suppose that the flow would not have returned. Whether she had ovulated or not during this time was doubtful. The speaker called attention to the well-known type of amenorrhea in young women who became unusually obese, with or without the disturbances usually attending the normal climacteric. In such cases he had known menstruation to return and to recur regularly after it had long been suspended, as the result of reduction in weight, local stimulation with electricity, etc., though he could not recall an instance in which pregnancy had followed the renewal of the ovarian function. He had had no personal experience with ovarian grafting, but had frequently noted that in conservative operations upon the ovaries, where only a small portion of an ovary had been left, without disturbance of its vascular supply, that there was a decided tendency to atrophy or to cystic degeneration, and that menstruation was often irregular or ceased entirely. As the reporter had stated, the results after grafting had been so uncertain that there was so much the more reason to congratulate him on the brilliant result which had followed after so many previous discouragements. While the operation must have a very limited sphere, it seemed as if in this instance the highest judgment and skill had been exercised, both in the selection of a proper case and in the manner of handling it.

Dr. Herman J. Boldt said that while he was of the belief that it had not been established that the patient upon whom Dr. Morris operated had premature menopause, due to destruction of ovarian tissue—the pathologist's report being practically useless because no serial sections were made—the fact that there were no evidences of functionating ovarian tissue in the sections made by no means proved that there was no functionating ovarian tissue present; however that might be, the fact remained that, whether functionating or not, the ovaries were removed. Knowing of the case and seeing the operation performed, he did not think it likely that any ovarian tissue was left behind. It was most probable and most positive that the subsequent menstruation was established and caused by the ovarian tissue engrafted from one patient to the other. He said he was reminded of some cases he had had under observation, a mother and three sisters in one family, all four presenting from six months to two years between menstruations. Two of these sisters had families. This showed the possibility of not having menstruation and yet ovulation might occur. Personally he did not believe that one should sacrifice any organ apparently normal.

Dr. Robert H. M. Dawbarn, referring to Dr. Morris's statement of future work he was to be engaged in, injecting the blood of one rabbit into the blood of another, with the idea of establishing tolerance, said that he had heard recently from Surgeon W. F. Arnold, U. S. N., who told him of a communication received from Metchnikoff's laboratory which had a direct bearing upon this work. It was found that a small amount of blood from the male animal injected beneath the abdomen of the female animal rendered her sterile, so far as that male animal was concerned. It was tried on dogs and other animals, and found to be true in every instance. This, Dr. Dawbarn said, opened up a new field for both beneficial as well as dangerous work.

The Operative Treatment of Fractures, with a Description of a New Method.—Dr. Charles A. Elsberg, after referring to the difficulties encountered in devising means of holding fragments in position by suture or otherwise, said that an ideal splint must be strong, of a material which could be molded into any shape desired, must be easily sterilizable, should be easy of introduction, should tightly fit in the medullary cavity and fill it entirely, should have the form of a cylinder so as to allow the callus to grow through its lumen, and it should have perforations so as to allow the circulation of fluids from the outside to the inside of the cylinder; and it must be of a material which was well borne by the tissues and must, if possible, stimulate the formation of new bone; also, it should be absorbed after it had served its purpose. He believed that all these requirements would be fulfilled by the absorbable aluminum cylinders, samples of which were presented. They were made of pure aluminum, could be easily sterilized by boiling in 1 per cent. lysol solution, and, from his experiments on animals, would be absorbed in the human body, he believed, in about one year, on the average. The form that the aluminum took in going into solution was, in all probability, aluminum hydrate, a salt that had antiseptic powers, and, from his experience, he believed that when the plates became infected the metal was able to sterilize itself. In the four cases in which he had used the aluminum cylinders thus far, the results had been very satisfactory; there were two cases of fracture of the femur, one of fracture of the humerus from a gunshot wound, and the fourth was a case of compound fracture of the phalanx. In short, his experience with the aluminum cylinders, although small, had impressed him with the favorable results obtained, the firm union, the perfect immobilization, aseptic healing, and no shortening.

Dr. Howard Lilienthal had watched the treatment of two of these cases, which occurred in his service, and corroborated all that had been said by Dr. Elsberg, and he believed that this was a decided contribution to the surgery of fractures.

Dr. Robert H. M. Dawbarn told of the Gorham Silver Company making hundreds of soap dishes of aluminum which became useless because the alkali ate a way through the bottom of the dishes. Having in mind the alkalinity of the blood, it occurred to him that it might be a good thing to try this absorbable aluminum in the adjustment of bones, and he had used it with admirable results in two cases; in both he had used aluminum staples. The metal magnesium had been tried in the form of staples, but it was found to be less absorbable, although less expensive. He had tried magnesium staples in a case of non-united fracture of the radius and ulna. Dr. Elsberg's plan he believed to be the preferable one, for the method by staples was not so easy as it sounded. With regard to technique, he thought it might result in as much good if the cylinder was made to fit with moderate snugness, and not so tight. Celluloid also had the property of being rigid and being absorbable, and he reported a case of fractured nose in which this had been used but was absorbed in a short time, to the discomfortiture of the patient.

Dr. A. W. Berg questioned the value of any mechanical contrivance in cases of non-union in bone. He referred to two cases of non-union following fracture of the humerus seen during the past year, in one of which the aluminum cylinder was used without success. The *x*-ray showed the cylinder still in place. Unless one learned the cause of the non-union no good results would follow the use of intermedullary splints or other contrivances.

Dr. Elsberg said that in the case referred to by Dr. Berg the cylinder did not fit tightly into the narrow cavity; these cylinders, if they were to be successfully employed, should fit fairly firm, and be forced gently into place with a wooden hammer.

Fractures of the Tarsus.—Dr. Leonard W. Ely read this paper. In it he reported fourteen cases of fractures of the tarsus, eleven of the calcaneum, and three of the astragulus. All of these were old cases and only two or three had been diagnosed at the time of injury. The histories given were quite characteristic, all fractures having been produced by a fall from a considerable height, landing on the feet; the patients had then been carried home and had been laid up in bed for a number of weeks, usually with a diagnosis of sprained ankle or bruise. Afterward they complained of pain and stiffness in the heels. Examination showed a peculiar thickening under the malleoli, with obliteration of the concavities, and lessening of the distance between the external malleolus and the sole, usually a peculiar eversion at the ankle joint. Most of the patients recovered, with a fairly useful foot. The treatment was by strapping, heat and cold, massage, and sometimes a Whitman brace.

A Self-Retaining Trocar and Cannula for the Aseptic Evacuation of Distended Viscera.—Dr. Howard Lilienthal said that in cases of intestinal obstruction in which it became necessary to puncture the intestine, there was great danger from infection, because the puncture could not be made aseptically. Dr. Lilienthal experimented with a long piece of dead gut, connecting one end with a faucet, and tying a string about the other, so distending it with running water. With the instrument he presented he made his first puncture in this dead thin atonic intestine and it worked perfectly. Then he experimented on the living subject, with perfect results. He punctured an empyema of the gall-bladder, evacuating twelve ounces of pus in a few minutes, without any leakage. Then there was the crucial test made in a case of chronic intestinal obstruction, with acute symptoms. There was an enormously distended gut filled with fluid feces; two punctures were made and nearly a gallon of fluid feces was evacuated without soiling the peritoneum.

SECTION ON PEDIATRICS.

Stated Meeting, Held January 11, 1906.

Dr. Matthias Nicholl, Jr., *in the Chair.*

Demonstration of an Improved Croup Kettle.—Dr. Theron W. Kilmer presented this croup kettle for the administration of hot moist air, and also an apparatus for the application of hot dry air.

A Case of Enlarged Spleen in a Child with Marked Anemia.—Dr. Eli Long presented a girl, three years old, whose family history was negative. She had always been very white. The abdomen had been enlarged for at least two years. The many blood examinations made were practically all alike. The red cells numbered 1,840,000, the hemoglobin amounted to from 20 to 30 per cent., the leucocytes were from 12,000 to 15,000, and there were many variations as to size. Poikilocytosis was very marked. There was nothing abnormal in the stools or urine, but there was a starchy indigestion, probably due to overfeeding. Many diagnoses had been made by different men. One said it was a case of primary progressive pernicious anemia, but the history of the case, running over a period of two years at least, and with improvement since being under treatment, negatived this diagnosis. This disease, too, was rare in children. Dr. Rotch of Boston could find no instance of it. The spleen was very large, the liver moderately so. No indications of intestinal toxemia were elicited. The results of *x*-ray treatment were not encouraging. There was no temperature and the bowels moved daily. Iron, cod-liver oil, and oxygen had been given.

Dr. Thomas S. Southworth said that the case looked like one of von Jaksch's pseudoleukemia, rather than one of pernicious anemia. The child had a distinctly yellowish color of the skin which was peculiar to pernicious anemia. The earlier writers on leukemia called attention to the pale yellow color in these cases. There were rickety stigmata of the head and chest, with an enormous spleen, and the liver was, in his opinion, larger than the one outlined by Dr. Long. The leucocytosis was not as high as von Jaksch originally reported. A relatively high degree of leucocytosis was not necessary to pseudoleukemia. A case he had seen improved markedly before lost sight of under the administration of phosphorus and cod-liver oil.

Dr. Charles Hermann said it was a singular thing to find this condition among the Jewish and Italian children, especially in the case of twins, and Hutchison had attempted to explain this by stating that the iron which the infants needed was not sufficient in amount to go around. In these cases he thought there must be some other factor than syphilis or rickets to give rise to this disease, probably some congenital anomaly in the blood-forming organs. He believed the child would die of some intercurrent disease, as measles or bronchopneumonia. The prognosis was not bad *per se* but from intercurrent diseases. Bone marrow had been tried in Europe with good effects.

Dr. Long said that bone marrow had been given the child since it had been in the hospital.

A Case of Hypertrophic Stenosis.—Drs. John Howland and John Rogers reported this case. The patient, a baby, was first seen on May 4, 1905, in consultation with Dr. Rogers when he was five weeks old. He was then the youngest of three, the other two being strong and well nursed by the mother for ten months each. He was a large baby, weighing nine pounds and seven ounces at birth. He began to nurse on the first day and did very well thereafter for three weeks, weighing at the end of this time ten pounds and four ounces. During these first three weeks there had been very little vomiting. After this time, however, he began to do badly, the prominent symptom being vomiting. This was excessive and persistent and forcible. It occurred after each feeding, sometimes immediately after, and sometimes it was delayed an hour or more. He was very hungry, but the more he nursed the more he vomited. The vomiting was projectile. He took some water and kept it down, but he seemed to have pain and cried sharply. At first his stools were fairly normal, but later he developed great constipation. For the next three weeks various measures were tried, to all of which he would respond for a time, and after the old symptoms would return in full force. Thus when barley water and bicarbonate of soda were given before his nursings, and the interval between them made three hours, his vomiting diminished greatly in amount. The same was true when one grain of sodium salicylate was given after his nursing, but all of this time he lost weight and when eight weeks old weighed but 8 pounds and 3 ounces, 2 pounds and 1 ounce below his top weight. An occasional feeding of modified milk was tried but he would not retain the smallest quantity of this. Stomach washings were tried and were successful for a time, but the vomiting returned again as markedly as ever. The mother's milk failed and he was given prepared food very dilute. The vomiting all this time was very frequent but not after every feeding. Sometimes he would go twenty-four hours or more but the stomach contents could be found with the tube eight hours or more after feeding. His constipation was obstinate. He was hungry and would suck at the bottle eagerly for a

minute or two and then cry with pain, draw up his legs, and could not be induced to take more. At this time peristaltic waves could be plainly seen beginning just below the free border of the ribs on the left side and traveling slowly across the epigastrium to just beyond the median line where they faded away and others succeeded them. They would come on for one-half hour or more. The stomach was slightly dilated, extending just to the umbilicus. Although for some time there had been no doubt as to the condition present they were loath to submit the child to so serious an operation as a gastroenterostomy, were there a chance for him to recover without it. His improvement after each new therapeutic measure held out hopes for a time but finally when he was three months old, weighing 7 pounds and 4 ounces, three pounds less than his top weight and 2½ pounds less than his birth weight, he vomited every drop he took and it was seen that there could be no further delay. The operation was performed by Dr. John Rogers. The subsequent history could be passed over rapidly. Water in half teaspoonful doses was begun eight hours after the operation and the amount gradually increased. He did remarkedly well when milk was added, and in a few weeks he was on a mixture proper for a child of his development. He gained flesh rapidly and his digestion had been perfect. Last month he had an attack of bronchitis and vomited once with this but made a rapid recovery.

Dr. Rogers classified the operations for pyloric stenosis as pyloroplasty, gastroenterostomy, divulsion of the pylorus, and pylorectomy. In Dr. Howland's case pyloroplasty was impossible and pylorectomy he considered a difficult operation at the best. In this case he did not see how divulsion of the pylorus could be done and gastroenterostomy seemed to him to be the only feasible operation, performing it without the loop. The operation was quite simple because there were no adhesions and no fat to be encountered.

Dr. Herman Schwarz asked regarding the chemical examination of the stomach contents.

Dr. Howland replied that free hydrochloric acid was found.

Dr. L. E. LeFetra said it was a great privilege to be present at the reporting of the first successful case of this kind in a patient so young, and he congratulated them upon the brilliant results obtained.

Dr. Matthias Nicoll, Jr., asked Dr. Rogers what the exact prognosis was after each of the operative procedures he mentioned.

Dr. John Rogers replied that in gastroenterostomy by suture, the prognosis was 62 per cent. with 16 cases; with the button, 100 per cent.; pylorectomy, gave a mortality of 100 per cent; pyloroplasty in 6 cases gave 50 per cent., while divulsion with 8 cases gave a mortality of 25 per cent. The average mortality was about 73 per cent.

Congenital Stridor of the Larynx.—Dr. Elisha Mather Sill presented a baby 9 weeks old with this congenital stridor, a very rare condition and first described by Thompson. It was characterized by a noisy sound, especially on inspiration, more like a grunting sound. It was supposed to be due to spasm of muscles, choreiform in character. Some claimed it to be due to an enlarged thymus. Again some claimed it to be due to abductor paralysis of the laryngeal muscles causing a falling in of the walls of the larynx during inspiration. There was practically no treatment for the affection, most children getting well as a rule.

Dr. Herman Schwarz said that he had seen three cases recently, in two of whom the *x*-ray showed an enlarged thymus.

Dr. Southworth referred to the case recently reported by Dr. Koplik in which there was a rolling up of the epiglottis.

Dr. Sill replied that the bronchoscope had been used and no such rolling up of the epiglottis had been noted.

Dr. Charles G. Kerley said that clinically there were differences between cases of the kind presented and those with enlargement of the thymus which came under observation, especially at autopsy. In one of his patients with enlarged thymus who died during an attack of laryngismus, there had been repeated attacks of stridor with apnea, complete loss of breath and a period of unconsciousness. He had seen as many as eight cases, six coming to autopsy. One case had thirty attacks prior to death. In the intervals there was no stridor or crowing sounds whatever. He thought these cases were due to what Dr. Sill had described as "sinking in" following abductor paralysis rather than any special nervous influence. If nervous influences were present these spasmodic attacks would be worse at times.

Dr. L. E. LaFetra said he never saw a child with this condition who was over the age of one year, and believed these cases were more common than generally supposed. There was a great difference between laryngismus stridulus and congential stridor.

Dr. Kerley recalled a case in a child of 16 months.

The Diagnosis and Treatment of Chronic Polyarticular Disease in Children.—Dr. P. Wm. Nathan read this paper. Among chronic polyarticular diseases he included all those joint affections with multiple lesions, which showed a marked tendency to produce permanent joint impairment. These were the joint diseases which had usually been classed under the various heads of chronic rheumatism, rheumatoid arthritis and arthritis deformans. After detailing the histories of a number of cases, typical of certain joint diseases, and showing how these various forms might be distinguished from each other and how, by so differentiating them, they were in a position to treat them more rationally and satisfactorily, he said that infectious osteoarthritis could be differentiated from primary infectious arthritis by the early bone swelling, by the fact that the effusion and joint spasm subsided when the joint was placed at rest, though the bone swelling still persisted. In the early stages pain was elicited by pressure over the bone focus and later the deformation was found to be entirely due to bone destruction. From this it was evident that the deformation and joint disability was apt to be much more serious and permanent in osteoarthritis than in primary arthritis. It should be remembered, however, that one might have an epiphyseal bone inflammation which, under favorable conditions, might never directly penetrate into the joint proper, *i.e.* one which remained an ostitis and never became an osteoarthritis. He said that any of the infective microorganisms might cause chronic non-suppurative joint inflammation and the character of the disease seemed to depend upon the number and virulence of the invading organisms or their location either in the bone or in the synovial membrane than upon the variety of the infecting organism. There was one exception to this rule and this seemed to be the gonococcus. The latter showed a marked tendency to invade the periarticular structures causing an intense infiltration. This was the cause of excruciating pain in this form of joint disease. The pain in gonorrhoeal arthritis and osteoarthritis was so intense and so much greater than that of other forms of infection that it had been of service as a diagnostic factor. In the earlier stages of non-suppurative polyarticular disease it was often impossible to say definitely whether the case was one of primary arthritis or osteoarthritis. Fortunately the treatment in the earlier stages was exactly the same in both forms, so that a differential diagnosis was not absolutely necessary at this time. The fundamental principle of the treatment in the earliest stages of all joint disease was perfect rest for all the joints involved. The readiest means of keeping the joints quiet, absolute immobilization, was the plaster of Paris bandage. In osteoarthritis the pain entirely disappeared in a large percentage of the cases as soon as the bandage had been

applied. The joints should be kept immobilized until all constitutional symptoms and all signs of active inflammation had disappeared. It was important to differentiate between osteoarthritis and arthritis. In the septic form this did not present any difficulty. Aside from the syphilitic and tuberculous osteoarthritis, the typhoidal and pneumococcal were the most important infectious joint diseases, which presented both osseous and synovial forms. On removing the immobilizing apparatus the joint swelling disappeared, but one could nearly always detect a certain amount of bone swelling in the region of the joint. In the gonorrheal form he had not infrequently found bone swelling in the various parts of the shafts of the bones. In the osseous forms the infection might take the form of a focus and spread in all directions from this or the epiphysis of the bone might become more or less rapidly and diffusely infiltrated. In both forms there seemed to be rapid bone absorption. When the disease was undergoing resolution there was always a tendency to hyperplastic bone processes which resulted in overgrowth. If the disease penetrated to the cartilage, causing its destruction, the tendency was to bony and ankylosis. Because of the tendency to deformation the active use of the affected part should be delayed until the bones had resumed their normal density. If the bones were immobilized too long, there was great danger of bone overgrowth and ankylosis. The affected joints should be freed from plaster-of-Paris bandages and placed in suitable splints as soon as the very acute symptoms had subsided. Gentle passive motion should then be inaugurated. The treatment of the synovial forms when the acute and subacute symptoms had subsided was important. Prolonged immobilization was not here alone permissible but distinctly advantageous. When the bandages were finally removed it would be found that the joints were quite stiff, but by gentle passive motion they would give a little. A little more force was permissible than in the osseous form, but great care should be exercised not too employ too great force. The time at which these patients should be allowed to use their joints was not always easily settled. If allowed to use them too soon the joints became swollen and painful and permanent joint damage should be guarded against. The use of splints and passive motion he continued for a long time, depending more or less upon the severity of the initial attack. Recurrences are treated like the initial attack.

Some Fat Problems and Goat's Milk in Infant Feeding.—Dr. J. Finlay Bell of Englewood, N. J., read this paper. He said that since the earliest days of milk modification the disproportion of lactalbumin to caseinogen and the physical and chemical differences of the latter in cow's when compared with human milk had been the one apparently insurmountable obstacle in the way of adapting the cow's milk to the infantile dietetic. The question had long been in his mind as to whether there was not a great variation in the fat constituents of the various milks quite as diverse and important as the variations in proteids. In May and June, 1905, while engaged in comparative fat estimations, he had found that goat's milk fat remained fluid while cow's milk fat became solid after cooling. If permitted to stand for twenty-four hours or longer, the goat's milk could be poured out without the aid of heat, but the fat of the cow's milk required heat. He cited two cases in which goat's milk properly diluted had been used with success when the infant tolerated no other food in the way of milk. An analysis of human, cow's and goat's milk had thus far shown that both goat's and human milk fat contained much less stearin than that of cow's milk fat, and that goat's milk fat contained more olein than that of cow's milk fat and more than the particular sample of human milk used in this analysis. Pavlov and Labassoff in their experiment on dogs found that the gastric secretion curve was very different when a fat was given from what it was when substances free from fat were administered. Their experiments seem to show that fat inhibits the normal energy of the secretory process, either by hindering the secretion in a mechanical way or by covering the mucous membrane of the stomach and preventing excitation of the nerve endings or else indirectly by reflexly stimulating the inhibitory nerves of the glands or the inhibitory centers of those nerves. Dr. Pavlov stated that the action of fat might possibly explain the slow progress of secretion after taking milk and also the low digestive power of the juice, and questioned whether the fat of the milk might not be credited with this. He had also shown that the ingestion of fats increased the flow of pancreatic juice and probably a flow that was richer in steapsin. These experiments were carried on with milk, using the same sample by first depriving it of its fat and again adding it and collecting separately the juice through a pancreatic fistula. An average of 10 analyses of goat's milk from one goat gave an average of fat percentage of 4.8 per cent., proteids 3.8 per cent. (proteids not split). The sugar was not estimated. Two bacteria counts gave 10,000 and 12,860 per c.c. A few of the colonies were examined microscopically and were found to be made up mostly of round bacteria in the form of staphylococci and streptococci. Samples of goat's milk and cow's milk taken at the same time were placed side by side on a shelf, and at the end of five hours the cow's milk had soured, but the goat's milk did not sour until the end of eight hours. In curdling the milk with rennet the curd of the goat's milk seemed harder and more fibrinous than that of the cow's milk. The whey of goat's milk, when subjected to the Woodruff test for albumin, showed a percentage of 1 per cent., while that of the cow showed 92 per cent. The reaction of goat's milk was found to be slightly acid to phenolpthalein. The average specific gravity was 1,032. A comparison of melting points of milk fats from goat's and cow's milk showed that for cow's milk this point was from two to three per cent. higher than for goat's milk. He said that it seemed probable that a great deal of mystery heretofore existing in the adaptation of milk to infant feeding, not only as regarded fat, but proteid indigestion, would be largely cleared up by a more intimate knowledge of the chemistry of the fat constituents employed. He believed that good milch goats would give a larger milk ratio per expense of food and keeping than cows. The goat was more docile, less excitable, and not subject to tuberculosis or other diseases of this climate. The goat would thrive where the cow would not, and above all was cleanly. The production of cow's milk free from manure bacteria was practically impossible, commercially, but this was not true of goat's milk. He concluded that the digestion of fat retarded the flow and diminished the amount of gastric juice, at the same time lowering its digestive power, and that the ingestion of fluid oil increased the flow of pancreatic juice and probably the activity of its fat-splitting steapsin. In case the fat was not fluid at body temperature it might still further retard and prevent the flow of gastric juice. The fat might coat over the curds, thereby preventing the action of the gastric juice upon them. It might also prevent the action of trypsin upon them though brought in contact with an increased supply of pancreatic juice. He thought that goat's milk merited thorough and extensive clinical trial in infant feeding.

Dr. Joseph E. Winters said he had seen a number of cases in which babies were fed on goat's milk with very satisfactory results.

Dr. Matthias Nicoll, Jr., said that he did not believe that commerically goat's milk would ever supplant cow's, but he believed that there should be some provision made by which goat's milk could be supplied, especially in the large cities. Italians on the east side, when their babies were apparently hopelessly ill, fed them with goat's milk and with remarkable success.

College of Physicians of Philadelphia: Section on General Medicine.

At a stated meeting held March 12, Dr. David Riesman reported "A Case of Scleroderma." The patient was a woman some fifty years old, who presented swelling, rigidity, and impaired mobility of the skin of the hands and feet in varying degree, together with symptoms of local snycope. Drs. Wm. G. Spiller and J. C. Gittings read a paper entitled "Cervical Rib Associated with Cervicobulbar Palsy." The conditions were present in a young man, nineteen years old, who had a cervical rib on either side, and weakness and wasting of the muscles of the face and upper extremities, in the absence of exaggerated reflexes. Both disorders must be looked upon as the expression of an anomaly in development. The association is an exceedingly rare one. Dr. Robert N. Willson presented a communication entitled "Mercurial Nephritis, with the Report of a Fatal Case." The patient was a man who had been treated successfully for pericarditis, and who was given one grain of calomel every hour for twenty-four doses. Symptoms of nephritis developed and proceeded to a fatal termination. After death the lesions of chronic nephritis were found. Dr. M. Howard Fussell reported "Two Cases of Aneurysm of the Aorta." One patient exhibited edema of the upper extremities, with lividity, and after death an aneurysm of the arch of the aorta communicating with the descending vena cava was found. Dr. J. Alison Scott reported "A Case of Aneurysm of the Descending Thoracic Aorta." The patient was a woman presenting a pulsating tumor in the back below the angle of the left scapula. Into this twenty feet of gold wire was introduced and a galvanic current passed. Rupture, however, ensued eventually. Drs. A. O. J. Kelly and Ralph S. Lavenson reported "A Case of Aneurysm of the Aorta."

New Instruments.

IMPROVED VACUUM ELECTRODE FOR CATAPHORESIS.*

By JOHN C. LESTER, M.D.,

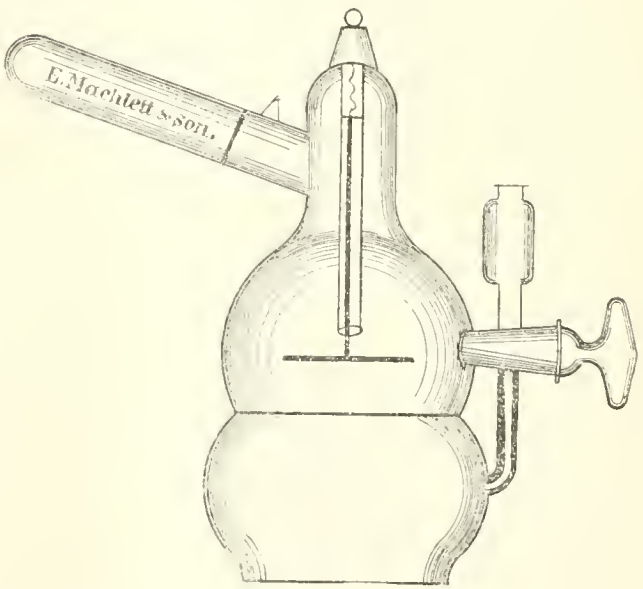
NEW YORK.

About a year ago in an article read before the American Ophthalmological Society I took occasion to report the treatment of several cases of intraocular conditions treated by the so-called high-frequency current. The cases then reported as cured have remained so, and the cases then under treatment have continued to improve; in fact, are now practically well. Recently cases of another description have come under my observation and care—cases in which the fifth nerve was especially involved, more particularly cases of supra-orbital neuralgia. Ordinary vacuum electrodes used in other forms of treatment were employed, as well as the one devised by Dr. Morton, with more or less success. After using these electrodes it occurred to me that an adaptation of the old cupping-glass principle combined with the vacuum electrode, as ordinarily used, could not help increasing the therapeutic value of both. After having combined these two principles in the form of one electrode, it occurred to the writer that a valuable addition might be made to the cupping-glass by the addition of a capillary tube and stop-cock to the distil end of which was also attached a small vial or receptacle for the introduction of various medicinal agents. E. Machlett & Son, of New York City, from suggestions and drawings by the writer, have perfected this electrode.

The illustration given herein perhaps conveys a better idea of the electrode as compared than any written description could do. They are made in three sizes and in two different styles. In experimenting with these electrodes, I have found that although they work with high-frequency currents obtained from both the static machine and the induction coil, certain shapes or forms and depths of the cupping-glass are better adapted to the current obtained from the static machine, and other forms and depths of the cupping-glass are better adapted to the high-frequency current obtained from the coil.

Perhaps, in this connection, it might not be out of place to suggest the right method of employing this electrode. The electrode should be attached to the coil or static machine in the usual way. In order to use the cupping-glass successfully in the average case and without giving too much pain on application, I have found the best method of producing a vacuum in the cupping-glass to be as follows:

A cotton tipped applicator is saturated with ninety-five per cent alcohol. This is lighted with an ordinary alcohol lamp and immediately introduced into the cupping-glass attachment and repeatedly swept around the inside of the cupping-glass. In this manner sufficient alcohol is thrown off on the inside of the glass to continue burning



until the electrode can be pressed upon the part to be treated. If this is done quickly and in the method described, there will be no burning of the tissue and practically no personal discomfort to the patient. After the electrode has been attached this way, any medication desirable can be introduced through the tube by turning the stop-cock and allowing it to flow down from a receptacle at the top which, of course, has been previously filled and a rubber cork introduced to prevent its running out. In the manner described I have employed such drugs as iodine, cocaine, holocaine, and solutions of menthol, with more than satisfactory results.

I would also state, in this connection, that any base can be used, but preferably such bases as are most frequently used for cataphoresis: in other words, those bases which experience has shown are most easily introduced through the skin.

Drs. John F. McParland and Wm. Bedford Brown, of this city, have employed this electrode in several cases, Dr. McParland especially in

*Annual meeting held at Boston, Mass., May, 1905, and published in the report of the Ophthalmological Society.

diseases of the chest, and he reports to the writer that he has had more than satisfactory results in these cases. Dr. Brown has also employed this electrode in various skin diseases and reports equally good results.

My own experiments thus far have been connected with certain pathological conditions of the eye, ear, throat and nose.

These experiments and any definite results obtained will be reported later on.

A twelve-inch coil in connection with a Besser interrupter has been used.

The Besser electrolytic interrupter has proven especially valuable, owing to its small resistance, evenness of interruption and, more particularly, the possibility of continuous use without variation or loss of efficiency—qualities, which will surely appeal to any one who has had extended experiences with many of the interrupters now in use.

616 Madison Avenue.

A PHONENDOSCOPE ATTACHMENT.

By M. D. BLOOMFIELD, M.D.,

NEW YORK.

I beg to offer to the profession this little device of mine which combines a bell stethoscope with a phonendoscope, thereby increasing the sound over the ordinary bell stethoscopes. Its advantages are obvious. Though the increase in the sound is hardly more than that heard by the ordinary phonendo-

scope, the latter is not practical in searching for very fine sounds. The bell covering a smaller area excludes a multiplicity of sounds, thereby selecting the focus desired, and when an intensification of the sound is desirable, instead of the physician carrying two instruments in his pocket, by this plug arrangement a very convenient and portable stethoscope and phonendoscope is combined into one piece.

Montefiore Home.

Vaccination Made Easy. — The Mayor of Madrid, in order to encourage vaccination, has established a lottery, a ticket for which he presents to every one who submits to the operation.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cas and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending April 28, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	475	175
Diphtheria	337	40
Measles	1454	39
Scarlet Fever	237	13
Smallpox	2	1
Varicella	97	.....
Typhoid Fever	22	8
Whooping Cough	26	5
Cerebrospinal Meningitis	475	175
Malarial Fever	.....	.....
Totals	3,125	456

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending April 28, 1906:

			CASES.	DEATHS.
SMALLPOX—UNITED STATES				
Arakнssa, Fort Smith	Apr.	7–14	2	..
California, Los Angeles	Apr.	7–14	5	..
Delaware, Wilmington	Apr.	7–14	2	..
Georgia, Augusta	Apr.	9–23	6	..
Illinois, Chicago	Apr.	14–21	2	..
Indiana, Indianapolis	Apr.	15–22	6	..
Louisiana, New Orleans	Apr.	7–14	21 (8 import'd)	
Maryland, Baltimore	Apr.	14–21	2	..
Michigan, Detroit	Apr.	14–21	2	..
New Jersey, Jersey City	Apr.	15–22	1	..
Passaic County	To Apr.	10	75	..
New York, Middletown	Apr.	24	4	..
New York	Apr.	14–21	.2	..
Ohio, Cincinnati	Apr.	13–20	17	..
Oregon, General	Mar.	1–31	23	..
Pennsylvania, Pittsburgh	Apr.	7–14	..	1
Tennessee, Memphis	Apr.	7–14	16	..
Texas, Houston	Apr.	14–21	4	..
Utah, General	Mar.	1–31	157	.
West Virginia, Wheeling	Apr.	14–21	3	.
Wisconsin, Appleton	Apr.	14–21	3	..
Marinette	Apr.	7–14	4	..
SMALLPOX—INSULAR				
Philippine Islands, Manila	Mar.	3–10	4	1
SMALLPOX—FOREIGN				
Africa, Cape Town	Mar.	3–17	18	..
Brazil, Bahia	Mar.	3–24	20	3
Pernambuco	Mar.	1–15	..	11
Canada, Toronto	Mar.	24–Apr. 14	10	..
Chile, Antofagasta	Apr.	10	14	6
Coquimbo	Apr.	10	12	4
Iquique	Mar.	17–24	8	4
China, Hongkong	Mar.	3–10	13	11
Shanghai	Mar.	3–10	..	2
Ecuador, Guayaquil	Mar.	31–Apr 7	..	5
Germany, Stettin	Mar.	30	3	1
Gibraltar	Apr.	1–8	2	..
Great Britain, Bristol	Mar.	31–Apr. 7	2	..
Liverpool	Mar.	31–Apr. 7	1	..
Greece, Athens	Mar.	23–30	..	1
India, Bombay	Mar.	20–27	..	22
Calcutta	Mar.	10–17	..	140
Karachi	Mar.	18–25	42	18
Madras	Mar.	17–23	..	40
Rangoon	Mar.	10–17	..	69
Mexico, Tuxpam	Apr.	4–11	..	1
Russia, Moscow	Mar.	17–31	49	4
St. Petersburg	Mar.	24–31	3	2
Straits Settlements, Singapore	Mar.	14		Epidemic.
Turkey, Alexandretta	Mar.	24–31	1	1
YELLOW FEVER				
Ecuador, Guayaquil	Mar.	31–Apr. 7	..	23
CHOLERA—INSULAR				
Philippine Islands, Provinces	Feb.	24-Mar. 10	139	113
CHOLERA—FOREIGN				
India, Bombay	Mar.	20–27	..	10
Calcutta	Mar.	10–17	..	32
PLAGUE—FOREIGN				
Australia, Brisbane	Mar.	10	1	..
Chile, Antofagasta	Mar.	19–Apr. 2	5	..
China, Hongkong	Mar.	3–10	15	10
India, Bombay	Mar.	20–27	..	802
Calcutta	Mar.	10–17	..	134
Karachi	Mar.	18–25	68	59
Madras	Mar.	17–23	..	1
Rangoon	Mar.	10–17	..	65
Peru, Callao	Mar.	6–Apr. 1	2	1
Chiclayo	Mar.	6–Apr. 1	4	3
Eten	Mar.	6–Apr. 1	2	2
Lambayeque	Mar.	6–Apr. 1	1	2
Mansefu	Mar.	6–Apr. 1	2	..
Mollendo	Mar.	6–Apr. 1	5	1
Paita	Mar.	6–Apr. 1	10	..
Pisco	Mar.	6–Apr. 1	1	2
Reque	Mar.	6–Apr. 1	11	5
Trugillo	Mar.	6–Apr. 1	49	17

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 19.
Whole No. 1853.

NEW YORK, MAY 12, 1906.

$5.00 Per Annum.
Single Copies, 10c

Original Articles.

THE ETIOLOGY OF ACUTE RHEUMATISM.*

BY LEWIS FOX FRISSELL, A.M. M.D.,

NEW YORK.

ATTENDING PHYSICIAN TO THE SETON HOSPITAL.

THE idea that the disease known as rheumatic fever or acute articular rheumatism is of bacterial origin is no new one; in fact, the suggestion dates well back toward the time when the bacterial origin of any disease was still disputed. As early as 1888 Birch Hirschfeld,[1] arguing from the similarity of rheumatism to the other forms of bacterial invasion, suggested that this, too, might be due to a bacterium as yet undiscovered. Following this suggestion, efforts to isolate the organism have been made during the past two decades. Sahli[2] in 1892 announced that he had isolated from all the serous membranes of a fatal case of rheumatism the staphylococcus citreus. Though of the opinion that he had isolated an organism causing a disease the clinical picture of which was typical of acute articular rheumatism, he leaves the question open as to whether his coccus is specific or an attenuated pus producer. Following the same line of thought in a discussion on the relation of endocarditis to rheumatism, v. Leyden[3] announced that from old cardiac vegetations he had isolated in six cases a diplococcus which he thought might have a causal relationship to the disease. Animal experimentation, however, was without result.

This field of investigation now began to attract the attention of French bacteriologists. Achalme[4] in 1891, and again in 1897, isolated from the heart blood of a fatal case of rheumatism a large bacillus. Later he again found his organism in four cases, but only twice in pure culture, the other two showing cocci as well. The general appearance of his bacillus is that of the organism of anthrax. Culturally there is nothing characteristic except the fact of its being an anaerobe. Though often fatal to animals, neither cardiac nor arthritic lesions were produced. These results were shortly afterward confirmed by Thiroloix. Triboulet[5] in 1898 found a diplococcus in eleven rheumatic cases, his results being shortly afterward confirmed by Coyon[6] and Apert.[7] Injection of cultures into guinea-pigs killed the animals in about twenty days, with autopsy findings such as pericarditis, valvular lesions, pleurisies, but no case of arthritis. Pus was in no case produced. The organism was readily recovered from the blood.

In Germany at about the same time Wassermann[8] isolated from a case of rheumatism, complicated by chorea and endocarditis, a diplococcus. This organism was obtained from the blood, the brain, and the cardiac valves. Alkaline media were essential to its best growth, on others the growth being very scant. Animals injected after an incubation period of three to ten days developed periarthritis without pus formation. As the first experimenter to produce joint symptoms in animals, Wassermann concludes that his organism is specific. Apropos of his statement that very alkaline media are most favorable to the growth of the diplococcus, one is led to think of the possibility of doing harm by the common alkaline treatment of the disease.

One of the most elaborate researches and one of the most successful was carried out by Poynton and Payne.[9] Beginning their work with the idea of finding Achalme's bacillus, and unsuccessful in this endeavor, they isolated in eight cases a diplococcus, three times from the blood of rheumatic cases in life, once from the throat, and the remainder at autopsy. Morphologically the diplococci resembled the organism isolated by Triboulet and Wassermann, but culturally the Englishmen found a medium of milk and bouillon slightly acidified with lactic acid the best. Though facultative aerobes, their best growth occurs under anaerobic conditions. Animals inoculated developed, after an incubation period of a few days, symptoms of a polyarthritis, the different joints being successively attacked. Pyrexia, rapid heart action, and murmurs were other symptoms. At autopsy the joint fluid was usually clear, sometimes a little turbid, but never contained pus. The heart was frequently affected, both endo- and pericardical lesions being found. Other occasional findings were pleurisy, pneumonia, fatty degeneration of the myocardium, coagulation necrosis of the liver, spleen, and kidneys. The diplococci could be readily recovered from the blood and joints, and were demonstrable in sections of the cardiac valves and articular tissues. Continuing this line of research in a later paper, their previous results were confirmed, bringing to sixteen the total number of cases from which their diplococcus had been isolated. Particularly interesting is the case reported in which a rheumatic nodule was excised, under aseptic precautions, from the subcutaneous tissues, and planted *in toto* in the author's milk and bouillon medium. Growths of diplococci obtained from this produced the typical symptoms in rabbits, sections of whose joints showed this organism. Also of special interest is the fact that in one rabbit distinct choreiform movements were produced. Naturally Poynton and Payne[10] conclude that their diplococcus is specific, basing their opinions on the uniformity of the symptomatology and on autopsy findings in their animal experimentation.

Fritz Meyer,[11] after failing to obtain a growth from blood and joint cultures, isolated a diplococcus from twenty-five cases of rheumatic tonsilitis by the ingenious method of injecting a mixed throat culture into the ear vein of rabbits, and, in event of producing arthritic symptoms, obtaining the organism in pure culture from the joints. In its appearance and reactions it does not differ from the organisms isolated by Triboulet, Wassermann, and Poynton, and Payne, but a medium containing peptone and ascites fluid was found best by this investigator. The growth in anaerobic cultures retained its viru-

*Read before the Presbyterian Hospital Alumni Association, December 9, 1905.

lence much longer than aerobically. This diplococcus may be distinguished from the ordinary streptococcus by (1) its greater hemolytic action; (2) the difficulty in changing its virulence by passing it through a series of animals; (3) its free growth in a nitrate of streptococci of human origin in which ordinary streptococci will not grow. In a series of a hundred rabbits inoculated, he in every case produced the symptoms of a polyarthritis after an average incubation period of six to eight days. The joint fluid was serous, rich in mononuclear leucocytes, but never contained pus. Diplococci could be both demonstrated in the joint fluid and grown in culture media if obtained during the first few days of the effusion, but later the fluid was sterile, thus resembling the findings in man. In 21 per cent. of his rabbits an endocarditis was produced, a percentage which closely approximates that of human rheumatic cases which develop endocardial trouble. To prove the special affinity of his organism for serous membranes, mixed cultures of the diplococcus and pyogenic staphylococci were injected into animals, with the result that after a short time while the staphylococci could be readily recovered from the blood, the diplococci could only be obtained from the joints, where, on the contrary, no staphylococci were found. Beaton and Walker[12] in 1903 confirmed the results of Poynton and Payne by isolating from fifteen cases of rheumatism, endocarditis, or chorea, the diplococcus, usually from the heart blood post mortem, but on several occasions also from the urine. In their animal experimentation large doses caused death in forty-eight hours with pericarditis and vegetations on the cardiac valves. Moderately large doses were fatal in from three days to three weeks, with effusion into the joints; while small doses in from three to six days uniformly caused a polyarthritis, which showed a disposition to spontaneous cure; in a few cases pus was found. In cultural characteristics the organism resembled that isolated by their predecessors. A few months later the latter of these two investigators, in collaboration with Ryffel,[13] made a study of the chemical products of the micrococcus of rheumatism. A considerable quantity of formic acid was formed by the growth of the organism, both in the bodies of the cocci and in the filtrate of the media in which they were grown. Streptococci, on the contrary, produced very little formic acid. Now an interesting clinical fact is that in the urine formic acid is not a normal constituent, but it is present in the urine of rheumatics, where it is reduced in amount by the administration of salicylic acid. Formic acid is also found in the tissues of rabbits which have been injected with the micrococcus of rheumatism. Of interest in this connection is the old tradition that beekeepers who are subjected to the stings of their charges are relatively free from rheumatism. The most recent contribution to the literature was published last fall by Lewis and Longcope.[14] These gentlemen isolated during life from the blood of a rheumatic with both endocarditis and chorea a delicate diplococcus. They also succeeded in producing a polyarthritis in rabbits and recovering the organism from the joints.

So much for positive results. Menzer,[15] as a result of his extended work with cocci, has reached the conclusion that many forms of disease, among them rheumatism, are caused by cocci, influenced principally by two factors—the general or local resistance of the body, and the attenuation or virulence of the coccus in question. Such diseases as rheumatism, scarlet fever, pyemia, and measles he considers as thus caused.

Singer,[16] in a monograph published in 1898, insists that, while rheumatism is undoubtedly of an infectious nature and caused by bacteria, these bacteria are the ordinary pus producing cocci, possibly of weakened virulence. The bacteria were obtained at autopsy, though it may be noted that he reports in many cases the large white staphylococcus, which in this country we have come to regard as a skin contamination.

Hoping to confirm the observations already made, a number of experiments on animals were made during the past winter in the laboratory of the Presbyterian Hospital, the clinical material being furnished by cases in the wards and a few seen in private. First an effort was made to isolate an organism from the joint fluid of rheumatic cases. In these experiments the following routine was employed. The joint was aspirated under aseptic precautions as soon as possible after the first appearance of the fluid in the joint cavity; usually within twenty-four, and always within seventy-two hours. Cultures were then made both in bouillon and on blood serum, and often in ascites bouillon and milk and bouillon media. Seven joints in all were aspirated. The fluid obtained varied in its degree of turbidity and leucocyte contents, but never showed in smears distinct bacteria, though in one or two, suspicious coccus-like bodies were observed. Cultures on bouillon and blood serum were made in four cases. Three were entirely sterile, while in the fourth a spore forming bacillus was obtained in one tube which was without effect in producing arthritic or cardiac lesions in animals. It was therefore considered a contamination. The joint fluid from four cases was injected directly into the ear veins of rabbits without producing an appreciable effect.

Three cases of erythema nodosum were seen. In these a blister was raised on the node, the skin of which had previously been rendered aseptic, and cultures were made on serum and bouillon tubes. From one case the culture medium remained sterile, while in the other two white staphylococci were isolated, probably skin contaminations. Injections of fresh cultures into the circulatory system of rabbits were without result.

Failing to obtain from joints or nodes an organism which seemed likely to have a casual relationship to rheumatism, the tonsil as the probable portal of entry was next investigated. Following the method of Meyer, cultures were made from those cases of tonsillitis occurring in the course of an attack of acute articular rheumatism, or from such cases as from the personal history or clinical symptoms seemed likely to be of a rheumatic nature. The cultures were of course a mixed growth, but the streptococcus was nearly always the predominating organism and this often in almost pure culture. A young twenty-four hour bouillon culture of this organism, usually to the amount of five c.c., was injected into the ear vein of a rabbit. At this point it may be well to say that according to our observations the normal temperature of rabbits is extremely variable, running anywhere from 101° to 104° F., so that notwithstanding statements of other observers who mention among the symptoms produced a pyrexia with a temperature of 102° to 104° this seems to us no very reliable indication of disease. Six rabbits showed no symptoms whatever, except in some instances a slight indisposition immediately following the injection. One died within twenty-four hours without demonstrable lesion on autopsy, an effort to recover the organism from the heart blood being unsuccessful; the second died within three weeks without symptoms of arthritis but with a peritonitis

and slight pleurisy. Cultures from the heart blood gave a coccus like the pneumococcus; those from the pleura and lung were contaminated by a putrefactive organism. The coccus isolated caused the death of another rabbit in twenty-four hours, but no lesions were demonstrable on autopsy. The organism was again recovered and determined to be the pneumococcus. The third developed an abscess of the ear six days after injection, and in ten days an arthritis of the left knee. Aspiration of the latter showed it to contain pure blood, but no growth could be obtained either from the joint fluid or from the pus of the ear. Some months later, after all symptoms had cleared up, this rabbit died, the autopsy showing no lesions either of joint or heart.

Not until the end of the winter of 1904 was a bacterium isolated which produced a constant train of symptoms in animals. The results were so remarkable that it seems worth while to report rather fully the clinical course of the patient from whose throat the original cultures were obtained. On March 15, S. S., an alcoholic woman, fifty-four years of age, was admitted to the ward of the Presbyterian Hospital. She had suffered from rheumatism at intervals for eleven years. Ankles, knees, and hips had all been affected. The joints of her fingers were deformed, but she seldom had had sore throat or rheumatic nodes. Physical examination of the heart showed a mitral stenosis. She was admitted to the hospital after a hard drinking bout, nervous, with headache, vomiting, a puffy face, but with no joint symptoms; in other words suffering from alcoholism and a slight nephritis. Four days after admission she complained of pain in the right knee and shoulder, as well as in both arms and hands. Her temperature, which had been running irregularly between 100° and 101°, suddenly shot up to 104°.

Examination revealed a marked swelling of the right knee which was distended with fluid, but not reddened. The throat showed diffuse reddening of the tonsils and pillars of the fauces, but no exudate. The knee was aspirated under aseptic precautions and twelve c.c. of a turbid fluid withdrawn. No growth was obtained either on blood serum, in bouillon, or Poynton and Payne's milk and bouillon medium. Five c.c. of the fluid were injected directly into the ear vein of a rabbit without other result than a temporary prostration. The illness of the patient in question subsequently ran an uneventful course after involvement of several joints, and she was discharged from the hospital some weeks later much improved.

The throat culture made on Loeffler's blood serum showed, as usual, a mixed culture containing (1) Fine watery colonies, which microscopically proved to be cocci with a disposition to arrange themselves in chains; (2) the staphylococcus pyrogenes aureus. Transplants of the former to bouillon showed them to be cocci arranged in chains both long and short, apparently differing in no respect from ordinary streptococci. Four c.c. of a twenty-four hour culture of this organism were injected into the ear vein of rabbit No. 1. In four days, after some questionable temperature elevation, the rabbit seemed sick. Four days later, after a total incubation period of eight days, he appeared very lame in both forelegs, which, on examination, showed distinct swelling of both carpal joints. Two days later, ten after injection, the rabbit was killed, the autopsy showing the following condition: The pericardial sac was distended with a clear fluid, while in the neighborhood of the great vessels was a little deposit of fresh fibrin. The endocardium was smooth, as were the valves, with no evidence of fresh lesions, though around both mitral and tricuspid valves a cartilaginous ring was found. The carpal joints were filled with a thick, whitish, viscid fluid having the appearance of muco-pus. Stained smears of this fluid showed the presence of a large number of eosinophile and neutrophile polynuclear cells. No degeneration of the leucocytes was evident. No bacteria were found. Pus was present nowhere else in the body. Cultures were made from the pericardium, heart blood, and joints, the media used being bouillon, blood serum, and milk and bouillon. In one bouillon tube from the pericardium a growth was obtained, the other tubes remaining sterile. This growth in fluid media had the form of a diplococcus, but injection into a rabbit was without result, and later it was proved to be the white staphylococcus. Of the joint cultures, two bouillon tubes remained sterile, while two showed a growth, the bouillon at the end of forty-eight hours being slightly turbid, and showing in the hanging drops a coccus arranged for the most part in short chains; pairs or clusters were also seen. Of the serum tubes one contained the white staphylococcus, the other was sterile. From the organism isolated in the bouillon tubes the rabbits of the series which we will next describe were inoculated, each receiving five c.c. of a twenty-four hour bouillon culture in the ear vein. The culture reactions of this coccus are not striking. Its growth is slow, in bouillon there is frequently but slight turbidity after forty-eight hours, while none of those characteristic clumps in a clear medium, so frequently seen in cultures of virulent streptococci, were present. After a long series of transplants the chains became much longer, while very many fewer pairs of cocci were seen. On agar the growth is very slow and fine; after about a week's growth the colonies hitherto colorless take on a faint whitish tinge. There is abundant growth, but no production of gas in the sugar media, *i.e.* lactose, glucose, maltose, and mannite. In Hiss' inulin medium coagulation does not occur. Litmus milk is acidified, but not coagulated.

Rabbit No. II.—This rabbit, the first of B series, received in his ear vein five c.c. of a twenty-four hour bouillon culture of the strain of cocci isolated from the joints of rabbit No. 1. After an incubation period of three days the animal showed some lameness of the left leg and slight swelling of the knee joint could be made out. Two days later the right carpus became involved. It was swollen and tender to pressure. During the next week the swelling in these two joints increased, and then gradually cleared up, until thirty-three days after inoculation the swelling had entirely disappeared and the rabbit appeared as well as ever. It was then injected with fifive c.c. more of a fresh culture from the same strain. Within twenty-four hours lameness and swelling of the right carpus were again apparent. These symptoms gradually cleared up, but the animal progressively emaciated, and seventeen days from the date of inoculation appeared paralyzed in all its extremities. Death occurring a few days later, an autopsy was performed which disclosed a large cheesy ovarian tumor. The heart and joints were found normal, nor was pus anywhere detected. Cultures from the heart blood were sterile.

Rabbit No. III was injected with five c.c. of the same strain. Two days after inoculation it was seen limping and showed distinct swelling of the right carpus. After slight improvement these joints became more painful and swollen. On May 12, a month after inoculation, the left tarsus became involved, and nine days later the other tarsal

joints, the other affected joints meanwhile remaining extremely swollen and painful. June 6, while the swelling of the tarsal joints was less marked, the carpus was evidently disintegrating, as distinct bony crepitus could be elicited. On June 9 the animal was killed and the viscera were found normal. The right carpus was filled with cheesy matter, and the bones showed distinct evidence of erosion. The tarsal joints were filled with a sticky, whitish, mucilaginous fluid. Cultures from the heart blood were sterile. Pus was not elsewhere present.

Rabbit No. IV, on April 22, received a similar dose from the same strain. Three days later he became very lame in the left hind leg, the tarsal joints of which were much swollen. On the fourth day the carpal joints of both forelegs and the other tarsus became involved, while the left tarsus was very tense. On April 27, its condition remaining the same, chloroform was administered and an autopsy performed. The joints were much distended and considerable periarticular edema existed. The joint fluid was the same thick, whitish, mucilaginous fluid which we had found in other cases. The pericardium and endocardium were normal. No pus was found elsewhere. Smears from the joint fluid showed a large number of polymorphonuclear leucocytes, both neutrophile and eosinphile, without evidence of degeneration. A few isolated cocci, for the most part in the form of diplococci, were seen. Cultures from the joints and heart blood remained sterile.

Rabbit No. V. The fourth animal to receive an injection of five c.c. from B strain became ill after an incubation period of two days. The right tarsus was the first joint involved. The following day it was lame in the left foreleg, without, however, showing any distinct articular swelling. On May 7, one day later, the right knee was distinctly swollen and tense. Autopsy on the same day showed the right knee distended with a thick red grumous fluid, without evidence of erosion of the articular surfaces. The right tarsus contained the thick mucilaginous fluid found in other cases of this series. The other viscera were normal, no pus being found elsewhere. Smears from the fluid showed the presence of many leucocytes as before, with, in addition, an abundance of red blood cells. A few cocci, intra- and extracellular, mostly in pairs, were also seen. Sections of the periarticular tissue showed the process to be inflammatory in nature, with many leucocytes throughout. A few cocci, mostly in pairs, were seen throughout the sections, both within the cell bodies and free. Cultures from heart and joints were sterile.

Rabbit No. VI likewise received the ordinary five c.c. dose of a twenty-four hour culture from strain B. Seven days later his gait was distinctly lame, the animal sparing his left hind leg. On the 18th, one day later, both tarsal joints were slightly swollen, this swelling growing more marked in the next twenty-four hours, at the end of which period the rabbit was killed. The tarsal joints were, as usual, filled with thick, mucilaginous fluid which contained, in addition, bits of cheesy matter. The liver contained numerous hard, white nodules of calcareous matter, along the course of the bile ducts. The consistency was hard, though some parts appeared cheesy. Sections showed degeneration of liver tissue surrounded by a dense connective tissue capsule. The nodules were apparently formed within the bile ducts. The inflammation was considered tuberculous. No pus was found here or in the other organs. The smears from the joint fluid showed the numerous leucocytes and many cocci, mostly in pairs. Sections from the periarticular tissue showed the presence of inflammation. The mesh of the synovium was distended and contained many leucocytes, as did the entire section. Many diplococci were seen throughout. Cultures were made from the heart blood and the joints, and a bit of periarticular tissue was excised under aseptic precautions and planted in bouillon. The tubes inoculated from the heart blood remained sterile. The bouillon tubes from the periarticular tissue and from the joints became cloudy after two days, and contained an abundant growth of cocci, in pairs and long chains. The cultural reactions of this organism were identical with those of the organism originally injected. Experiments on animals which follow conclusively prove that we had recovered the organism at fault.

Rabbit No. VII. This animal, instead of the ordinary inoculation in the ear vein, received five c.c. of a twenty-four hour fresh culture of B strain in the flank, subcutaneously. The injection was made with the idea of seeing whether our germ was an ordinary pus producer. Though carefully observed during a month's time, there was no appearance of abscess formation or even of local reaction. No joint symptoms followed.

Rabbit No. VIII received the customary injection into the ear vein. After seven days it appeared lame in both hind legs and the right foreleg. No swelling of the joints of the hind legs could be made out, but there was distinct, though slight, enlargement of the right carpus. Thirteen days after inoculation it was again perfectly well.

Rabbit No. IX. This animal received in the ear vein an injection of five c.c. of a forty-eight hour bouillon culture from the periarticular tissue of rabbit No. VI, and was therefore the first of the series to receive a pure culture already passed through one animal. After a short incubation period it became ill, fed badly, and in fourteen days from the date of inoculation died without showing any joint symptoms. At autopsy the pericardium was distended with a turbid fluid filled with fibrin flakes, with fresh masses of fibrin on both visceral and parietal layers. The endocardium showed on both mitral and tricuspid valves a few minute spots looking like fresh vegetations. Both visceral and parietal layers of the right pleura were covered with fresh fibrin. The lung showed a few patches of partial consolidation. On the left pleura were a few patches of fibrin. The left lung was normal. Cultures made from the pericardium and heart blood showed a few small diplococci, but were overgrown with small bacilli and a large coccus, both the latter probably post-mortem contaminations.

Rabbit No. X, on May 29, likewise received five c.c. of a fresh culture of C strain. In three days the right tarsus became swollen and painful, and a week later the other tarsal and right carpal joints became involved. Shortly afterward the rabbit passed from under our observation for two months. Its death occurred in September, when only the right tarsal joint was affected. This was distended and evidently disintegrated. Autopsy showed it to be filled with a sticky, mucilaginous fluid, smears of which showed the usual excess of leucocytes. The ends of the bones were eroded. The cocci were recovered but were contaminated by many other organisms of cocci and bacilli.

A second strain of cocci causing arthritic symptoms was obtained some months later from the throat of a patient with a typical case of acute articular rheumatism. The growth in bouillon was

cloudy throughout with granules floating in the media. The blood serum tubes contained white colonies of staphylococcus albus and fine colonies of streptococci.

On May 19, five c.c. of the mixed bouillon culture twenty-four hours old were injected into the ear vein of a rabbit. Three days later it appeared lame in the left fore leg, the elbow joint of which was slightly swollen. The following day an autopsy was made. The joint was swollen and filled with a nearly clear mucilaginous fluid. Stained smears of the fluid showed it to contain rather few leucocytes, mostly eosinophiles. A few diplococci were also seen. Cultures from the heart blood, joints and periarticular tissue were made, the tubes from the heart remaining sterile. From the joint six bouillon tubes showed a growth which microscopically proved to be a delicate diplococcus, though a few formed short chains. This organism was also found in the tube inoculated with periarticular tissue. On lactose, maltose, and mannite the organism grows without the production of gas. Hiss' inulin medium is not coagulated. On agar there is fine transparent growth which after a week turns slightly whitish. Loeffler's blood serum showed no growth. Litmus milk is acidified and finally coagulated. Five c.c. of a twenty-four hour bouillon culture of this organism was injected into a rabbit's ear vein. Five days later there was a slight swelling of the left knee which cleared up in a few days without further extension.

Briefly summarized the characteristics of the organism obtained by us from the throat of a case of acute articular rheumatism and isolated in pure culture from the joint of a rabbit in which it had produced a polyarthritis, may be described as follows: (1) Culturally it possesses no features by which it may be readily distinguished from other diplo- or streptococci. (2) It possesses special affinity for joints, as a rule attacking several successively, and in a lesser degree for other serous membranes. This is shown by the fact that ten out of the eleven rabbits injected had a polyarthritis, the other dying of pericarditis and pleurisy after a two weeks' illness. (3) That it sometimes produces pus in the joints with disintegration of the joint itself. In all the animals of the first series the joint fluid was somewhat turbid and rich in cellular elements, particularly leucocytes. This was more marked than in any fluid obtained from the joints of a case of rheumatism in man. In the second series the fluid contained fewer cellular elements and was comparatively clear. (4) That though occasionally producing pus in the joints, no pus was found elsewhere in the body, a remarkable fact if we consider the organism to be an ordinary pus producer. The natural result of the injection of such an organism into the circulation would be a pyemia with miliary abscesses throughout the body. (5) That in a majority of cases the course of the disease caused is toward spontaneous cure. (6) The dose was proportionately much greater than one would expect to gain entrance to the human body at any one time, and consequently the more serious results, such as joint disintegration, may possibly be attributed to an invasion of the articular tissues by an overwhelming number of cocci. (Five c.c. were commonly injected into a three to five pound rabbit. A corresponding dose for a one hundred and fifty pound man would be one hundred and fifty to two hundred and fifty c.c., given directly into the blood stream, a condition which would practically never obtain.)

Conclusions.—Our findings in regard to the fluid from rheumatic joints in man agree with the results obtained by other investigators. The joint fluid is sterile not only when planted on culture media, but to the more delicate test of injection directly into the circulation of a susceptible animal. Whether the arthritis caused by our organism be rheumatism in the sense that the arthritis of acute articular rheumatism is, remains "not proven." Certainly a poylarthritis uniformly caused by a distinct organism, tending to spontaneous cure, and with an additional tendency to attack the heart and serous membranes, presents a clinical picture very similar to that of acute articular rheumatism in man, even though a certain proportion of the cases go on to pus formation in the joints. This latter outcome though one of the infrequent eventualities in man, is yet a distinct possibility, and were the invasion made by an overwhelming number of organisms might result more frequently.

We cannot claim with certainty to have isolated a specific coccus, that is, specific in the sense that it will cause the disease known as acute articular rheumatism, but an affinity for the joints our organism certainly possesses. Furthermore, in view of the slight cultural differences between the two strains isolated by us, both causing arthritis, it seems possible that rheumatism may be caused not by a specific coccus, but by a coccus group intimately allied, though perhaps indistinguishable from each other, by our present cultural methods. The individual strains would vary greatly in virulence in its effect both on animals and man. Such a group might well contain the ordinary harmless streptococcus, a common habitant of the tonsil, so many of which were injected in our experiments into the animal circulation without producing symptoms; include a variety causing an arthritis which tends to spontaneous cure unless the number of the invading host be too great, and range up to the malignant streptococci, causing septic joints, septic endocarditis, and pyemia. We have not far to look for an analogy. In the colon group of bacteria we recognize a family ranging from the ordinarily harmless colon bacillus, through the paracolons and paratyphoids to the typhoid bacillus. Yet typhoid fever, as a clinical entity, may be caused by several of these allied strains. Why might not rheumatism be caused by a similarly allied group of cocci? This view could well explain the slightly different cultural reactions reported by the various authors who claim to have isolated the specific coccus of rheumatism, and at the same time be not altogether at variance with the views of those investigators who believe rheumatism to be due to the ordinary pus cocci attenuated.

The older ideas of the etiology of rheumatism, taking no account for the present of the predisposing causes, such as exposure to cold, dampness, etc., its slightly greater frequency among males, seasonal influences, etc., may be grouped roughly into two classes, the Metabolic Theory, and the Nervous Theory. Of these the first is obviously suggested by the similarity of gout to rheumatism; in fact, the two were first separated by Sydenham. As the uric acid is the product of the faulty metabolism of the former, so Prout has suggested that lactic acid is at fault in the latter. Richardson claims to have produced rheumatism by injection of the latter acid, but his experiments have not been confirmed. Haig[17] suggests that uric acid itself is the cause, but it seems at least doubtful, if one distinct chemical body can produce two diseases with such a distinct pathology as gout and rheumatism. The nervous theory was first advanced by J. K. Mitch-

ell,[18] based on the analogy of rheumatic joints to the arthropathies of spinal diseases, but again the absence of trophic change in the joints argues for an entirely different etiological factor. This then leaves us the consideration of the third theory, that of bacterial causation. We have already reviewed the experimental work done in this field by various investigators, but we have yet to consider the reasons deduced from clinical experience for considering rheumatism a bacterial disease. Exposure to cold and wet has long—and I think rightly—been held as a potent factor in the causation of rheumatism; but for as long a time its place in the etiology of pneumonia was just as strong, if not stronger; yet the pneumococcus is now the acknowledged cause of pneumonia, while exposure is relegated to the rôle of lowering body resistance. Why may it not play the same part in rheumatism, giving the bacterium a chance to attack the temporarily unprotected organism?

As to the influence of age, it is a well-known fact that rheumatism occurs with greatest frequency in adolescence and young adult life; in other words, during the period of growth in man when the organism seems least able to combat the infectious and germ produced diseases. In regard to heredity and predisposition, one has only to think of the fight waged for years about the tuberculosis question, where, with the organism known and isolated, the displacement of these fetiches has been accomplished only during the last decade. The fact that rheumatism occurs in epidemics is an old clinical observation. Newsholme[19] concludes that it occurs with regular periodicity. Erdleffson,[20] in Kiel, in commenting on house rheumatism, reports 728 cases in 492 houses, a strong argument for its infectious nature. His figures in detail follow: 2 cases in 1 house, 100; 3 cases in 1 house, 27; 4 cases in 1 house, 5; 5 cases in 1 house, 5; 6 cases in 1 house, 1; 7 cases in 1 house, 1. Fiessinger[21] reports a similar condition.

Epidemic diseases are at the present day considered almost certainly infectious, and probably most of them are caused by bacteria, though in view of recent work in protozoan infections it is not well to be dogmatic. A disease which is transmitted by the mother to the fetus in utero is almost certainly infectious. Of such cases a few have been observed of which perhaps the best attested is that reported by Schaefer,[22] in which the mother was taken ill at the end of pregnancy; the child, though strong and healthy at the time of birth, became ill four days after with an attack of typical articular rheumatism. Pocock[23] reports a similar case. Tonsillitis is regarded, according to some authors (Singer) as being in most cases a rheumatic affection. This angina, as is well known, often precedes and is frequently a symptom of acute rheumatism. The percentage is given as about twenty-five. What more natural supposition than that here the invading organism gains its access to the body, or is here overwhelmed by the resistance of the phagocytes, such an abortive attack of rheumatism constituting the ordinary tonsillitis.

Of that common sequel of rheumatism—endocarditis—two forms have been generally recognized: (1) The malignant or septic form, the bacterial origin of which has long been established; (2) The ordinary rheumatic form occurring in the course of an acute attack of articular rheumatism, subsiding and causing later the mechanical valvular changes which damage the circulatory system for life. This in its incipiency cannot be distinguished from the malignant form, and it too often acts as if the infection were of a genuine pyogenic nature. While usually following the joint affection, it may infrequently coincide with or even precede the arthritis, thus arguing that it is merely another symptom of a general blood invasion with the rheumatic poison, or, to be more explicit, bacterium. With the heart the other serous membranes are likewise affected. Many of the simple pleurisies, not alone those occurring in the course of a rheumatic attack, may well be due to the invasion of our supposed bacterium.

The common skin affections, erythema multiforme and nodosum, are generally conceded to be rheumatic, particularly the latter, as Dyce-Duckworth[24] has shown in a number of articles. This relation of skin affection readily lends itself to an argument in favor of a disease the essential of which is a blood infection, the local skin lesion being caused either by bacterial emboli or a local toxin action. Bacteria have been isolated several times, usually the ordinary pus-producing cocci. Rheumatoid affections, such as those following gonorrhea, scarlet fever, typhoid, pneumonia, are nearly all bacterial in nature. Reasoning from analogy we may well incline to the belief that rheumatism proper is also of bacterial origin. Chorea, long a clinical ally, is perhaps most readily explained as a local invasion of the meninges, and Wassermann's success in producing polyarthritis with a diplococcus isolated from the meninges in a fatal case of chorea, would tend to support this view. Finally, the similarity of a rheumatic to a pyemic infection is so great that a number of authors have called attention to it, notably Singer. Both show an irregular fever, the joint invasion corresponding to the metastatic processes. Profuse sweats, early and marked anemia, high leucocytosis, are common to both. In both one finds frequent lesions in the endo- and pericardium, pleura, lungs, peritoneum, and skin. As a result, then, of a careful clinical analysis of the pathology and symptomatology of rheumatism, one is forced to look beyond the common joint affection to gain a clear idea of such a protean disease attacking, to be sure, oftenest the joints, but too frequently skin, pleura, and heart. Granted a point of entry, probably the tonsil, as the frequency of tonsillitis in rheumatism would suggest, the various conditions vaguely called rheumatic, as well as the out-and-out attack of acute articular rheumatism, seem best explained by considering the essential condition to be a blood infection. Assuming this hematogenous origin, the localization of the symptoms is readily accounted for by the bacterial embolus, or local toxin action.

Assuming this latter view to be correct and that rheumatism is a bacterial disease, the nature of the organism at fault still remains for discussion. Evidently, from the work of the investigators previously quoted, there are five possibilities: (1) An infection caused by the ordinary streptococci or staphylococci with their virulence in some way decreased—a view held by Menzer, Singer, v. Leyden, Sahli, and others. (2) Infection by a specific bacillus—Achalme, Thiroloix. (3) A mixed infection with bacilli and cocci. (4) An infection with a specific coccus—Poynton and Payne, Beaton and Walker, Wassermann, Meyer, Lewis, and Longcope. (5) An infection caused by one of a group of closely allied organisms probably diplo- or streptococci, which cause various grades of arthritic trouble. The most common causing those clinical symptoms which we know as articular rheumatism and tending to spontaneous cure: the more malignant causing a septic arthritis, while between are

many intermediate grades causing as many varieties of infection. The main objection to the first of these views is the extreme rarity of pus formation in rheumatism. It is difficult to imagine the ordinary pus producers as causative agents in so severe an infection, and at the same time so weakened as not to produce their characteristic changes. Animal experimentation, too, has been unsatisfactory with these cocci. The second of these theories seems controverted by the rarity of the findings, which should be constant in the case of a bacillus so striking in appearance and so easy to grow. It seems far more probable that a bacillus entering the heart post mortem was isolated. Animal experiments, too, are far from convincing. The third theory advanced by several followers of Achalme may be dismissed for the same reasons. The fourth is the theory that rheumatism is due to a specific coccus. In favor of this is the uniformity of the findings at the hands of a considerable number of observers; but above all is the success of their animal experimentation and the regularity with which by injection of their organisms a polyarthritis is produced. Opposed to it is the failure in competent hands to duplicate their findings. The fifth theory perhaps reconciles the views held by those who believe in the specific coccus with that of those who believe the attenuated pus coccus the causal agent. It is strongly suggested by the results of our own investigations. Our coccus, while resembling that described b Poynton and Payne, occasionally produces pus in the joints, but not elsewhere, while its affinity for serous membranes is at least as great as that described by the above authors. It seems fair, therefore, to consider it a closely related, but not identical, organism.

In conclusion we wish to thank Drs. Kinnicutt, James, and Thacher for their courtesy in giving us access to the material in their wards, and Dr. Tuttle for his valuable advice in bacteriological questions.

TRAIN B.

Rabbit.	Joints	Heart.	Incubation.	Organisms Recovered.	Joint Fluid.	Results.
1.	Carpal	Pericarditis	8 days		Thick mucilaginous mucopus	Killed
2.	Left knee, Right carpus		3 days			Recovery in 1 month.
Reinjection.	Right carpus		1 day			Recovery.
3.	Both carpal, Both tarsal		2 days		Cheesy matter, Erosion Mucilaginous fluid	Killed.
4.	Both tarsal and carpal		3 days	Cocci in fluid	Viscid mucilaginous fluid	Killed.
5.	Right carpus Right Knee		2 days	Cocci in fluid	Pus	Killed.
6.	Tarsal joints.		9 days	Cocci in cultures, Sections fluid	Viscid mucilaginous fluid	Killed.
7.	Injected into flank					
8.	Right carpus		7 days			Recovery.
9.		Pericarditis, endocarditis, Pleurisy	4 days	Cocci, bacilli		Died.
10.	Both tarsal, Right carpal		3 days	Cocci, bacilli	Pus	Died.

STRAIN C.

11.	Left elbow		3 days	Diplococci fluid and cultures	Viscid clear fluid	Killed.
12.	Left knee		5 days			Recovery.

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113 EAST FIFTY-SIXTH STREET.

CEREBELLAR APOPLEXY.*

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WHILE the ordinary types of cerebral apoplexy are familiar to every practitioner and present no difficulty of diagnosis, the existence of cerebellar apoplexy is not generally recognized. It is undoubtedly a somewhat rare affection. In 187 consecutive cases of apoplexy examined post-mortem at the Presbyterian Hospital, hemorrhage in or softening of the cerebellum was found in four cases only. Yet an examination of the literature of the past twenty years has shown that in every country cases have been observed and recorded in sufficient numbers to warrant the assertion that it is a condition which should be recognized and properly treated. The list of references appended to this paper gives 27 cases in which cerebellar hemorrhage has been found after death. There is no question, therefore, of the existence of the affection.

The following cases appear to present the symptoms which are characteristic of this form of apoplexy.

CASE I.—Mrs. R. had a slight hemiplegic attack when 59 years of age, from which she recovered entirely. At the age of 60, in August, she had a sudden attack attended by great prostration, headache, and severe vertigo, from which she recovered very slowly, her feebleness and apparent sense of weakness

*Read at a meeting of the Practitioners' Society of New York, April 6, 1906.

and uncertainty of balance being out of proportion to any objective symptoms. I saw her in March and again in October, all her symptoms remaining during this time without improvement. These symptoms were a sense of unsteadiness and uncertainty of position whenever she attempted to stand or to walk. While seated or lying down she had no vertigo, but any attempt at standing or walking or going up or down stairs produced a sensation of swaying and instability so that she required assistance. When she was steadied by a cane or the arm of an attendant she felt relieved and could walk fairly well. When left alone she staggered and swayed and showed a tendency to fall toward the right side. There was no paralysis or anesthesia; her knee jerks were normal, there was no Babinski reflex. There was no condition of her digestive system or of her aural apparatus to account for her dizziness. The only objective sign of disease was a nystagmus on movement of the eyes in any direction, but this was not accompanied by any paralysis of the ocular muscles or by double vision, and had not been noticed until my examination. When walking her family had noticed that she threw her head back a little in an unnatural position, but this she had not noticed herself. Her symptoms persisted until, a year later, at the age of 62, she died in an apoplectic attack.

Case II.—Mr. P., at the age of 73, was suddenly seized with intense vertigo, and this was followed by headache and vomiting, attended by great prostration. The latter symptoms gradually subsided, and after two weeks he was able to be up and about, but he suffered for three years after, until his death, from constant sensations of vertigo on standing or walking, and he staggered badly in walking alone. He was never dizzy while lying down or when seated quietly, but when he attempted to walk he became unsteady, felt as if he were going to fall and, in his attempts to balance himself, swayed from side to side and walked with an irregular gait. Any physical or mental exertion increased the vertigo and staggering. He occasionally suffered from a sense of pressure and fullness in the back of the head, and from headache, and when these symptoms were present he staggered more and his legs felt heavy. He had no trouble with sight or hearing. His eyes and ears appeared to be normal. But any motion upward of the eyes always produced vertigo, though there was no nystagmus. He had no paralysis or anesthesia. His knee jerks were normal. His digestion was perfect. The condition described remained stationary for three years, during which I saw him occasionally. He then died of apoplexy.

Case III.—Mrs. E., aged 68, was suddenly seized with an attack of vomiting without any digestive cause, attended by intense frontal and general headache and extreme vertigo and prostration. For a week she was confined to her bed with all these symptoms, although she did not vomit after the second day. Then her symptoms subsided, excepting the vertigo and an unsteadiness of gait, which have persisted for two months. When she is seated she is quite comfortable and has no dizziness, but there is a marked tendency for her head to fall forward, so that unless her attention is fixed upon it the forehead tends to sink down. When she turns her head it is held in a rigid position, as if she were suffering from a stiff neck. Yet she can turn it easily. Any rapid motion, however, causes vertigo. When she walks she goes very slowly and carefully, with feet wide apart and an obvious attempt to balance herself, and she feels uncertain in her gait and staggers at times. There is no special tendency to fall in any one direction. There is no paralysis or anesthesia. The knee jerks are normal. Examination showed a marked lateral nystagmus on any motion of the eyes. There is no double vision or paralysis of ocular muscles. The hearing is normal and her digestion is perfect.

Case IV.—Mrs. J., aged 65, while walking on the street was suddenly seized with vertigo and a feeling of weakness in the right side, and succeeded in getting home with difficulty. There was no paralysis of the side, but there appeared to be a lack of power of control and an uncertainty in motion. These symptoms have continued for the past three years. She staggers in walking, has a tendency to pitch forward and fall toward the right side when not supported, moves in a stiff and rigid manner, and turns her head stiffly. When left alone her head tends to sink forward and toward the right, the instinctive balancing action of the trunk and neck muscles seeming to be imperfect. This tendency is constantly corrected voluntarily. There is no change in the knee jerks and no anesthesia. The condition is stationary. There is no nystagmus.

Case V.—Mr. W., aged 28 years, a fairly healthy, vigorous, and active man, who had had syphilis five years before, was suddenly seized while walking on the street with a sense of prostration and intense vertigo and loss of balance, so that with some difficulty and with the aid of a bystander he got into a shop, and from there was taken home. He noticed immediately after the attack that all objects appeared to be double, one object being considerably above the other, and this double vision being more intense when he looked toward the right. He was confined to his bed for a week. Was able to sit up at the end of a week, but found himself still very giddy. By the end of the second week double vision had ceased and since then he has had no return of it and there was at the time of my examination no evidence of any defect in the ocular movements. For the past three years the sensation of vertigo has continued, being somewhat intense when he is exhausted, or when he has attempted to do any mental work, and less intense when living a quiet country life. Nevertheless it has never ceased, and it practically incapacitates him from his work as a lawyer. He does not stagger in walking, but he feels as if the floor were uneven and was going up and down; describes the sensation much as one would feel in walking on the deck of a rolling, pitching steamer. In other respects he is apparently in good health, although this vertigo annoys him constantly, as it depresses his spirits. He is anxious to do his work and is ambitious. He has had thorough antisyphilitic treatment with inunctions and large doses of iodide and tonics during the past three years, has visited various health resorts, has traveled, and has had the best of treatment without any relief whatever, and the condition seems to be at present a permanent one.

In this case it is probable that some obliterating endarteritis in the cerebral vessels of syphilitic origin had led to a thrombosis in one of the cerebellar arteries, and consequent softening. Cases of cerebellar softening having been recorded at autopsies, though with less frequency than those of cerebellar hemorrhage.

The symptoms common to these five cases are vertigo, of an extreme degree at the onset, subsiding to some extent gradually, but recurring on any attempt to walk, and remaining as a permanent symptom; an uncertainty in gait due, not to paralysis, but to a lack of balancing power, which results in staggering and uneven steps; an unnatural posture of the head when at rest, and nystagmus.

These symptoms when in combination are characteristic of cerebellar disease.

Much attention has been paid in recent years to diseases of the cerebellum, particularly to cerebellar tumors, which are not infrequent; and the symptomatology of cerebellar disease is well established.*

There is no doubt that the cerebellum is the organ of equilibrium. The maintenance of equilibrium is a function in constant use—for no matter what posture is assumed, no matter what kind of a muscular exertion is performed, some compensatory balancing action is called into play adjusting the automatic contractions of the neck and trunk muscles so that the center of gravity shall be preserved. If one watches the growth of a child and the process of learning to stand and to walk and to climb one becomes convinced that these automatic acts, which in adults are carried on below the level of consciousness, are at the outset acts of consciousness and of voluntary effort. As practice has made them perfect they cease to be conscious. But let some disease impair the mechanism and at once the defect becomes conscious, and an effort to compensate for the defect leads to voluntary attempts to preserve or adjust the balance leading to a sense of uncertainty and an effort to preserve the center of gravity. The cerebellar gait is the symptom which results and which differs from all other gaits in disease.

The sense of complete prostration and inability to attempt to rise from the bed is probably due to a suspension of function of the centers of body equilibrium which lie in the cerebellum. This prostration seems to differ from the nerve exhaustion of the shock, for it is not present in cerebral apoplexy. It is different from the exhaustion due to weakness or to heart failure, for none of the signs of these conditions seem to attend it. It is to be explained as the mental appreciation of the loss of equilibrium and as characteristic of cerebellar disease. Babinski has named it "asynergia," and maintains that it may be unilateral, the sense of weakness, inability to balance, and to hold up the body being greater upon one side, and being a transient symptom in cases of tumor. This hemisynergia was well marked in my case IV.

A part and parcel of the balancing process lies in the relation of the head to the trunk. Incline the head far forward or backward and hold it so and then attempt to walk or to pick up an object from the ground and one realizes at once the importance of proper posture of the head in preserving the balance. It has been noticed by many physiologists that extirpation of part of the cerebellum leads to abnormal positions of the head, and in the study of brain tumors it has developed that tumors destroying the forward or cephalic part of the middle lobe have been attended by a falling forward of the head, while those that destroy the back or caudal part of the middle lobe lead to a falling backward of the head. In Case I. the patient carried the head thrown back. In cases III. and IV. the head inclined forward.

Batten† has attempted to show that a lesion of one half of the cerebellum causes a lateral turning of the head, the ear on the side of the lesion being brought down to the shoulder and the chin being turned up and away from the side of the lesion. If this proves to be so, it shows that the cerebellum has a function in determining the position of the head. And it makes any abnormal posture of the head when maintained for some time a valuable symptom of cerebellar disease.

All physiologists who have experimented on the cerebellum have found that irritation of the organ by electricity produces movements of the eyes. These are usually conjoined movements, as single muscles of the eye cannot be excited to action from the cerebellum. In tumors of the cerebellum nystagmus is often observed as an early symptom. And while in some cases this may be due to irritation of the oculomotor centers by distention of the Aqueduct of Sylvius by fluid in the ventricles, in other cases it is undoubtedly a direct cerebellar symptom. Nystagmus was present in two of the cases here reported, and in a third case it was noted that attempts to look upward caused vertigo. This then is to be regarded as a valuable sign of cerebellar disease when taken in conjunction with other symptoms.

The vomiting and headache observed in all the cases are doubtless due to irritation of the vasomotor and pneumogastric centers in the floor of the fourth ventricle, which lies immediately below the cerebellum.

It seems easy from these considerations to recognize the existence of cerebellar apoplexy from its characteristic symptoms.

This has an important bearing upon treatment. I have found that in many cases the diagnosis made of attacks of vertigo in old people is "stomach vertigo;" that they are purged and starved for a few days and then allowed to get up and go about. If some of these cases are really cases of cerebellar apoplexy it is evident that they should be treated as cerebral apoplexy is treated. They should be kept quiet and not allowed to get up under three weeks from the attack. Arterial conditions must be attended to and all effort be avoided. There is no need for special attention to the stomach, for the vomiting is not due to any stomach disturbance, nor as a rule are laxatives required. Bromide or antipyrin may quiet the symptoms of vertigo if this persists. But as the symptom of staggering is due to the lesion it cannot be reached by treatment any more than can a hemiplegia or hemianopsia in cerebral apoplexy.

CASES OF HEMORRHAGE INTO THE CEREBELLUM.

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THE STATE AND TUBERCULOSIS SANATORIA.

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The problem of the suppression of tuberculosis is, beyond doubt, the business of the State to-day. We have now at hand sufficient information concerning the disease to enable a body politic to rid itself entirely of the scourge, if measures conforming to the known facts are rigorously put into force. The subject as a whole may be divided by the State into two divisions; one of which has for its object the curing of tuberculosis, and the other (the more important, from the standpoint of the masses), its prevention. For a decade and more, even, the State of New York, though the leader in antituberculosis work in all lines, with the facts well known, has done little or nothing, as proved by the annual death-rate from tuberculosis for the entire State. The law must lend itself to the problem, and will do so before anything is done to make tuberculosis a disease that can be considered to be under any degree of control. State laws must finally come, and until they do the work of the few men in the medical profession, working along these lines, can have no results of moment; but it is of the curing of tuberculosis from the point of view of the State that I wish to speak in this brief paper.

At the present time some eight or nine States are actually operating sanatoria or partially supporting such institutions managed by private corporations. A few others have funds and laws for the establishing of sanatoria, while many (about half the States in the Union) are agitating the question before their respective legislative bodies. However, during the past year especially, much has been said against sanatorial treatment by men whose opinions are not to be disregarded. Criticisms have been made by physicians in England, particularly after careful scrutiny of published results obtained in their own sanatoria, and they reflect on the soundness and advisability of sanatorial treatment. Some say sanatoria do not pay; some say they are unnecessary and extravagant; some say that the situation may be met in a more practical way. This discussion has related mostly to the treatment of the poor consumptive, and the various conclusions are likewise drawn from the standpoint of the usefulness of sanatoria for the poor. For this reason it seems to me that very careful consideration ought to be given by a State, in the treatment of the poor, primarly, to the endeavor to cure (and no other course can be justified when for the enormous number of consumptives the extreme limitation of available beds in sanatorial treatment is considered), and it is well, if possible, to show plainly where the trouble is in the situation in order that a State may not enter into an impracticable undertaking. To meet the enormous problem of eradication of tuberculosis will of necessity entail a large expenditure of public funds, and the amount applied along this line must be judiciously expended to secure the approval of the laity as well as of the profession.

The high per capita cost to-day of the treatment of consumptives at sanatoria, as shown by the various reports of sanatoria operating in different parts of the country, makes it highly necessary to show definite results of sufficient value from the point of curability to obtain the good-will of the lay public and consequently funds sufficient to carry on this line of the work.

I wish to show now, as well as I can, what is to be expected of sanatorial treatment as practised to-day in this country, and beg to call attention to the following published statistics found in the last annual reports of the following representative sanatoria treating the poor mainly, and in particular I wish to bring to notice the class of cases treated, the maintenance cost per patient, and the results obtained, and further to consider these facts as related to one another.

CONDITION OF CASES ON DISCHARGE

Name of Institution.	Apparently Recovered.	Disease Arrested.	Improved.	Unimproved.	Died.	Non-Tuberculous.	Per Cap. Weekly Cost.	Total No. Discharged.
Adirondack Cottage Sanitarium, Saranac Lake.	39 21%	101 56%	24 13%	13 7%	1 1%	4 2%	$9.07	182
Gaylord Farm Sanatorium, Connecticut.	0 0%	9 36%	9 36%	7 28%	0 0%	0 0%	11.62	25
Loomis* Sanatorium (Annex), Liberty N. Y.	19 23.7%	22 27.5%	25 31.2%	14 17.5%	0 0%	0 0%	5.95	99
Marine Hospital and Public Health Service, Fort Stanton, N. M.	16 9%	5 3%	72 37%	25 13%	69 36%	.. ..	10.36 10.36	187
Mass.† State Sanatorium, Rutland.	108 21.8%	221 40.6%	196 31.4%	37 6.5%	4 7%	0 0%	8.83	760
Montefiore Home Country Sanitarium, Bedford Station, N. Y.	38 18%	24 11%	82 40%	32 15%	27 13%	15 7%	5.66	218
Muskoka‡ Free Hospital for Consumptives, Canada.	4 2.7%	32 22.%	72 50%	35 24.3%	1 6%	0 0%	8.25	161
New York§ State Hospital for Treatment of Incip. Pul. Tuberculosis, Ray Brook.	72 44%	64 38%	21 13%	8 5%	0 0%	0 0%	9.27	190

* Eighteen cases remained less than one month and are not reported upon.

† One hundred and ninety-four cases remained only about one month and are not considered.

‡ Seventeen cases remained less than one month and are not considered.

§ Twenty-five cases remained less than two months and are not considered.

In interpreting results the great difficulty of comparing work done under different standards is evident. However, the favorable results of treatment divide themselves easily into two classes (as shown by post-discharge observation of sanatorial cases), namely, (1) apparently recovered cases and (2) those of various degrees of improvement, designated on discharge by such terms as "improved," "much improved," and "arrested." The first class, representing those cases which three months prior to discharge have been without symptoms of any kind and with signs in the lung indicative of a healed lesion, or absent, is one in which we may expect ultimate recovery in a large proportion of cases, as is now well proved by experience, and for this reason this class furnishes a very positive factor for consideration. The second class, though composed of cases which have all improved as a result of sanatorium treatment, cannot be considered to have obtained anything more than temporary benefit in the great majority of instances. The disease has become quiescent in many cases, to be sure, but with the return to home surroundings, and perhaps to work, relapse occurs, and for this reason the end results of treatment are unsatisfactory. It has been the latter class of cases—and this class is by far the largest to-day, composing three-fourths of all cases discharged from sanatoria—which has brought down the criticism of the profession on the sanatorial treatment as now administered. This result is the usual result ob-

tained now in most cases sent to sanatoria for treatment. Some have said that lives were really shortened by sanatorial treatment, but this I cannot credit, though, if true, one cannot but wonder at the real good, if any, gained by the general run of cases resident at sanatoria.

From these results it will be seen that of 1,822 cases treated at eight of the representative sanatoria 16 per cent. were discharged apparently recovered. In other words, as a curative measure sanatorium treatment proved successful in only sixteen cases in a hundred. Of this number, judging by final results, computed by adding the comparatively few that ultimately recover of those discharged arrested and those leaving sanatorium before a sufficient stay to allow their being classed otherwise than improved, and deducting the per cent. shown to relapse by post-discharge observations now recorded, twelve in a hundred are ultimately cured, or out of 1,822 cases treated 219 will be cured. Of the remaining 1,603 a few are to be expected to recover, as noted above, and to many others great relief is given, and this is not to be disregarded in putting a value on treatment. Many arrested cases, those occurring in the more advanced lesions, as a rule, are able to return home and to work for various periods of time. Others will reach a degree of health compatible with certain grades of work; a few will remain chronic invalids, and many will die. Few die in sanatoria for obvious well-known reasons.

If we consider the small number of cured cases, in view of the enormous expense and extended time of treatment, I do not think a State is justified at this time in operating sanatoria for this class of cases taken as a whole. The treatment of incipient disease, however, shows such a great difference in results that I believe other conclusions may be drawn, and bearing upon this point I wish now to call attention to the following table.

	Number of Incipient or Early Cases Treated.	Apparently Recovered.
Adirondack Cottage Sanitarium, Saranac Lake	90	34–37.7 per cent.
Gaylord Farm Sanatorium, Connecticut	6	0–0 "
Loomis Sanatorium (Annex), Liberty, N. Y.	22	11–50 "
Massachusetts State Sanatorium, Rutland	199	78–39.1 "
Montefiore Home Country Sanitarium, Bedford Station	126	38–30.1 "
Muskoka Free Hospital for Consumptives, Canada	23	4–17.3 "
New York State Hospital for Treatment of Incipient Pulmonary Tuberculosis, Ray Brook	87	63–72 "

Of 553 cases treated in the incipient stage, 228 on discharge are designated as apparent recoveries, or 41.2 per cent. This is below what is generally accepted to be the proportion expected to recover when incipient disease alone is treated, namely, 75 per cent., and is probably explained by the fact that certain cases in this number are included as incipients which do not rightfully belong in the class, but are in various stages of more advanced disease. Making the same deduction from this number as above, and adding the few ultimate recoveries that may be expected to occur in the cases discharged arrested, and in those leaving before the period of three months in sanatorium, which is the only factor barring their being classified as apparently recovered cases, the total number of apparent recoveries is nearly 50 per cent., or one-half of all incipients treated. Accepting that figure, though it is 25 per cent. less than ought to be obtained in the treatment of this class of disease by sanatorial methods, and noting that one institution, founded for the sole purpose of treating incipient disease, reports for its first year's work 72 per cent. of apparent recoveries in incipient cases, the result seems, from the point of view of social economy alone (and with regard to this must all work toward the eradication of tuberculosis be administered) profitable to a State to a very considerable degree.

The average weekly per capita cost for sanatorial treatment of the poor, as shown by the above table, is about $9.00, and, although this exceeds, by a large margin, the cost of any other institution treating disease, operated by a State, it is entirely practical when one considers the results that may be obtained when sanatorial treatment is properly administered. Considering the above results, the high per capita cost and the extended time necessary for the treatment, if it is to prove lasting, there is only one conclusion to be drawn, namely, that for the consumptive poor sanatorial treatment is indicated only in the incipient stage of the disease and should be practised by a State only in this class of cases. The above reported results substantiate those of the work of others in the same line as nearly as can be determined by comparisons, and conclusively show that for a State to be successful in the work, it must, as the first and most important measure in the application of treatment, demand that the tuberculosis be in the incipient stage only, as a requirement for admission to sanatoria. This will be proved beyond doubt in a short time by States operating sanatoria, and the State which recognizes the urgency and extreme advisability of the procedure will be sure of cordial support in its work. On the other hand, a sanatorium not doing so will gradually cease to be what it was intended for and become a hospital for chronic and incurable disease, and as a result must expect the same support as is given these institutions now being operated by a State, and rightfully so. We are immediately met, upon arriving at this conclusion, by the statements that incipients are hard to get, that the poor do not report to the physician at this stage of the disease, and that the general practitioner would not recognize them if they did, all of which is more or less true; but until the incipient disease is known to the profession as the only curable form of pulmonary tuberculosis, surely it will not be recognized. Incipients must be had. When it is demanded of the profession that they diagnose incipient tuberculosis because it is a curable disease and curable only in this stage, then and then only will such a disease be routinely recognized. As it is now, with sanatoria accepting any stage of consumption, and at a high rate of cost trying to accomplish the impossible, the generally unscientific aspect of the procedure is only too palpable, and the people will see it if the profession do not.

As long as this condition exists, the general practitioner will let the incipient patient go contentedly by and send him away to die in a resort supposedly favorable to the cure of tuberculosis, or to live a life of chronic invalidism away from home and relatives. A State by law may establish sanatoria and can limit the treatment of tuberculosis to the incipient stage of the disease, and by so doing not only do great good in actually curing tuberculosis, but incalculable good by educating both the profession and the public. The *laissez faire* policy of the past is now becoming ridiculous, if not to say harmful. The entire subject of meeting the problems presented by tuberculosis and treating tuberculosis as a disease of the masses, is likely to come into bad repute, if it is not met and measures are not taken which have

proved to be most valuable. At this time, though incipient disease is not generally recognized because in the past no such demand has been made upon the profession, New York State, in its institution for the treatment of incipient tuberculosis, has 70 per cent. of all cases under treatment in the incipient stage. The law whereby this condition was made possible is one which other States may well follow, and to Dr. John H. Pryor of Buffalo should be given the credit for the law drawn by him in 1900, and along the lines of which this institution has been organized. This law has proved eminently satisfactory, and there can be no doubt that a State, to be successful, must have such a law before a sanatorium can be successfully operated. Other factors for the State to observe, in selecting cases for sanatorial treatment, are the social conditions and the probabilities in the after life of accepted patients, supposing that favorable result has been the outcome of stay in a sanatorium. The lowest grades of society will furnish few suitable cases for sanatorial care. The inherent ignorance of the patients will prove such a stumbling-block after a god result has been obtained at the sanatorium, that absolute inability to secure proper life after discharge will mean relapse and will consequently negative any good accomplished at the sanatorium. Another class, though of sufficient intellect (and this is a very large class), will on discharge be unable to regulate their lives as instructed, and consequently will be liable, though to a less degree than the former class, to either relapse or subsequent attacks of tuberculosis. It is useless to teach a mode of life to the patient if he cannot follow it out after discharge. To this large number relief must be in some way furnished, and proper care, observation, and advice given them for the critical period of two years following discharge from the sanatorium. In a few years, as it becomes widely known that incipient disease among the poor is the only stage in which curative measures are of avail, it will become, I believe, a fact that sanatoria for the treatment of these cases will cease to be the highly expensive organizations that they are at present, and will in a large degree be self-supporting. The rejection of all but incipient cases will make it possible to operate with little expense for administration beyond the help as provided by patients themselves; and in the treatment of this class of cases all the ideas of forced feeding, absolute rest, etc., will be entirely out of place and consequently will not call for large expenditures. This will not only be a saving, financially, but will make the medical treatment at the sanatorium more successful and valuable in the end. One of the mistakes to-day in sanatorial treatment arises from the fact that patients lead a life of idleness, which is harmful in many cases, and on return to their homes, soft and fat, the least fatigue on taking up work is apt to be harmful. Patients who are treated in a hospital where they do a certain amount of work daily, under observation, are in much better condition to return to their homes to work than if such had not been the case. They know about what they can do. The change from a life of ease in a health resort to one of work in a large city is not what it should be, as I believe many observers among physicians will testify.

The farm colony system, the ideal theoretical method to-day, will, under these conditions, be thoroughly practical, and the cure of tuberculosis will then become such a factor as to be of value equal to what prevention might be to-day if carefully regulated by law. Such a condition is now on the verge of fulfillment by the City of New York, the pioneer city in antituberculosis work in this country, and Commissioner Darlington's Camp, about to be established, will be the first of its kind in America operated on the plan as outlined above.

Many statements made in this paper concerning the cure of tuberculosis do not apply to the well-to-do consumptive patient. Such a patient may still recover from a marked lesion in the lungs by giving long time and great care to it, and others may enjoy the luxury of a chronic pulmonary disease and by means of their wealth endure life for many years; but the poor consumptive must be diagnosed when his disease is incipient and be cured by law.

The question of taking care of the many advanced cases and of the methods to be employed offers great difficulties. Present measures are totally inadequate to meet the demands, owing to the overwhelming numbers in this advanced stage. Provision must be made for care of the advanced cases, under proper supervision in hospitals near the large cities, for many years to come; but with the enactment of laws of prevention and the recognition and cure of the incipient disease at sanatoria, the subject of their care will not require any large amount of attention.

The State of New York was the first to establish a sanatorium for the treatment of incipient pulmonary tuberculosis exclusively, and it has proven beyond doubt the advisability of so doing by the high percentage of favorable results obtained in treatment. As a first requisite I think other States should follow the example set in this work by New York, and they will reap the expected results, which will be eminently satisfactory, not only from the standpoint of the State, but also from that of the individual and the profession.

ATROPHIC CIRRHOSIS OF THE LIVER, WITH REPORT OF TWO CASES.

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Cirrhosis of the liver, a term introduced by Laennec, descriptive of the contracted form because of its yellowish appearance, is characterized by an increase of connective tissue within the liver, and is attended by symptoms which vary according to the distribution of the new connective tissue within the organ. The new tissue may have chiefly an intralobular or an interlobular arrangement, and in some cases there is a combination of both types.

There are various forms of cirrhosis, clinically and anatomically considered, leading to several different classifications by various observers. Chauffard's arrangement, based on the anatomical changes and etiology, is here given. It is as follows:

I. VASCULAR.

(1) Toxic Form { Poisons taken into the stomach. / Autochthonous poisons.

(2) Infection Form { By direct action of microbes. Local action. / By toxic infection Extrahepatic.

(3) Distrophic Form { Arteriosclerosis. / Subhepatic stasis.

II. BILIARY CIRRHOSIS.

(1) Hypertrophic Cirrhosis of Hanot.
(2) Calculous Cirrhosis.

III. CAPSULAR CIRRHOSIS.

(1) Chronic Localized Hepatitis.
(2) Generalized Perihepatitis.

The agents that precipitate an increase of new tissue in the liver may be formed within the organism itself or taken into the stomach. In either case they reach the liver by means of the blood-vessels or lymph channels, and, according to some, occasionally by means of the bile ducts.

Alcohol is generally considered to be the most potent agent in bringing about cirrhosis, whether taken in small quantities, long continued, or in excess. It is claimed that 15 per cent. of all cases are due to alcohol and that 4 per cent. of those addicted to the excessive use of alcohol have cirrhosis. W. B. Cheadle says that contracted liver is nearly always alcoholic in origin. Osler thinks beer and wine are especially answerable for the fatty form. The action of alcohol seems to be greater when taken before meals.

Other agents bringing about this condition are syphilis, malaria, tuberculosis, lead, copper, pigmentation (Welch), passive hyperemia, biliary obstruction, acute infectious diseases, and poisons formed in and absorbed from the alimentary canal. It has been produced experimentally upon different animals by a variety of bacteria. According to Segers, the inhabitants of Terra del Fuego suffer from an intoxication in which the liver is chiefly affected. This condition is attributable to the ingestion of mussels whose livers contain the toxic agent.

Atrophic cirrhosis was recognized as early as the time of Morgagni, but, as above stated, we are indebted to Laennec for the term cirrhosis, which is now quite generally employed when describing a condition where connective tissue is increased. Atrophic cirrhosis is also called venous cirrhosis in contradistinction to the biliary form. Osler designates two types, the small atrophic and the fatty. It usually occurs in those of middle age and of alcoholic habit. Whiskey, gin, and brandy have greater influence as causative agents than beer. Young children not rarely have been found to suffer from this condition of the liver, usually following alcoholism, syphilis, or infectious diseases.

Strümpel, Graham, and most of the German pathologists speak of two stages: first, a swelling and enlargement of the organ, followed by a contraction of the new-formed tissue and a reduction in size. Others claim there is no certainty that this change occurs, and are inclined to the belief that no preliminary swelling takes place. Hanot and Gilbert state that they have never seen a case of alcoholic cirrhosis enlarged during the early stage that subsequently contracted. The organ when observed at the autopsy is generally small and contracted, although in the fatty type it may be enlarged.

The pathological changes may be summarized as an increase of connective tissue, atrophy of the liver cells, increased number of bile radicles, and obstructed portal system. These changes will be considered more at length anon.

The symptoms during the early stage are usually slight and point rather toward dyspepsia than anything more serious. Later, when the portal system becomes compressed, there ensues the onset of a graver condition.

At first there is nausea and vomiting, especially marked in the morning; this is followed later in the day by an increase of appetite. Ingestion of food is usually attended, shortly after, with discomfort and pyrosis. The bowels are irregular in action, sometimes constipated, sometimes loose, and a yellowing of the conjunctiva may be noticeable. These are symptoms of which alcoholics in general may complain, so that the diseased liver may easily be overlooked for months. Later, as the obstruction to the portal circulation increases and the hepatic functions become deranged, there ensues a definite series of symptoms.

As a result of portal obstruction, provided there is not adequate collateral circulation developed to compensate, ascites appears. In many cases, however, according to Hanot, peritonitis brings about the ascites. Ascites occurs in about 80 per cent. of all cases. The onset of ascites is not marked by any special symptoms. The first thing to attract attention, perhaps, is an increasing distention of the abdomen, more marked after meals. Acute cases may rarely occur in which the accumulation of fluid is both rapid and extensive. The quantity varies in different cases up to ten, fifteen, or even twenty liters. When large quantities of fluid are present within the abdomen, examination of the liver is difficult. It may, however, be felt by exerting sudden pressure with the fingers (Dipping). Enlarged spleen is likewise difficult to determine. Its increased size is due both to passive congestion and diffuse hyperplasia of tissue.

The presence of fluid in the abdomen can be determined easily by the usual symptoms; viz., fluctuation and change in the area of dullness when the patient assumes different positions. It remains throughout the disease after its inception, the quantity varying according to treatment and state of the venous anastomosis.

The abdominal subcutaneous veins are dilated, forming about the umbilicus the characteristic caput medusæ.

The urine is scanty during the ascitic stage, contains an abundance of urates, is of high specific gravity; its urea is reduced and uric acid is increased. At times albumen is present, due to congestion of the kidneys and cachexia. The presence of casts, or intense jaundice, indicates nephritis. Bile pigment may also be observed. J. Marischler and E. Ozarkiewicz report a loss in the excretion of phosphates as peculiar to cirrhosis.

Jaundice is not a marked feature, although W. B. Cheadle contends that this symptom is relatively frequent. Fagge reports it present in 35 out of 135 cases. Most frequently the only indication of jaundice is a slight icteroid tinge of the conjunctiva or skin, and when pronounced, jaundice is more likely to be due to catarrhal cholangitis, or compression of the common bile duct from external adhesions, rather than from pressure within the liver (Graham).

As a result of the passive congestion of the intestinal mucosa from the obstructed partal circulation, oozings, in greater or less amount, from the dilated capillaries, are of comparatively frequent occurrence. Copious quantities of blood may be vomited. Melena following gastric hemorrhage is common, and intestinal hemorrhage may exist over a long period without hematemesis. Fatal hemorrhage may result from rupture of the dilated varices about the lower end of the esophagus, and, in one case observed by the writer, the hemorrhage was beneath the right pleura in sufficient quantity to cause death.

Fever is usually absent, but may be present in some cases, due, very likely, to catarrhal inflammation of the bile ducts or perihepatitis.

Respiration may be embarrassed by pressure from the distended abdomen or from pleuritic effusion. The general nutrition suffers greatly, so much so that the emaciated appearance of the face, chest, and limbs, in contrast to the distended abdomen, is characteristic. The eyes are watery, face thin, vessels of nose and cheeks distended, and skin icteroid (hectic facies).

The heart action is often weak, pulse of low tension, and position of heart changed, owing to pressure of fluid within the abdominal cavity.

The digestive functions, as is obvious from chronic congestion of the mucous membranes of the alimentary tract, are always profoundly affected. Fermentation of stomach contents, nausea, and vomiting are frequent symptoms, especially marked in the morning, and no doubt due to the collection of mucus within the stomach.

After a course of one or more years, death is the usual termination, although in some instances recoveries have been reported. Under proper treatment, early instituted, other patients have enjoyed good health for years. Asthenia is the usual cause of death, but it may result from hepatic uremia or hemorrhage from a ruptured vein.

Among the complications which may attend cirrhosis and which arise from the same cause—namely, alcoholic intoxication—are nephritis, myocarditis, and edema, chronic inflammation of the brain, membranes, and occasionally diabetes. Tuberculosis is frequent, especially of the peritoneum, and in many instances it is the direct cause of death.

It is obvious that, except in a few selected cases taken early, treatment can be of little avail in this disease. Even then all that can be hoped for is that the morbid process may be arrested, for the fibrous growth in the liver remains as such permanently, at the point it had reached when treatment was instituted and the irritating cause removed. Any amelioration of the patient's condition is due to the establishment of a better collateral circulation and maybe to an improvement of the functions of the liver in general.

Alcohol should be interdicted, as well as rich and highly seasoned foods. Milk, if possible, should be the main article of food; soups and a small amount of farinaceous foods may be added. Gastrointestinal catarrh should receive attention, the bowels kept regular, and an attempt made to control the ascites by cartharsis and diuresis in cases in which these measures are not contraindicated. Tapping to relieve ascites is more efficacious, and should be done under strict antiseeptic precautions. Hepatic extract has been given with apparent profit.

Following is a report of two cases, with special reference to the pathology:

Case I.—A man aged 60, a native of New York State, by occupation a bookkeeper. For many years he has been addicted to the abuse of alcoholics. Early in the summer of 1904 he consulted a physician in relation to various digestive disturbances and was treated for the same, without the true nature of his malady being discovered. He continued the daily use of alcohol until a short time before his death. Besides the digestive disturbances, glycosuria was discovered to be present a week or so prior to his coming to us. He lived but two days after having been admitted to the hospital, lying in a semi-stuporous state, rousing occasionally to call for water, but otherwise expressing no wants or display of intelligent consciousness. Three or four days before he was seen by us, he fell down a cellar hatchway and sustained a severe bruise at the inferior angle of the right scapula—the skin being broken and extensively discolored. His decline from this time was both rapid and profound.

Physical examination revealed rapid, weak heart action; small, thready pulse; numerous, whistling râles over both lungs, and on the right side, posteriorly, a flat percussion note; abdomen distended and tympanitic, pupils average size, reacting sluggishly to light. The urine had a sp. gr. of 1020, contained a large amount of albumin, and gave a heavy reaction for sugar. Urea 1.4 per cent., chlorides 5 per cent.; phosphates 12 per cent., blood and bile absent. Microscopically, there were a few epitheliogranular and finely granular casts, numerous dark granular, narrow and broad hyaline casts, a few blood cells

Fig. 1.—Inferior surface of the liver in Case I.

and leucocytes. Shortly before death he vomited a small quantity of chocolate-colored fluid.

At the autopsy he proved to be a regular symposium of pathological conditions. Before entering into a detailed description of the special pathological features of interest, I will indicate briefly what was found, generally. Dura adherent to calvarium, basilar and cerebral arteries atheromatous, right hemothorax, right subpleural hemorrhage, pulmonary edema, milk spots of epicardium, calcicosis of aortic and mitral rings; mitrals much thickened, atheroma of aorta and coronaries, ecchymosis in wall of right coronary, stomach dilated, mucosa at pyloric end containing several small ecchymotic areas; within the intestine a large specimen of tænia saginata; hobnail liver, enlarged spleen, accessory spleen, cystic and sclerotic kidneys, bladder walls thickened and perforated by several foramina leading to cysts; enlarged prostate, slight ascites.

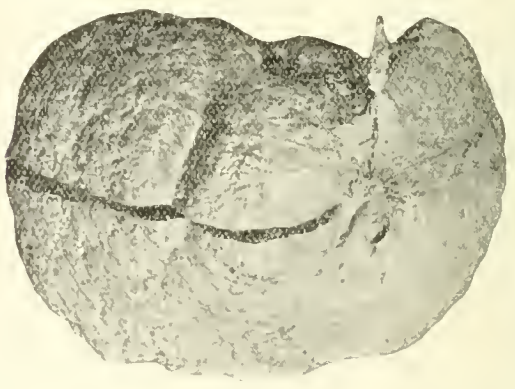

Fig. 2.—Upper surface of the liver, showing nodules and rib sulcus, in Case I.

The liver was removed easily, being free from adhesions; weight, 945 grams; small and rather globular in shape; surface rough, nodular, and inelastic. The nodules were due somewhat to regenerative efforts on part of the liver cells, but mostly from bulging of the lobules as a result of pressure from gradual contraction of the new connective tissue. The consistency was much increased, feeling tough and leathery to knife edge. The cut surface was mottled, exhibiting grayish bands of connective tissue, the interspaces being filled with yellowish glandular tissue. Under the microscope, bands of connective tissue were seen to ramify from

the capsule throughout the organ, encircling groups rather than individual lobules, although it was not strictly multilobular, as here and there strands penetrated between the cells of the lobules (Fig. 3). Scattered collections of round cells occupied at irregular intervals the sites of the portal canals. The con-

Fig. 3.—Photomicrograph, showing bands of connective tissue between lobules.

nective-tissue changes presented the characteristic appearance of a subacute inflammation and seemed to originate about the portal veins, as it is by these channels that the irritating substance is conveyed to the organ. The new tissue was rich or poor in cells, accordingly as it was seen during the early or late stage. Large spindle cells, leucocytes, and round cells predominated, but scattered very sparsely within the new tissue were cells which, with Unna's alkaline methylene blue and eosin stain, gave a darkly staining nucleus, and a cytoplasm composed of large, round, red granules. Mallory's anilin blue connective-tissue stain also gave reddish granules as composing the bulk of the cytoplasm. One giant cell with numerous peripherally arranged nuclei was observed (Fig. 4), and from the presence of this cell, there being no other indications of tubercle, it is fair to assume that giant cells may occasionally exist in the ordinary type of alcoholic cirrhosis. Fibrous tissue was abundant.

The new tissue was richly supplied with blood-vessels, which were distended with blood. The walls of the portal veins were much thickened, but presented no degenerative changes. The smaller branches were obstructed from the contracting tissue, often as well from phlebitis and thrombosis, and the result of this, many times, was hemorrhage either from the stomach or intestine. On the other hand, ascites may develop when a lack of adequate collateral venous anastomosis exists. New bile ducts were fairly abundant, but not markedly so. There have been various theories advanced to account for their origin. The one given by Hamilton is that they come from the nuclei of the atrophied liver cells. "Normal liver cells are to be considered as the expansion of the bile duct epithelium. In cirrhosis they undergo involution and revert to their bile duct embryonic condition." He then proceeds to explain the disappearance of these new structures by a further metamorphosis of their cells into fibrous tissue. Cornil explains the new bile radicles as a growth of new bile epithelium from old ducts along the lines of former capillaries, following the regression of the atrophying lobule.

As a general thing the liver cells were quite well preserved, though many were atrophied, as a result of pressure and a shutting off of nutrition. In many areas near the periphery of the lobule the liver cells were small and spindle shaped from atrophy of the cytoplasm; in other areas, here and there, small vacuoles composed the bulk of the space formerly occupied by cytoplasm (Fig. 5); in still other fields the cells exhibited infiltration of fat collected in large globules. Yellowish granular pigment was generally distributed within the protoplasm of the parenchyma cells. The changes involving the nuclei were peculiar in that many were destroyed, their position within the cell being occupied by a vacuole, the nucleolus showing at one side, and with no appreciable change in the cytoplasm of the cell. The nuclei were double in certain cells, many were enlarged, and still others dumbbell shaped. In many areas might be seen isolated groups of liver cells occupying positions within the broad bands of new tissue, having been cut off from the liver lobule by the infiltrating inflammatory process.

Hamilton contends that a few liver cells, at least, are transformed into connective tissue, thus explaining in part the origin of the new tissue. He exhibits

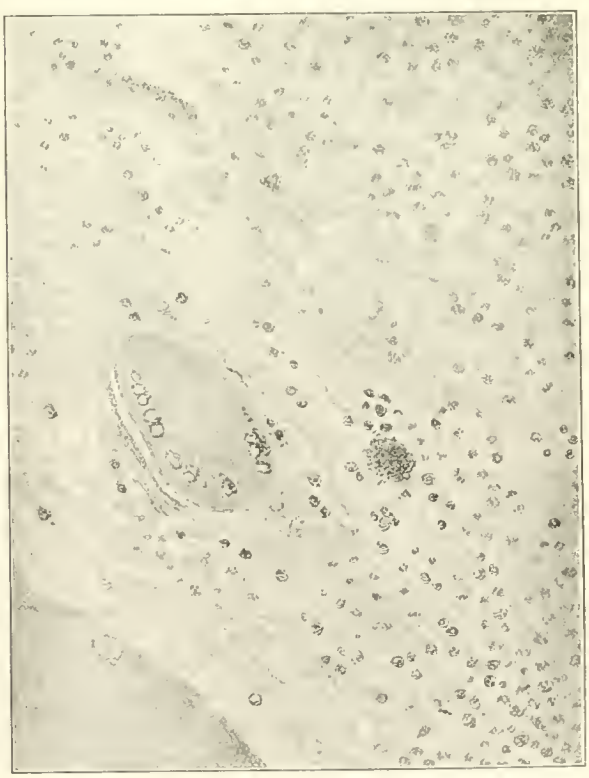

Fig. 4.—Photomicrograph showing giant cell in new connective tissue and round-cell infiltration.

illustrations which would tend to support his assumption, but, according to the teachings of embryology, the liver cells are directly descended from the hyoblastic layer, so it would seem as if a rather startling perversion of type is involved in this hypothesis.

The changes in the pancreas were much less extensive, but analogous to those in the liver; namely, an increase of the interlobular connective tissue. The presence of diabetes would tend to show that the functions of the pancreas had been impaired. H. Strause decided from experiments that liver disease does not produce glycosuria. On the other hand, A. Gilbert and P. Lereboullett report two cases of hypertrophic cirrhosis with diabetes depending on liver disease. H. Sachs holds that liver disease reduces tolerance for levulose, but not for any other sugars. Levulose is the sugar best tolerated in diabetes. Since liver disease affects tolerance for levulose only, disease of the liver is of little importance in the causation of diabetes.

The heart showed round cell infiltration of portions of the epicardium and occasionally of those bands of connective tissue which extended from the epicardium into the muscular structure of the organ. There was, however, no marked fibrosis.

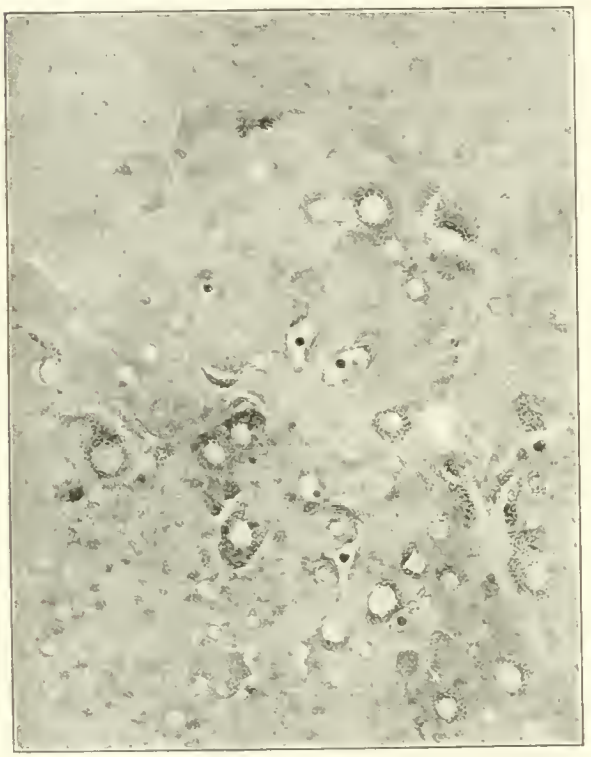

Fig. 5.—Photomicrograph showing vacuolation of nuclei, with here and there a nucleolus present.

Case II.—A woman, aged 71, an inmate of an insane asylum for forty years. She was extremely demented, so much so that all symptoms had to be objectively taken, since little or no reliance could be placed upon her statements. Previous to the onset of her disease, her history was uneventful, except that she was a gourmand at the table. In June, 1902, she suffered from an attack of jaundice, which failed to yield readily to treatment and soon became complicated with chronic tubercular peritonitis. A continuous temperature chart was kept from the inception of the tuberculous condition until her death, in December, 1904. While considerable variability between morning and evening temperature was a constant feature, at times it became extreme—104° in the evening, next morning 97 3-5°. She sustained three exacerbations of jaundice, in March, 1903, October, 1903, and December, 1904, respectively. There was a slight icteroid tinge of the skin and conjunctivæ permanently present. The jaundice was of the obstructive variety, with light stools and choluria. On several occasions during the last attack blood clots were passed in the stools. Between June, 1903, and November, 1904, she experienced some improvement, taking on twenty-five pounds in weight. During her last sickness pain was constant, and, according to her statement, was distributed quite generally over her body; pulse full and strong, ranging between 90 and 105; abdomen distended, tympanitic, and tender, the tenderness being especially marked on right side. The patient succumbed eventually from asthenia.

I will first briefly indicate the conditions of pathological interest found at the autopsy, before describing in detail the changes in the liver. They were as follows: Atelectasis of the two lower lobes of right lung; a tuberculous bronchial gland, caseous and calcareous; aortic atheroma; fenestration of the aortic cusps; thickened mitrals, with calcareous spicule at the base of the posterior leaf; plastic tuberculous peritonitis and subdiaphragmatic tuberculous abscess; hepatic cirrhosis; diffuse nephritis; uterine fibroids.

When the abdomen was opened at the autopsy a peculiar, sweetish, musty odor was noticed. The cavity was free from effusion of serum, but on the right side all the organs were bound together by a thick mass of tuberculous adhesions. A large abscess existed between the diaphragm and the upper surface of the right lobe of the liver. The contents of the abscess were thin, yellowish, and foul. The liver was firmly bound in place by adhesions and was removed with difficulty; weight, 1580 grams of average size, consistency much increased. Its surface was roughened and hobnail in appearance, with tubercles much smaller than in the preceding case, few of them attaining the size of a rice granule. The color of the liver was a dark olive-green, the cut surface mottled by lighter areas of connective tissue infiltration.

Microscopically, the connective tissue was much increased, the arrangement being generally of the multilobular type, but, as in the first case, strands now and then ran into the lobules, separating groups of liver cells and enclosing them. The appearance of the new tissue accorded with the description already given, with the exception that within a narrow zone underneath the capsule at the site of the tuberculous abscess were scattered a profusion of cells having eosinophilic cytoplasm and arranged in granules. Some of these cells contained double or lobulated nuclei, other nuclei being oval and coarsely granular. In many the red granular cytoplasm was widely scattered, as if the cell were undergoing a process of dissolution. Connective tissue cells undergoing a process of hyaline degeneration are, according to Unna, very similar if not identical with the above. Very few were found at any distance from the immediate locality of the abscess.

Round cell infiltration between the liver cells was quite marked, and there was very pronounced fatty degeneration of the parenchyma cells in a large part of the organ. Disposition of bile pigment within the cytoplasm of the cells was another well marked feature. The larger bile ducts were dilated and presented evidences of pericholangitis, and a moderate increase in the number of bile radiles was obvious.

In casting about for an explanation of the cirrhosed condition of the liver, in this case, it is necessary to consider three probable factors—obstructive jaundice, tuberculosis, and alcohol. The woman took a small amount of alcohol each day for a year previous to her death, and it appears possible that the condition of her liver might have depended somewhat on this. On the other hand, so marked was the

tuberculous process about the liver that one is inclined to believe that there was the source of most of the trouble; but the evidences of pericholangitis again attract attention to the obstructive jaundice as a possible etiological factor. On the whole, it seems very probable that the most potent agent here is the tuberculous toxin, the jaundice and the alcohol being accessories, but having much less influence.

CONCERNING THE DIAGNOSIS.*

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The relationship of a correct diagnosis to the practice of medicine and surgery is a matter of supreme importance, and should take precedence of any and all things pertaining to either of these subjects.

Upon the correct diagnosis depends the intelligent administration of therapeutic agents, the proper use of surgical appliances, and all the all-important question of the necessity of operative surgical procedures. In fact, the whole superstructure of medicine and surgery should rest upon the matter of an intelligent observation of facts correctly interpreted. This is a matter we think will be admitted without argument. If there are any proven facts bearing evidence of the virtues of medicinal agents in the treatment of disease and other abnormal conditions of the body structures, then all depends upon knowing the conditions to be corrected.

To the patient so much depends upon the correct intepretation of disease and other abnormal conditions of the body that, in the aggregate, its value could hardly be overestimated. In the early history of medicine and surgery, we surmise, owing to the lack of definite knowledge upon matters of a medical and surgical nature incident to these times, that errors in diagnosis must necessarily have been of frequent occurrence, consequently therapeutic agents, surgical appliances, and operative procedures were, most likely, frequently misused and wrongfully applied.

Naturally one can but think that much empiricism and quackery would have gained a foothold in these early times. At the present time we recognize the fact that opportunities for diagnosing medical and surgical cases have made wonderful advance. In disease, the microscopist and the bacteriologist have taken a recognized position to assist, and in many instances completely supplant, the astute clinician of former times, while the surgeon of to-day, when in doubt, brings to his aid the Röntgen ray, through which the bony structures, the presence of abnormal deposits, and the precise condition of the more important organs and tissues of the body are presented to view—help which the profession at large has eccepted in part, at least, with occasional doubts and misgivings.

When we analyze some of these modern aids to diagnosis, if we can judge by the current literature upon the subject, some of them appear quite limited in their usefulness. In acute lobar pneumonia it has been accepted, in part at least, that to the bacillus of Friedlander is the disease due. In the buccal and bronchial secretions and expectoration of those affected this bacillus is sometimes found, but not invariably so. This same bacillus is occasionally found in the mouths and expectoration of healthy persons. In diphtheria nearly all authorities accept the fact that the Klebs-Loeffler bacillus is the cause of the affection, still there are cases of undoubted diphtheria, in which this bacillus is not found. Then it is a fact that two per cent. of all healthy children's throats contain this specific bacillus. In typhoid fever much has been said of the blood agglutination test of Widal, as well as the diazo reaction test of the urine. These are recognized as helpful methods of diagnosis, but there are times when they give negative results in typhoid fever, especially early in the disease, and sometimes they do, and sometimes do not, give positive indications later in this disease. Unfortunately, the same diazo reaction is obtained in tuberculosis and some other acute and chronic affections.

In early tuberculosis, when so much for the patient depends upon an early interpretation of symptoms, the tuberculin test is frequently wanting or misleading. Of this fact we have the opinion of Dr. S. A. Knopf, who is accredited with saying before the New York Academy of Medicine that the unreliability of tuberculin as a diagnostic agent of value is shown by its producing the same characteristic reactionary symptoms in syphilis, actinomycosis, and ordinary anemic conditions, where no taint or trace of tuberculosis exists. As anemic conditions are so frequently present in cases where tuberculosis is suspected, we should not place too much reliance upon this method of diagnosis.

Blood examinations have come to be recognized as aids in the recognition of abnormal conditions of the body. However, there is more than one condition that may cause a disproportion between the red and white blood corpuscles, as well as modify the percentage of hemoglobin. The Röntgen ray has within recent years become much in evidence as an agent for diagnosing both medical and surgical cases. While its usefulness is acknowledged, there is sufficient evidence to warrant the statement that it is not without its limitations. In regard to the true condition of the various organs and bony structures of the body, abnormal deposits, renal and biliary calculi, its impressions are wrongfully construed at times. Those competent to pass judgment upon the matter intelligently say that in diagnosing fractures and dislocations it is sometimes misleading. Even with the greatest care it has been known to mislead the surgeon. No more impressive illustration of this fact need be given than related by Dr. Janeway, who has reported an instance in which the Röntgen ray had located a plate of false teeth in the esophagus. At the operation no teeth were found, and a careful search revealed them securely placed under the mattress of the bed.

The teaching of this seems to be that it would be unwise to say that an individual was suffering from some disease simply because the specific bacillus was found somewhere in the body, or that the Widal or diazo methods had indicated typhoid fever, or the tuberculin test tuberculosis, and the Klebs-Loeffler bacillus had or had not been found. These helpful methods of diagnosis are somewhat limited in value, and too much dependence should not be placed in them as a class, unless accompanied by the clinical phenomena characteristic of the disease.

The microscopical examination of diseased structures, secretions, and excretions of the body has often made clear a doubtful diagnosis. The making of a correct diagnosis is sufficiently easy in a limited number of cases, and there is no doubt but what this faculty is better developed in some persons than others. There are some persons who would never become expert in diagnosis, regardless of opportunities. Errors are likely to spring up from precipitancy in arriving at conclusions. The practice of diagnosing disease at a glance is to be looked upon with contempt. There are cases very difficult to

*Read at a meeting of the Wayne County (Ind.) Medical Society, January 3, 1906.

diagnose, then there are again cases, for various reasons, that never are correctly diagnosed. One reason why the average clinician very frequently fails in his diagnosis is primarily that he fails to appreciate what constitutes an absolutely healthy body, the location of the different organs, their size, the normal vesicular respiratory sounds and heart sounds, their variation in differently developed bodies, the variations in intensity of pulmonary and cardiac sounds, etc. The full clinical history of any case complete with antecedents is too often omitted. The snap-shot diagnosis is too frequently given. No better evidence need be given than the large number of cases of biliousness alone, which annually visit the doctor's office, as well as the number of deaths from heart failure.

Dr. Gould of Philadelphia has recently called attention to the many conditions diagnosed as organic diseases that were entirely relieved by properly fitted glasses to the eyes. Among such conditions were dyspepsia, persistent vomiting, flatulency, biliousness, migraine, various localized neuralgias, liver affections, constipation, hives, eczema, and numerous other conditions. He says Haig's uric acid condition usually means "eyestrain." He quotes a famous surgeon who says his most brilliant cures of disease of the pelvic cavity, as well as other conditions, have been effected through the oculist.

There are cases presenting many features of angina pectoris, as well as other affections of the heart, that can be traced to the stomach and other conditions in the abdomen. Hysteria may closely simulate true angina. Such a case I have observed for twenty-five years in a woman with frequent attacks, who is still living and in good health. The ashen color of the face during a paroxysm is a better guide than the pulse. Syphilis may closely simulate typhoid fever at certain times, and the resemblance in certain stages between tuberculosis and typhoid fever is well known. An enlarged nodular liver diagnosed as malignant has been known to make wonderful improvement under antisyphilitic treatment. I have heard it said by good surgeons that they believed it impossible to tell absolutely what conditions existed in an abdomen until it was opened to inspection, and sometimes even then not until after an examination under the microscope. This, I believe, is correct. As an illustration, I would cite the following:

Mrs. X, about 60 years of age, American, whose antecedents gave negative information, was the mother of one child, and had been a widow for thirty years. She was of average size, and had enjoyed good health throughout life until the present time. Recently it was discovered that she was having an evening temperature of one or two degrees, and she complained of general weakness, poor appetite, and constipated bowels. Physical examination revealed no disease of any organ or portion of the body, except that, filling the greater portion of the lower abdominal cavity, and most prominent in the line of the lower portion of the descending colon, was an enlargement of considerable size and of semi-solid feel. There was no pain nor vomiting. At the end of thirty days the woman died, apparently from exhaustion. During the patient's sickness a consultant of large experience examined the patient and gave a very positive opinion, which was not shared in by the attending physicians, that she was suffering from impaction of the colon with feces, and resulting autointoxication. The autopsy revealed an empty colon, and the enlargement in the abdomen was due to a cancerous omentum more than two inches in thickness.

I have looked upon the diagnostician with distrust who can invariably make a correct diagnosis in the pregnant uterus at full term, through external palpation, of the exact relative position of the child. Such we read of occasionally in medical literature.

It would appear true, indeed, that within the last quarter of a century physicians and surgeons have improved in the making of the diagnosis. And we of to-day are better diagnosticians in the aggregate than were doctors in those days, although it is affirmed that one of the world's most prominent physicians has recently said that his diagnosis was correct in only about sixty-two per cent. of his cases which came to the autopsy table.

It would, perhaps, be fair to say at the present time that there are many cases, both of a medical and surgical nature, in which our diagnosis must be somewhat limited. He who would serve his patient best must use all methods for correctly interpreting disease and other abnormal conditions of the body, not relying upon any one procedure to the exclusion of others which have proven to be meritorious.

The Course of Leprosy Infection.—H. Gougerot discusses first the "leprous chancre," following this with a description of leprous bacillemia. For many years the presence of the bacilli of Hansen has been noted in the large vessels. Still more often are the bacilli found in the small vessels and sometimes in the tissues and organs which appear to be healthy (microbic thromboses). The characteristic lesion of leprosy is formed at the point where these bacilli are arrested. By means of the great abundance of the bacilli, their agglomeration in masses, and the slight cellular reaction, this bacillemia of the acute attacks ought to be distinguished from all other types. This bacillemia is of short duration, lasting probably only during the first phase of the tegumentary attack and giving rise to general reactions, such as fever and so on. The chancre remains for a long time stationary and isolated. Slowly the second period develops and there may be ulceration, which is due almost always to a secondary infection or to repeated traumatisms. By insensible transitions the last period is reached. This might be called the tertiary period in comparison with the stages of syphilis. This last stage is characterized by localized or bacillary lesions, cutaneous or visceral.—*La Tribune Médicale.*

Pubiotomy.—Pfeilsticker describes the operation of pubiotomy as it is performed subcutaneously in Walcher's clinic. In distinction to all other operators, Walcher carries the needle that is to conduct the saw behind the bone from below upward, instead of from above downward. The proper point of the labium majus is selected and fixed with the index finger and the skin over it punctured with a scalpel to permit ready passage of the blunt needle. This is carried at first vertically down to the edge of the pubic ramus, so as to pass between it and the crus of the clitoris. The needle is then caused to hug the posterior aspect of the bone and is brought to the surface just above its upper surface. By operating in this way, the danger of hematoma and bleeding through injury of the corpora cavernosa of the clitoris is obviated. The author satisfied himself by experiments on the cadaver that the needle really did pass behind the bone in the manner indicated, and that, furthermore, its course was subperiostial, so that the bridge of periostium afforded a further protection to the soft parts from injury by the saw. Damage to the bladder is considered out of the question if the operation is performed in this way, and the after-treatment of the two minute wounds is of the simplest description.—*Zentralblatt für Gynäkologie.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

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PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, May 12, 1906.

THE REVERSAL OF THE CIRCULATORY CURRENT.

AN announcement somewhat startling in character is contained in a recent paper by A. Carrel and C. C. Guthrie in the *Annals of Surgery* for February, 1906, in which it is claimed that the circulatory current in a limb may be successfully reversed by operative means, so that the red blood flows through the veins in a direction opposite to the normal venous circulation and the darker venous blood returns to the heart through the arteries. This, according to the writers, has been accomplished experimentally in dogs by cutting the main artery and vein of a limb and then uniting the central end of the artery to the peripheral end of the vein and the peripheral end of the artery to the central end of the vein. Thus, from a functional point of view at least, the artery becomes a vein and the vein an artery. These experiments are undertaken for the purpose of studying the changes which would take place in the member after reversal, and of possibly applying the method in a practical manner for the prevention of gangrene in cases in which the arteries are incapable of carrying the red blood to the capillaries.

Attempts of a similar character have been made before, but were never completely successful, and the results attained by Carrel and Guthrie are therefore of considerable interest. There are three physical obstacles which oppose the flow of the red blood through the veins in a direction the reverse of the normal, namely the valves, the numerous anastomosing branches which decrease the blood pressure by increasing the area of the cross section of the vessels, and lastly the resistance of the capillaries. Experiments made in living dogs, for the details of which reference must be made to the original paper, show, however, that these difficulties may be overcome, for, although the valves prevent at first a reversal of the current in the veins, they give way in a short time and the red blood flows through the veins as far as the capillaries, through which it also finally passes, and the arteries become filled with the darker venous blood. This circulatory phenomenon has been found to become established about three hours after operation—really a very brief period. A lateral anastomosis between an artery and a vein, without occluding the trunk of either vessel, was also made and it was found that a large volume of the red blood returned to the heart through the central end of the vein almost immediately. The peripheral portions of the vein and its collaterals were distended, but the valves were not forced and the red blood did not circulate through these vessels at first.

These experiments seem to show that the reversal of the circulation, in a dog's limb at least, is rendered possible by the establishment of an end-to-end arteriovenous anastomosis. Nothing has thus far been done, however, with reference to the permanent results of these operations, but these are promised and will be awaited with interest. If the procedure is to be applied as a surgical measure for the relief of gangrene in a limb where there has occurred an obliteration of the arteries, another factor enters into the calculation, namely the nutrition of the tissues of the member. Whether this can be carried on equally well by the blood, even if it flow in a direction the reverse of normal, should be made the basis of further experiments.

THE PATHOLOGY OF GENERAL PARALYSIS OF THE INSANE.

THE statement has been made that general paralysis of the insane is now on the increase, and this seems to be borne out by statistics. We know very little, however, of the etiology and pathogenesis of this disease. A growing dissatisfaction with the syphilitic hypothesis has become evident during recent years, although it still remains the favorite, and efforts are now being made to solve the problem from other points of view. Among these may be mentioned the researches made in the Scottish asylums for the insane, which are referred to in a recent article by W. F. Robertson in the *Edinburgh Medical Journal* for March, 1906. The writer alludes to the observations made by Bruce on temperature and leucocytosis, in which it was shown that in this class of cases febrile attacks occur every two or three weeks and that these attacks are accompanied by leucocytosis. In fact, in the third stage of the disease the leucocytosis may occur without any rise of temperature. He concluded from these observations that the general paralysis was due directly to poisoning by bacterial toxins, the absorption taking place through the gastric and intestinal mucous membrane. Other writers also came to the same conclusions, and Robertson, in conjunction with certain associates, commenced a bacteriological investigation relating to this point. They found that in cases of general paralysis a diphtheroid bacillus was particularly prominent in the mucous membrane of the gastrointestinal and respiratory tracts and that a similar organism could frequently be isolated from the brain. These findings seemed to confirm the idea of a chronic bacterial intoxication, and further experiments made in animals showed that certain symptoms resembling those of general paralysis followed the inoculation of cultures of the diphtheroid bacilli obtained from patients afflicted with this same disease. Robertson even goes further and states that a certain degree of immunity seems to be acquired by the paralytic against these bacilli, as the result of which he is able to combat them, notwithstanding the otherwise defective local and general powers of resistance. He claims also that the bacillus is conveyed from one individual to another by contagion, but if the mucous membrane of the organism is healthy, no further proliferation or invasion results. A preliminary weakening of the local and general defenses is evidently necessary, and of all the forces that can produce this condition there are three, according to the writer, which seem to

have special importance. These are the pathogenic agent of syphilis, alcohol, and nitrogenous foods used in excess. Local invasion of the bacilli through the intestine or the bronchi marks the beginning of a paralytic toxemia; this is manifested clinically by a "congestive attack," and at this time the bacilli are claimed to be found in great numbers in the blood stream in the neighborhood of the infective foci. In cases where the attack is repelled by the leucocytes, the clinical effect is a "remission," but in the end the defensive forces are overcome and then there is a fatal congestive attack.

Robertson states that there is evidence that the paralytic defends himself, and often with prolonged success, by manufacturing specific bacteriolytic antibodies. The suggestion seems opportune, therefore, that an attempt be made to produce such antibodies in lower animals and then to employ them as therapeutic agents. Such a method of treatment is to be given a trial in one of the Edinburgh asylums, and the results will be awaited with great interest by the profession.

THE TREATMENT OF RINGWORM IN SCHOOL CHILDREN.

Ringworm may be looked upon essentially as a school disease. Not only is it highly contagious, but likewise lingering and rebellious to treatment. It is serious in the sense that it frequently causes an interruption to education, and for this reason it should always be carefully and thoroughly treated when detected. A large number of "cures" for ringworm have been proposed, but their very multiplicity may be regarded in a way as an evidence of failure. The discovery that the disease was due to the growth of a microscopic fungus stimulated the search for a cure in a new direction, but even here success has been by no means complete. It is possible that further studies on the growth of this fungus on artificial culture media, may lead to the production of an antitoxin or other specific means of destroying ringworm when it has effected a lodgment on the human scalp. But thus far nothing definite has been accomplished in this line of endeavor.

Treatment of the disease may be roughly divided into direct and indirect. The former aims at destroying the fungus by the application of antiseptic drugs, the latter trusts to setting up an inflammatory reaction in the neighboring tissues. The great obstacle to a ready cure is undoubtedly the mechanical difficulty of reaching the fungus after it has penetrated the hair follicles, and of the many remedies proposed, including the *x*-rays, none has been uniformly successful. An interesting departure in the treatment of ringworm has been made recently by Dr. David Walch of London (*The Medical Press*). His method may be briefly defined as consisting of a procedure by which the scalp of the affected child is isolated instead of the child itself. In this way the latter is not prevented from attending school. Walch achieves this by encasing the shaved scalp with a film of collodion or other impervious substance. Thus protected, it is claimed that the child may go about without spreading the disease. Every week or ten days the film is peeled off and this effects a complete depilation. Before the film is applied, however, the scalp is thoroughly cleansed and a germicide applied, such as formalin or sulphurous acid. It is then exposed to the *x*-rays for about ten minutes, which aids in the depilatory process by loosening the hair bulbs.

There are many advantages claimed for the method, and among them is the shortening of the length of time required for treatment. It is advisable, however, that the procedure be conducted at a central station, if necessary to apply it to a large number of children, and this should be supplemented by a skilled and systematic school inspection. Without this aid it would be impossible to detect cases, to treat them properly, or to say when the disease is cured. The disease is largely prevalent among our own immigrant population, and its spread among the children of the public schools calls for thorough and decisive methods of treatment. The procedure recommended by the English writer seems as rational as it is simple, and certainly is deserving of trial.

A BLOW TO PHARMACEUTICAL REFORM.

It is a great pity that so excellent a cause as that of pharmaceutical reform should be so largely in the hands of intemperate and indiscreet advocates. The Medical Record has more than once pointed out the inexpediency, if not the injustice, of classing the manufacturers of proprietary remedies, even of those whose formulæ are secret, which are advertised solely to the medical profession, with the conscienceless makers of "patent medicines," so-called, which contain cocaine, alcohol, opium, or some other enslaving poison, and are sold to an ignorant public to its physical and moral ruin. But our protests have only called forth abusive comment from the noisiest and cheapest of the "reformers," who, wilfully or stupidly missing the point entirely, ask if both classes of preparatons are not "secret" nostrums, and seem to think that their interrogation is an unanswerable argument.

The Medical Record has repeatedly declared itself in favor of the publication of the formulæ of all proprietary remedies offered to the medical profession, but it recognizes that there are honest and honorable manufacturers of proprietary remedies who do not see the force of this contention, and it believes that persuasion is more effective than vituperation as a means of bringing them to a right way of thinking and acting. It has also hitherto given the reformers credit for honesty of purpose, but its faith has received a rude shock recently. In a letter published in a recent issue of the *Nashville Journal of Medicine and Surgery* by Mr. Hallberg, a member of the Council of Pharmacy and Chemistry of the American Medical Association, the editor is called sharply to account for a note in a previous issue of his journal. The offending matter was a quotation from a physician, who said: "I endorse worthy proprietaries, but I most heartily condemn the great tendency of the 'half-baked,' so-called manufacturing 'chemist' to foist upon the profession and public cheap imitations of standard preparations." To the casual reader this statement sounds orthodox enough, but it did not please Mr. Hallberg, who wrote (italics ours): "As a matter of fact the majority of the 'worthy proprietaries' are the products of physicians' prescriptions which have been appropriated usually by an ex-drummer or adver-

tising man, and rarely ever a medical man or even a druggist. These fellows who, through unlimited gall and self-assurance, have been exploiting the medical profession, often afterward turning to the public, are not even 'half-baked' chemists; they have never been near the fire at all; they pursue frenzied chemistry simply in pursuit of tainted money. *There is no established proprietary medicine that cannot be secured—as a rule far superior in quality—of the manufacturing pharmacists and chemists,* and instead of defending the manufacturers of specialties and charging the real manufacturing pharmacists and chemists with making cheap imitations of standard preparations, the physician should make it his business to find out that any preparations worth using can be had by [from?] the regularly established manufacturers, and, sometimes, also by [from?] retail pharmacists, *which are more true to the formula and composition than that made by those who originally exploited the article.*

This is a most astounding admission and one which we cannot believe would be endorsed by the *Journal of the American Medical Association* or by its Council on Pharmacy and Chemistry. If the object of persuading or coercing the manufacturers of proprietary remedies to reveal their formulæ is simply to enable the large manufacturing firms to make the same preparations and offer them to the profession with the prestige of a larger and longer-established house behind them, then the sooner the reformers reform the Council on Pharmacy and Chemistry out of existence the better. We cannot believe, however, that Mr. Hallberg speaks for the Council, and we hope to see a prompt official disavowal of his damaging utterance. If this is not speedily forthcoming, the Council will be discredited in the opinion of all honorable members of the profession who believe in "the square deal." No physician is compelled to prescribe a secret remedy against his will, but every one has a feeling for the under dog, and if it once becomes known that the agitation in favor of publicity is conducted in the interests of certain manufacturing chemists, the cause of pharmaceutical reform will be put back a quarter of a century.

Acute Nephritis and Chronic Tonsillar Hypertrophy.

Children with chronic tonsillar hypertrophy are apt to be the subject of a number of pathological conditions, and among them has been noted the appearance without evident exciting cause of an acute nephritis with its usual complement of symptoms—anasarca, albuminuria, casts in the urine, visual disturbances, and perhaps convulsions. Hougardy (*Le Scalpel,* 1905, No. 25) calls attention to the fact that in many of these cases an examination of the oral and buccal cavities will show the presence of chronically enlarged tonsils. Traces of recent infection are usually not in evidence, although the deep crypts may readily hide them. It may be noted in passing that an angina in such children often runs its course without being discovered. The writer reports six cases in which the association between the two conditions referred to was noted, and in one he was able to demonstrate conclusively the good effects of a tonsillectomy on the course of the nephritis. It seems appropriate, therefore, in the presence of the latter condition, to examine the throats of such children for the presence of hypertrophied tonsils, and as a precautionary measure to institute local prophylactic measures. As a final resort the question of operative interference may also be thought of. This observation merely constitutes another argument against leaving hypertrophied tonsils to be cared for by nature, as so many of the laity and some members of the profession itself believe it best to do. Their presence has been proved to be the cause of a number of conditions deleterious to the health of the child, and the possibility suggested by Hougardy is simply another link in the chain of condemnatory evidence.

The Seminal Secretion as a Source of Albuminuria.

Every physician has been frequently confronted with the puzzling occurrence of traces of albumin in the urine of patients in whom there is absolutely no sign of a renal affection. Some of these patients are young men, apparently in excellent health, who perhaps come to the practitioner because they happen to have been refused a life insurance policy. At first in such cases we are apt to suspect cyclic albuminuria, but a closer investigation, and especially a chemical study of the isolated proteids obtainable in these urines, show that in the majority of cases the albuminuria is due to an admixture of seminal fluid, or of minute amounts of secretion from the genital tract. A history of genitourinary infection or of disease or disturbance connected with the seminal apparatus will often be disclosed in these cases upon inquiry. While the suspicion of an admixture of seminal fluid has been expressed by more than one writer in commenting upon the albuminurias of healthy young men, a scientific proof of the origin of the proteid found in the urine in these cases was lacking until in a very recent article (*Russkiĭ Vrach,* No. 7, 1906) Slovtsoff reported that he was able to isolate from the urine of such persons an albumose similar to that which occurs in seminal fluid. For the precipitation of this peculiar proteid, Slovtsoff recommends a solution of sulphosalicylic acid, and notes that the precipitate so formed is soluble on the application of gentle heat. The discovery of spermatozoa in the urinary sediment would, of course, give a clue to the origin of the albuminuria, but unfortunately these elements are not always to be found in instances of this sort.

The Mode of Transmission of Leprosy.

The ability of the itch mite to serve as the medium of transport of the bacillus of leprosy from one person to another has apparently been demonstrated with sufficient thoroughness to render it an assured fact. In this connection the observations of Mugliston in Penang (Medical Record, August 26, 1905, page 343) and of Bassewitz (*Ibid.*, October 28, 1905, page 711) seem conclusive enough, and it has naturally occurred to leprologists to push the inquiry further and to try to saddle a similar responsibility on other insects. Until recently efforts in this direction have met with only indifferent success, but Dr. W. J. Goodhue, Medical Superintendent of the Leper Colony at Molokai, after several years of investigation feels convinced that both the bedbug and the mosquito *Culex pungens* can harbor in their bodies the bacillus of Hansen. Details in regard to the investigation and particularly as to the organs of the insects in which the parasites were detected are still lacking, and it must be remembered

that the mere demonstration of an organism in, say, the alimentary canal, of an insect feeding on the blood of infected persons does not *per se* justify the conclusion that inoculation is effected by this agency. If Dr. Goodhue can supply the links still missing in the chain of evidence, the prophylaxis of leprosy will at a single stroke be greatly simplified.

News of the Week.

Professor Alfred Dührssen of Berlin will be the guest of the German Medical Society at its meeting on May 15, in the hall of the Academy of Medicine. He will read a paper on "Modern Problems in Obstetrics and Gynecology." The discussion will be in both German and English, as Prof. Dührssen speaks our tongue well.

Monument to Dr. Skene.—At the unveiling of the memorial bust of the late Dr. Alexander J. C. Skene in Brooklyn on May 5, an address on Skene's life was delivered by Dr. A. Jacoby. The bust, which is of bronze, three times life size, is the work of J. Massey Rhind, and was erected by private subscription under the auspices of the Skene Monument Association. It is placed on one of the mounds west of the plaza at the main entrance to Prospect Park, Brooklyn.

Health Department Boat Tested.—The new ferry boat, *Riverside,* of the Health Department was tested for seaworthiness, etc., in a four-mile run on May 3, and found satisfactory.

Gasoline in the Sewers.—The Board of Aldermen on May 1 unanimously passed an ordinance forbidding the turning of explosive gases or liquids, such as gasoline waste, into the sewers. and imposing a fine of $50 for violation of its provisions.

Meningitis on an Italian Liner.—The Italian steamship *Il Piemonte,* from Naples and Palermo, was detained at quarantine owing to the occurrence on board during the voyage of nine cases of what turned out to be cerebrospinal meningitis. Three of the patients died on board and were buried at sea. Those still ill were removed to Swinburne Island for treatment.

For More Parks.—The Board of Estimate on May 4 authorized the issue of $1,749,930 bonds for park improvements. Of this amount, Manhattan and Richmond will get $649,000, Brooklyn and Queens $694,930, and the Bronx $406,000. While these allowances are much smaller than the sums asked for by the Park Commissioners, it is stated that it is the intention of the Board of Estimate to spend between $3,000,000 and $4,000,000 for opening new small parks and playgrounds in addition to meeting the cost of extending Riverside Drive, which is estimated at $5,000,000, and will be provided for by a special appropriation.

Changes of Address.—Dr. W. B. Pritchard of this city has removed to 142 West 72d street. Dr. J. H. Pryor has returned to Buffalo and will reside at 26 Linwood avenue. Dr. S. Henry Dessau of New Rochelle has removed to 156 Meadow Lane. Dr. Alexander Spingarn of Brooklyn, N. Y., has removed to 623 Willoughby avenue.

The Stevens Patent Medicine Bill.—The defeat of the Stevens-Wainwright bill, compelling the nostrum makers to print some information concerning the composition of their products on the labels of the bottles was effected on May 3, apparently more through the intervention of those in favor of such legislation than through the machinations of its opponents. By the addition of amendments not materially altering the spirit of the measure but tending to make it somewhat less sweeping in its provisions, the fate of the bill was sealed owing to the necessity for reprinting.

Lectures on Hydrotherapy.—A letter from Dr. William H. King, dean of the New York Homeopathic Medical College, in regard to the announcement in the MEDICAL RECORD of April 28, 1906, relating to a course of lectures on hydrotherapy to be delivered at Columbia University, states that lectures on this subject have been given for several years at the former institution by Dr. W. H. Dieffenbach.

The Smoke Nuisance.—The Health Commissioner's efforts to suppress the smoke nuisance in this city have begun to bear fruit. Nineteen cases for violation of the smoke ordinance are awaiting trial in the Court of Special Sessions, and one man, the chief engineer of the Edison Company, has been found guilty. Sentence is deferred until May 21. The maximum penalty is a fine of $500, or imprisonment for one year. Most of those arrested for smoke ordinance violations have pleaded not guilty, but in one instance the proprietors of a soap factory pleaded guilty and asked for clemency on the ground that a smoke consumer had been installed, so that the nuisance no longer existed. Decision was reserved and the case postponed.

Jewish Hospital for Deformities and Joint Diseases.—The board of directors of this institution on May 6 took possession of their new building at 1917 Madison avenue. The hospital was incorporated last October and it is stated that it will be a non-sectarian institution. It is expected that the hospital will be ready for the reception of patients before the end of June. The medical director is Dr. Henry W. Frauenthal.

Transfer of the Newberry Medical Library.—Arrangements have been completed for the transfer of the medical department of the Newberry Library, including the Senn Collection, to the ownership and management of the John Crerar Library. The collection cannot be accommodated in the temporary quarters of the John Crerar Library, so it will remain in its present location until a permanent building is completed.

New Hospital for Ravenswood, Ill.—The trustees of Ravenswood Hospital recently purchased a tract of land at Winchester and Wilson avenues, 192 by 152 feet, on which it is said a modern hospital will be erected.

Illinois Training School for Nurses.—The silver anniversary of the founding of the Illinois Training School for Nurses was celebrated recently in the Fine Arts Building. Ten members of the first graduating class and nine members of the first Board of Managers were present. In the twenty-five years the training school has been in existence, 825 women have taken the course. The alumnæ of the school have under consideration plans for building a home to be modeled in the main after the one in connection with Bellevue Hospital, New York. It will include living rooms, rest and recreation rooms, and a café. The cost will be approximately $50,000. Several tentative offers of aid have been made by wealthy men and women who are interested in the work.

A Fossilizing Climate.—The official report of Dr. T. L. Magee, the health officer of San Diego,

Cal., for the month of March, seems to confirm the claims made for the healthfulness of that city. Although an epidemic of measles had prevailed among the children during that month and the one preceding it, the average age of the decedents was sixty-four years. There were in all sixty-seven deaths, or 11.1 per thousand of population per annum. Nearly one hundred cases of measles had been reported, without a death directly attributable to the disease. There was one death from bronchitis and two from pneumonia in children. Only nine persons died under the age of thirty years.

San Francisco Institutions.—The reports from San Francisco state that while most of the private hospitals and some of the downtown institutions of larger size were destroyed by the fire which followed the earthquake, many others escaped. The Cooper Medical College and the Lane Hospital connected with it were only slightly damaged and escaped from the fire. The medical department of the University of California and the Children's Hospital were not seriously damaged.

Typhoid Fever at San Francisco.—A dispatch to the *Evening Sun* from Oakland states that there is no doubt that typhoid fever has broken out in the refugee camp at the Presidio, though the actual number of cases is uncertain. Something like twenty cases are believed to have been noted, though there is so much intestinal trouble from one cause or another that it is not possible to arrive at a positive diagnosis without more careful tests than it has been practicable yet to make.

Association of American Physicians.—The twenty-first annual meeting of this association will be held in the New Willard Hotel, Washington, D. C., May 15 and 16, 1906. The president and the council request that an oral abstract of each paper, prepared beforehand, to facilitate its delivery, be alone presented at the meeting. It is intended that, hereafter, no paper shall be read in full before the association.

National Association for the Prevention of Tuberculosis.—This society will hold its second annual meeting at Washington, D. C., in the New Willard Hotel, May 16 to 18, 1906. The secretary is Dr. Henry Barton Jacobs, 11 Mt. Vernon Place, West, Baltimore, Md., and the executive secretary is Mr. Livingston Farrand, United Charities Building, 105 East Twenty-second Street, New York.

American Gynecological Society.—The thirty-first annual meeting of this society will be held at Hot Springs, Va., on May 22-24, 1906, under the presidency of Dr. Richard B. Maury. There are thirty-four titles on the program, and a number of entertainments are promised. All desired information regarding the meeting, to which the profession in general is invited, may be obtained from the secretary, Dr. J. Riddle Goffe, 28 West Forty-sixth Street, New York City.

Quarantine Regulations.—The quarantine season for coasting vessels from parts south of Cape Henlopen began on May 1, 1906. The Sanitary Board of Havana has recommended that a quarantine be established against all the Gulf ports of the United States except Key West, Tampa, and Pensacola, on the ground that they have not accepted the regulations of the United States Marine Hospital Service.

Berkshire (Mass.) District Medical Society.—At the annual meeting of this society, held in Pittsfield on April 26, these officers were elected: *President,* Dr. A. B. Withington of Pittsfield; *Vice-President,* Dr. G. L. Rice of North Adams; *Recording Secretary,* Dr. I. S. F. Dodd of Pittsfield; *Treasurer,* Dr. Paddock of Pittsfield.

The Polk County (Ark.) Medical Society has been organized with these officers: *President,* Dr. W. P. Parks; *Vice-President,* Dr. P. R. Watkins; *Secretary,* Dr. C. C. Gunnels; *Treasurer,* Dr. G. P. Dunman.

Wholesale Vaccination in Philadelphia.—As the result of the occurrence of two cases of smallpox in the negro and Italian quarters of Philadelphia, a district of forty-five squares was quarantined for a number of hours on May 6 and during this time about 20,000 people were examined and 4,000 of them vaccinated. The work required the services of 500 policemen and fifty physicians.

Arizona State Medical Association.—The next meeting of this society will be held in Bisbee. The following officers were elected at the recent annual meeting at Phœnix: *President,* Dr. O. E. Plath; *Vice-Presidents,* Dr. W. V. Whitmore and Dr. A. C. Hickland; *Secretary,* Dr. E. N. Looney; *Treasurer,* Dr. R. F. Palmer.

Texas State Medical Association.—This association at its annual meeting held at Fort Worth on April 26, elected these officers: *President,* Dr. G. B. Foscue of Waco; *Vice-Presidents,* Drs. F. P. Miller, S. Wier, and A. B. Small; *Secretary,* Dr. I. C. Chase; *Treasurer,* Dr. R. F. Miller; the latter two being reelections. Mineral Wells was selected as the place for the next meeting.

Behring's Tuberculosis "Cure."—Consul-General Thackara of Boston reports that he has interrogated Prof. v. Behring regarding the latter's serum remedy for tuberculosis, and has been informed that he is not in a position at this time to furnish his preparation for the treatment of human beings until the experiments which he is now making on animals have been completely terminated, which will probably be not until the end of the present year. The date originally set for the giving of the discovery to the profession was August, 1906.

Short Skirts in Germany.—Some time ago the Police Department of Nordhausen, a city of Prussian Saxony, issued ordinances forbidding women whose dress skirts touched the ground to walk on the main square of the city or the adjacent streets. The measure has now been extended so that it covers all parts of the city, and to appear on any street with a trailing skirt renders the wearer liable to a fine of $7.50. It is stated in the text of the ordinance that it is "for the protection of health and for the prevention of tainting the air with dust."

National Association U. S. Pension Examining Surgeons.—The annual convention of this association, which now has a membership of more than six hundred, will be held at the New American Hotel, in Boston, Mass., on Monday and Tuesday, June 4 and 5, beginning at 10 o'clock on Monday morning. The secretary of the association is Dr. Porter Farley, Rochester, N. Y.

The "Journal of Abnormal Pyschology."—The first number of this bimonthly publication promises well for its future. The journal is meant to bridge the gap between medicine and psychology, and is primarily intended for the publication of articles embodying clinical and laboratory researches in abnormal mental phenomena as well as observations in the field of psychiatry proper.

Dr. Morton Prince is editor, and his associates are Drs. Hugo Münsterberg, James J. Putnam, August Hoch, Boris Sidis, Charles L. Dana, and Adolf Meyer.

A Lecture on the Medical Conduct of the Russo-Japanese War will be given at the Post-Graduate Medical School on Friday, May 18, at 8.30 P.M., by Captain Charles Lynch, Surgeon U. S. A., late medical attaché with the Japanese forces in Manchuria.

Action Against the Drug Trust.—Attorney-General Moody has made public a statement announcing that the government has filed in the Indiana United States Circuit Court a petition for an injunction against what is commonly known as the drug trust of the United States. The defendants named in the bill, it is alleged, have voluntarily combined together to control the prices at which proprietary medicines and drugs shall be sold to the consumer through the retail druggists, in violation of the Sherman anti-trust law. The parties to the combination include the Proprietary Association of America, the National Wholesale Druggists' Association, and the National Association of Druggists.

Obituary Notes.— Dr. ADRIAN D. WILLIAMS of Brooklyn died on May 4, at the age of thirty years. He served as army surgeon during the Spanish-American War and also in the Philippines.

Dr. WILLIAM J. FARLEY of Dallas, Ore., died on April 23, of heart disease, from which he had suffered for a number of years. He was a native of Pope County and was fifty-five years of age. He was graduated from Willamette University.

Dr. JOHN C. PEGRAM, JR., of Providence, R. I., died on April 26, in Brookline, Mass., at the age of thirty-four years. He was graduated from Brown University in 1892, and received his medical degree from Harvard University. At the time of his death he was visiting surgeon at the Rhode Island Hospital.

Dr. SAMPSON POPE of Newberry, S. C., died suddenly on April 22, at the age of seventy years. Dr. Pope took an active part in the redemption of South Carolina in 1876, and served for a number of years in the Legislature. He served in the Confederate Army through the entire war, and had practised medicine in Newberry since that time.

Dr. JOHN M. LAWSON of Union, S. C., died of pneumonia on April 24. He was graduated from the South Carolina Medical College and practised in Union, S. C., until the outbreak of the Spanish-American War, when he was appointed assistant surgeon in the army and served through the war.

Dr. CHARLES L. FISKE of Greenfield, Mass., died on April 21, at the age of seventy-five years. He was graduated from the Cincinnati Medical College and had practised in Greenfield for many years.

Dr. T. G. HERRICK of Newport, N. H., died on April 23, at the age of thirty-one years. He was graduated from the Harvard Medical School in 1898, and practised for some years in Brockton, Mass., until compelled to give up work on account of ill health.

Dr. J. COPLIN STINSON of San Francisco, former Commissioner of Public Health, was killed by the collapse of the hotel in which he resided, on the morning of the great earthquake, April 18.

Dr. CHARLES F. TAGGART of Los Angeles was accidentally killed at San Francisco, Sunday, April 22. He was born at Sparta, Ill., in 1862. Dr. Taggart had gone to San Francisco to attend the meeting of the State Medical Society, and escaped injury in the accident which befell the city. In some manner, however, he dropped a revolver while dressing and was instantly killed.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

SAN FRANCISCO—PARLIAMENTARY; VACCINATION, VIVISECTION, SALE OF POISONS—THE NORMAL SECRET TREATMENT—METRITIS—ABDOMINAL PREGNANCY—SIR T. BROWN'S SKULL—PROF. SIMPSON—FRIENDLY SOCIETIES' ALLIANCE AGAINST DOCTORS—INQUESTS—OBITUARY.

LONDON, April 20, 1906.

THE awful calamity at San Francisco has hung over all our thoughts like a pall since the news reached us yesterday morning. Not that we talk much of it; everyone mentions it and then with a sigh seems to relapse into silence or turn for relief to what demands instant attention, for the work of the world must be done, even under the shadow of such a catastrophe. Our hearts go out to our oversea brothers in their sorrow with a sympathy "too deep for words." It is a national calamity, for are we not of one blood? The one point on which I like to dwell is the magnificent courage and energy with which you rose to the occasion, determined to do what man could do for fellow-man—courage and energy worthy of the race.

Oppressed by this burden, the medical matters of the week seem too trivial to divert one's thoughts, but I will gather a few fragmentary items for you.

The report of the Jenner Society refers to the possibilities of parliamentary action in reference to vaccination. The Act of 1898 was confessedly a mere experiment and was only to be in force five years, but was prolonged for another year. It is clear, therefore, that some action ought to be taken during the present session. The Jenner Society's report suggests that the government cannot be supposed to shirk their responsibility by letting the act drop altogether, but considering the want of backbone they have already exhibited, I do not feel much confidence that they will rise to the occasion. Indeed the report in question admits that time for full discussion cannot be secured this session, and says it would be reasonable to keep the act alive for another year, with an explicit promise of legislation in 1907. The reluctance of the government to commit themselves may be judged from an answer to a question in the House as to whether teachers might be excused from being vaccinated. The Minister of Education replied that it had always been a condition of appointment, though in certain districts it had restricted the supply of candidates. He was not prepared to make a definite statement, but was considering the possibility of throwing the responsibility of relaxing the vaccination provisions on the local authorities. Is it not a lamentable want of backbone for the "strongest government of modern times" thus to think of shirking its responsibility? But this is not the only instance of pliability, which gives color to the opposition's statements that the Cabinet is hopelessly divided on numerous questions. It is announced that an inquiry into the working of the Experiments on Animals Act is also to be held and the anti-vacs are jubilant over the matter. The form the inquiry will take is not yet decided, but scientific investigators are satisfied that it can result only in proof that no case of abuse can be established, and an impartial report will serve to neutralize some of the reckless falsehoods circulated by agitators.

Yet another parliamentary incident looks like readiness to relax restrictive legislation at the bidding of any "interest."

The Poisons and Pharmacy Bill introduced by Lord Crewe proposes to authorize local authorities to license such persons as they please to deal in certain poisons, *e. g.* insecticides, weed killers, sheep dipping preparations. This, it is said, is on the demand of florists, nurserymen and farmers and, of course, it is supported by the manufacturers of such preparations. The slight inconvenience of a few persons who have not a registered chemist within a few doors is to be the excuse for encouraging every petty sundry shop to lay in a stock of poisons among their household requisites. There is a clause restricting somewhat the sale of mineral acids, but not limiting their distribution to pharmacists or registered chemists.

Mr. Punch has long been known to discourage quackery, and it is, therefore, somewhat disappointing to see the name of his new editor figuring among the promoters of a "Normal Treatment Association," founded to exploit a so-called cure for inebriety and for the drug habit. This wonderful "cure" is, of course, a secret as to its composition, and yet we are asked to believe that no pecuniary benefit is derived from its sale. Still the new association proposes to supply it at a reduced price! It is only in the nature of things that a clergyman should be a leading spirit in a society of the kind and should be ready to testify to the efficacy of a "cure" of the composition of which he knows nothing, just as so many clerics seem to think their training qualifies them to pronounce on scientific and medical questions. Accordingly the Rev. H. B. Chapman takes the

secretaryship of this new society for exploiting a quack medicine and is supported on the committee by church dignitaries, to wit, the Primate of Ireland, the Bishop of Southwark, the Bishop of Chichester, and Canon Scott Holland.

A goodly array certainly of clerical authority to set against medical science and observation! But though they are, perhaps, not likely to contribute much to our knowledge of inebriety or its cure, they should be qualified to investigate the truth of the reverend secretary's statement at a recent meeting, that he had tested the treatment on 230 patients, of whom 220 were cured!

Dr. A. W. Addinsell read a paper at the Obstetrical Society on the 4th inst., on "Infective Metritis," which he regarded as originating in the endometrium as an inflammatory process which extended into the muscular wall. There was a history of infection following childbirth, miscarriage, gonorrhea or local interference, but no gross lesion such as fibromata or malignant disease. Persistent, excessive, uncontrollable hemorrhage was the feature which determined hysterectomy. Three stages were described: In the first there was perivascular inflammation, small round-celled proliferation encroaching along the line of vessels and invading the intermuscular connective tissue; the proliferation also surrounding the deepest mucus glands in the muscle wall. The second stage was the condition described as "fibrosis" by Bland-Sutton, and "arteriosclerosis" by Palmer Findley. In the third stage the fibrous tissue had degenerated, there was increased vascularity, and it was difficult to make out any muscular tissue. After all remedies had failed hysterectomy had to be performed.

Dr. Blacker said several conditions gave rise to intractable hemorrhage. Presenility and childbearing had to be considered. He did not think it was proved that these cases were due to infection. He believed steaming of the uterus was a most valuable remedy and should always be tried before resorting to operation.

Dr. Griffith did not favor steaming, but he thought cases of intractable hemorhage so severe as to demand hysterectomy were very rare, except cases of cancer and fibroids.

Dr. Eden did not consider the changes inflammatory. There was great difficulty in interpreting histological details because no precise study had been made of the uterine tissues at the different stages of the fertile period of life.

An account was afterwards read by Dr. E. J. Maclean of a case of abdominal pregnancy in which the fetus was removed in February last, six months after spurious labor at term, the patient, aged 34, not having previously been pregnant. The peritoneal sac was completely shut off from that of the fetus and was not opened during the operation, since which the patient's general health has much improved.

The Governors of the Norfolk and Norwich Hospital have decided to return the skull of Sir Thomas Browne to the Church of St. Peter Mancroft. Sir Peter Eade says the skull was taken away when the tomb was being repaired, sixty or seventy years ago. Later it was deposited in the hospital museum, where it has remained many years. A cast of the skull is to be taken, placed in a cabinet, and presented to Professor Osler.

Professor W. J. Simpson, of King's College, has gone to Singapore to inquire into and report on its sanitary condition for the government.

The Friendly Societies' Medical Alliance, which describes itself as a defensive organization against what its members consider unfair attacks from medical men and medical councils, met at Cambridge, when an alderman welcomed the delegates on behalf of the corporation and told them working men had set an example to other classes in dealing with social problems. The tone adopted by the speakers may be judged by one, who said they must meet the attacks of the Medical Council and the efforts of medical men who were determined to smash their associations. So these workmen's clubs proclaim their determination to defeat any attempt of the doctors to combine. Truly combination is a fine weapon when one-sided.

It is many years since we have had so fine an Easter. Among the indications of this a soldier fell out in a march from Sydd to Dover on Saturday and died from heat-stroke the next morning. Good Friday achieved a record in London with sunshine all day and a temperature running up to 70° F.

At an inquest on Tuesday the Coroner said that during 1904 there were 3,327 suicides in England and Wales, 2,504 being males, giving a percentage of 22.65 per 100,000 of population in the case of males and 6.95 in that of females. He noted as a curious point that in 1904 there was a decrease in the number following on a continuous increase since 1858. There was a falling off between 1903 and 1904 of 161 cases.

Dr. Waldo, holding an inquest on a child who died from suffocation, said he had made a study of these cases for five years and concluded that much injustice had been done to mothers who were constantly said to overlay their infants when drunk. In no case had he found any evidence of this. It was overwork, not drink, which was the cause. The reason why so many of the cases occurred on the night of Saturday to Sunday was that the mother worked harder on Saturday and usually went to bed over-tired, and therefore slept heavily. He advocated the use of cots.

At an inquest on Saturday concerning the sudden death of a domestic servant, the doctor who had been called in said he found her dead on arriving, and at the postmortem he found she had suffered from heart disease and tight lacing, which had injured the liver. The Coroner, Dr. Waldo, asked if the effect of lacing was very marked. The reply was yes, the liver was forced in two, on which the Coroner said he had many cases of tight lacing, but this was very remarkable, for the pressure must have been very great to split the liver in two. Verdict, death from heart disease, rendered by pressure on the liver by corsets. One would like the doctor to have given an anatomical definition of "the liver forced in two."

Dr. Henry Alexander Gogarty, consulting physician to the Kent and Canterbury Hospital, died on Wednesday. He resigned the post of physician to the hospital in April, 1904, after nearly thirty years' service, and was naturally elected to the consulting office with heartiest thanks for his services to the institution and to the sick poor of the city and county. In younger days he was surgeon-major in the Rifle Brigade.

OUR PARIS LETTER.

(From Our Special Correspondent.)

THE PROPHYLAXIS OF TUBERCULOSIS—SERUM THERAPY IN TYPHOID FEVER—ANESTHESIA WITH SCOPOLAMINE, MORPHINE, AND CHLOROFORM—THE DIAGNOSIS OF UNILATERAL RENAL PYURIA—THE SURGICAL TREATMENT OF GALLSTONES—POSTOPERATIVE PULMONARY COMPLICATIONS—DEATH OF PROFESSOR COLIN.

PARIS, April 5, 1906.

THE discussion on the prophylaxis of tuberculosis has been continued at the Académie de Médecine, and nearly all the speakers have agreed on the necessity for greater accuracy in the medical statistics of tuberculosis. The question of the obligatory reporting of the disease and of the compulsory disinfection which it involves, is rather more complex. Two views are in evidence, the one, which is upheld by Prof. Landouzy, is to the effect that systematic disinfection must be enforced in connection with coughing and spitting tuberculous patients, which can be accomplished only through obligatory notification. The other side of the argument is taken by Chauffard, who believes that compulsory notification would involve complications of various sorts, and considers that notification and disinfection should be made obligatory only after deaths from tuberculosis. Robin points out the harrowing situation in which the poor tuberculous patient would find himself if reporting the disease were made compulsory. Such unfortunates would everywhere be treated as outcasts and be deprived of all opportunities for making a living.

Josias also addressed the Académie on the subject of serum therapy in typhoid fever. The speaker discussed the results which he had obtained in his service in the Hôpital Bretonneau during the past four years in the treatment of children with typhoid fever by means of the antityphoid serum furnished by Professor Chantemesse. Formerly he used cold baths exclusively, and the mortality was 10-12 per cent.; since the use of the serum had been begun in addition to the hydrotherapeutic measures the mortality had fallen to 3.8 per cent. in 200 cases. Very few complications had been observed and relapses also had been rare and of little severity. If, on the other hand, a comparison is made with the official figures of the typhoid mortality in the Hôpitaux d'Enfants de Paris, where serum therapy is not used, a mortality of 12.6 per cent. is found in 1,031 cases. Since his figures represent such a very low number of deaths, the mortality being two-thirds less than that of other hospitals, he expressed to the Académie the conclusions that the antityphoid serum of Chantemesse, properly used, is harmless, and that children having the disease who are treated from the beginning with the serum and with cold tubs have much better chances of recovery than are afforded by hydrotherapy alone.

Walther presented to the Société de Chirurgie a very interesting report on the observations of Psaltoff of Smyrna, relating to general anesthesia by means of the combination of scopolamine, morphine, and chloroform. Walther has employed this method with universal success and has used it in 326 cases. In twenty-one of these he used the scopolamine and morphine alone for uterine curettages, setting fractures, etc., without ever encountering the slightest complications. In the seventy-nine last cases the author one hour before the operation gave an injection of 0.001 of scopolamine, together with 0.01 of morphine. At present he uses only one-half this amount of scopolamine. He has

never observed the tendency to hemorrhage that has been reported when three injections were given before the anesthetization. No syncopal attacks have been encountered. The principal advantage of the scopolamine is that it diminishes the danger of syncope from chloroform by reducing the amount of the latter agent necessary to secure anesthesia. In particular he referred to cases in which the patients were corpulent, emphysematous, and had fatty hearts, in which he would never have dared to use chloroform alone, but in which he was able to operate without any trouble by means of the scopolamine morphine method. Since Walther uses the inhaler of Ricard for administering the anesthetic one might be tempted to suggest that these good results might be due to the apparatus rather than to the alkaloids. The author has stated, however, that the use of chloroform alone with the same inhaler is sometimes attended by complications which do not occur after the preliminary administration of the scopolamine morphine combination.

Hartmann has reported a case of unilateral, renal pyuria, diagnosticated by the endovesical separation of the urine from each kidney. This case, he said, was a good illustration of the necessity for not confining oneself only to the methods of the old school, but for employing, when the occasion offered, such procedures as the endovesical segregation of the urine from each ureter, which alone could clear up a doubtful diagnosis in some instances.

The subject of the surgical treatment of gallstones was discussed by Linossier before the Société Médicale des Hôpitaux. He considered three forms of the affection: latent cholelithiasis, which is frequent, but which does not require treatment, owing to the absence of symptoms. Cholelithiasis, with paroxysmal manifestations, or biliary colic. Medical treatment alone should be employed for biliary colic, if no evidence of infection is present, for the dangers of surgical intervention under these conditions are greater than those of the disease itself. Surgical treatment is indicated only in the face of some grave complication. Finally, cholelithiasis, with permanent symptoms, owing to infection of the biliary passages, and for this surgical aid is necessary, and should be promptly given. When a stone is present in the common duct, together with marked evidence of infection, the case must be regarded as a surgical emergency. Progressive aggravation of the symptoms in cases of gallstones, despite careful medical treatment, furnishes the indication for prompt operation.

Chantemesse described before the Société de l'Internat the results obtained by the use of his antityphoid serum. He stated that the serum certainly cut short the duration of the disease, and that the ordinary complications were rendered much less frequent. During five years he had used his serum regularly, both in private and in hospital practice, and had obtained very excellent results. The serum stimulates the lymphoid tissue and is intended to increase the defensive powers of the body.

Professor Le Dentu presented an interesting communication on the pulmonary complications following surgical operations. Such complications are observed on an average in from 4-8 per cent. of all cases, but the rate of morbidity is a very variable one. Five different types may be distinguished. First, tracheal bronchitis of mild degree, from which recovery is rapid. Second, stitch in the side, owing to a small area of congestion, which disappears quickly. Third, the acute type, in which the face in cyanotic, the sputum is abundant and purulent: there is marked asphyxia, the dyspnea is intense, and a fatal termination is often observed. Fourth, the form with remissions and relapses, and fifth, a slow, progressive type, in which both lungs are affected. Pulmonary involvement after operations is most often observed on the first to the fifth day, and is due usually to one of two causes, the anesthesia or infection. Accessory causes may be sought for in chilling, embolism, and in paralysis of the bronchial muscles; in addition, operations on the upper part of the thorax particularly predispose to pulmonary complications. The direct cause of pneumonia is usually the aspiration of mucus during the anesthesia. The difference between chloroform and ether in this respect is very great, and it appears that chloroform gives rise to twice as many complications as ether. Great care is necessary to avoid this possibility; the patients should be cared for and their wounds be dressed in such a manner as to avoid exposure to the cold, and the wards should be well warmed. The ether employed should be pure and only small amounts (150 grams) should be administered, and finally, care should be taken to secure antisepsis of the mouth and pharynx. The treatment of these conditions is that of all forms of pneumonia, an excellent means of relieving the congestion consisting in bleeding to the amount of 200 or 300 grams.

French medicine has suffered a great loss during this month in the death of Professor Colin, general medical inspector, and formerly president of the Académie de Médecine. Colin was at once an eminent military leader and an accomplished scientist. His contributions to medical literature are very numerous, one of the most important being his "Étude Clinique de Médecine Militaire." He was also well known for his "Traité des Fievres Intermittentes," and his "Traité des Fievres Epidemiques," in which he expressed the many observations he had made in the course of his military career and which gained for him the authority he attained in the Commission d'Hygiène du Département de la Seine, of which he was a member for several years.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

ROENTGEN-RAY TREATMENT OF LEPROSY—END OF THE CHOLERA VISITATION—SMALLPOX.

MANILA, P. I., March 21, 1906.

REFERRING to the two cases of leprosy which were successfully treated in Manila, with the *x*-ray, and which have been mentioned from time to time, the physician in charge of the San Lazaro Leper Hospital reports that both cases have relapsed, and that lepræ bacilli are again found in skin scrapings taken from the place at which lesions existed before. The question now arises as to whether these persons were reinfected from the outside, or whether some focus of leprosy within the patient again became active. It is quite possible that the two cases could have been reinfected from the outside, because they were kept at the San Lazaro Leper Hospital in the same quarters in which the regular leper inmates were kept. It was not deemed advisable to discharge them, because under those conditions the cases would have been lost sight of. At the same time it did not seem desirable to place them in clean quarters; so that on account of the lack of a suitable house, they were of necessity confined to the leper hospital. The theory of the cases being actually reinfected seems tenable, yet the recrudescence of the disease also appears to be highly probable. It is said that steps will be taken at once to settle this point. One of the patients remained well from June 6, 1905, until the first week in March, 1906, a period of about nine months. The case was examined microscopically at frequent intervals, but it was not until this latter date that any lepra bacilli could be detected. The other patient remained well from August 11, 1905, until about the middle of February. As soon as some necessary apparatus arrives from the United States the treatment will be resumed.

Manila has now been entirely free from cholera since February 21, and for several months before that no actual cases of cholera seemed to originate in the city; the cases that occurred were either contact cases or actual infections introduced from the provinces. From the beginning of the present outbreak, August 23, 1905, there have been 282 cases with 250 deaths in the city of Manila. In the provinces there have been 3,742 cases with 2,807 deaths. The disease still remains confined within a radius of not over sixty miles from Manila. Judging from its virulence, it appears remarkable that it has not spread further. The maritime quarantine which has been instituted has, so far, remained entirely effective. There seems to be considerable ground for the hope that has been expressed, that the disease will shortly be entirely eradicated. During the past two weeks the number of cases has been reduced from fifty and sixty per day to four or five per day.

Several weeks ago an outbreak occurred unexpectedly in the province of Laguna, in the town of Siniloan. A total of 141 cases, with 102 deaths, occurred within a period of about ten days. This town affords another instance of what may be accomplished with modern sanitary measures applied in a rational manner, even though the support of the population may not be as good as might be. The three physicians who were sent to Siniloan immediately commenced their work by having the stools thoroughly disinfected, dry earth closets installed, the people instructed to boil their drinking water, and the town mechanically cleansed. The result of this campaign was most remarkable. After two days had elapsed there was a steady decline in the number of cases. The first day there were eight, the second there were six, the next day there were three, and the fourth day there were no cases. The results obtained here have been the most satisfactory that have been recorded in the fight against cholera in the present outbreak.

There has been a gradual increase in the number of cases of smallpox in the various portions of the islands. Those provinces which have been thoroughly vaccinated have remained almost entirely free. A very good example of the efficacy of vaccination is afforded by two provinces that border upon Lake Laguna; one of them, Rizal, has been vaccinated and now reports only a few scattered cases, while the other province, La Laguna, which has not been vaccinated, has reported a great many cases. In the town

of Calamba alone there have been over 100 cases of smallpox within the past few weeks.

Old residents state that from time immemorial smallpox has made its appearance at about this season of the year, and continued until the commencement of the rainy season, which is about the middle of June. The ravages of the disease are reported as having been most terrible in character. In Manila it was almost a yearly custom to erect a large hospital to shelter those who were stricken. At the end of the season these buildings were burned.

As the vaccination of the inhabitants proceeds, epidemics are becoming less and less common, and also more mild in character. If the commission continues to make the necessary appropriations it will not be many more years before the Philippines are entirely free from smallpox.

Progress of Medical Science.

Boston Medical and Surgical Journal, May 3, 1906.

The Treatment of Joint Disease by Passive Congestion.—The technique advised by H. F. Hartwell consists in the application of two or three turns of an Esmarch bandage about the limb above the affected joint. It should be applied just firmly enough to constrict the thin-walled veins, but not enough to obstruct the arteries, or, if at all, only to a slight extent. The venous congestion thus induced extends not only through the superficial veins, but also to the deep ones. This is a condition which one can observe with a tourniquet which has been misapplied, when one sees increased hemorrhage from all the deep tissues, even the bone marrow. The marrow cannot be directly influenced by a constricting band on the surface, and it must be that the blood is thus seeking a way of return for itself in the wide channels there left open. The most marked effect of passive hyperemia is the lessening of pain in the affected joints, and there is a decided lessening of the infectious veins. No rule can be given in regard to the grade of joint tuberculosis which will react under congestion. Apparently advanced cases do well under this plan of treatment. Cases with well-advanced lung disease or with amyloid changes will do better with amputation. In acute or subacute inflammations the best results are obtained in gonorrheal joints, especially in those which tend to ankylosis or in which the inflammation leads to bad stiffness. Ten cases are detailed and several skiagrams accompany the papers.

The Influence of Dampness of Soil and Climate on the Diseases of Respiration.—According to H. J. Barnes, damp soil, if a factor in promoting respiratory diseases, must act through the changes it produces in the neighboring air. In warm or hot weather it may produce a fog. In winter there is so slight an evaporation from the soil as to cause no appreciable increase on the relative humidity. The rainfall, as indicative of a damp climate, is a worthless guide in the temperate zone, because a large precipitation may coincide with a low humidity and the reverse. Influenza occurs regardless of all seasonable or meteorological conditions. Tuberculosis can be contracted in dry as well as in damp climates. In general the conclusion to be drawn from the evidence at our command is that all the diseases of respiration are common enough, regardless of dry or damp soils, in hot or cold, moist or dry climates, at least to raise a doubt if these conditions have any influence whatsoever as a cause of the diseases of respiration; but that an excessively dry air, which nature nowhere provides, but which we create in winter by raising the temperature of air holding a very small volume of watery vapor, and thus lower the relative humidity to an extent sufficient to impair the resisting powers of the mucous membrane lining the respiratory tract, may be a factor in the increased prevalence of respiratory diseases in cold weather.

New York Medical Journal, April 28, 1906.

Clinical Examination of the Stools.—R. Weil notes that organic diseases manifest themselves either clearly or immediately by their products on the stools or indirectly by their effects on digestion. Clear evidence of disease is obtained from the presence of blood, pus, mucus, or enormous masses of epithelia, or from the absence or marked diminution of bile. In the same category may be placed gallstones, pancreatic calculi, enteroliths, parasites, and parastiic eggs. The significance of each of the foregoing products is considered from a clinical standpoint, and the tests for each are described. Functional diagnosis must take account of the motor activity of the gastroenteric tract, its chemism, and the causes of abnormal conditions. The author thinks that the test diet as laid down in German textbooks is entirely unadapted to American conditions. The diet he has adopted with success in a general hospital is as follows: Breakfast—oatmeal with milk and sugar, coffee with cream, one or two eggs; lunch—bouillon, one quarter pound of meat, mashed potatoes, toast with butter, and, as dessert, jelly, omelette, or ice cream; supper—two eggs, toast and butter, milk, and a dessert as at lunch. The diet provides ample nourishment and variety, includes all the necessary constituents in such form as to be easily identifiable in the feces, and the amounts given may be varied to suit the taste of the patient without producing a very marked alteration in the feces.

The Diagnosis of Affections Characterized by Abdominal Pain.—G. P. Laroque endeavors to present a classified list of the various affections characterized by abdominal pain, so grouping them as to facilitate an early diagnosis at the bedside. In a general way two main subdivisions can be recognized (1) the non-surgical, or at least the non-operative affections, and (2) the purely surgical conditions; that is, those positively calling for surgical judgment for their proper arrangement, and which may demand operative intervention. The lesions of the latter group are further subclassified according to their existence as collateral signs, the phenomena of shock and of local or general peritoneal irritation in the symptom complex. Furthermore, as of greater or less diagnostic significance a few groups have been arranged, based on certain inseparable, clinical, contributing etiological factors in a given case which may often aid in a diagnosis by methods of exclusion. The bulk of the paper consists of an elaboration of the scheme outlined above. Too many details are given for summary here, and the paper must be consulted in its original form by those interested. An elaborate bibliography is appended.

The Roentgen Treatment of Some Non-Malignant Superficial Lesions.—C. L. Leonard discusses his results along the lines indicated in the title of his paper. By superficial lesions he includes not only those of the skin, but of the subjacent glandular organs. So far as the effect on tuberculous processes is concerned, he declares that it has been realized chiefly in the treatment of tuberculous adenitis and the sinus resulting from curetting and drainage. The agent has also been used in goiter, two cases being cured while two others were greatly improved. Dermatoses in which the rays have given good results include sycosis, favus, ringworm, alopecia areata, and hypertrichosis. In lupus very satisfactory results have followed, and the method is superior to the Finsen method in that a cure can be obtained without any breaking down of the skin. Other chronic skin lesions yielding to the stimulating and alterative action of the rays are eczema, psoriasis, and acne. Psoriasis is quite obstinate, and the patient is more liable to relapses than with eczema. The immediate and radical results produced by this agent in cases of acne vulgaris show that although the disease may be dependent upon the health and general condition of the patient, it is a local condition, which will yield rapidly to the local stimulative and alterative action of the Roentgen rays. The rapidity with which changes take place and the freedom from scarring, even where deep-seated pustules are present, makes this the most efficient method of treating this very common and yet persistent form of disease. There are many other skin lesions in which this method of treatment has been employed with great efficiency and remarkable results. Keloid, though requiring a long series of treatments, yields eventually to treatment, and when it is considered that the growths are liable to break down and change through retrograde metamorphosis into malignant disease, as in a case recently under treatment and apparently cured, the necessity for early treatment will be realized.

Journal of the American Medical Association, May 5, 1906.

Regeneration of Lost Parts.—T. H. Morgan reviews the facts and theories regarding the regeneration of lost parts in certain animals and the failure to do so in others. The question, he says, is possibly of some practical importance, for if we could determine why man does not replace a lost arm or leg, we might, perhaps, go further and discover how artificially to bring about this process. Regeneration appears to him as only a phase of the general phenomenon of growth, and if this is the case, why, he asks, does an animal that has ceased to grow begin to regenerate rapidly when a part has been removed? If we turn the question around the other way and ask, why does an animal stop growing at a certain stage, we may attack the problem at closer quarters. It is evidently not because the cells

have lost the power of growth; their power in this direction seems unlimited, nor can it, as he shows, be entirely attributed to an equilibrium between food supply and consumption. The question seems to be one of inhibition, and he suggests, as a possible explanation of the cessation of growth, a definite response to a condition of mutual pressure or tension of the cells on each other. When this is reached growth stops, and when we alter the tension by removing a part it begins again. The facts of regeneration of lost parts in the vertebrates are given and the reason why it fails in mammals and in man are discussed. Morgan does not think this can be due to greater complication of structure or to any process of natural selection. He thinks it more probably due to the fact that different tissues have very different rates of regeneration. In the higher mammals the failure to regenerate is observed in cases in which cartilage begins to change to bone, and he thinks the main trouble is in the slowness of the bones to regenerate in time with the other tissues. He says: "If the tissues in man still possess the power to regenerate, may we not hope in time so to adjust their rate of regeneration that the replacement of a lost limb may be produced? I cannot but think that some day this may be accomplished."

Duodenal Ulcer.—J. H. Musser and E. Martin report a case of perforating duodenal ulcer which is of interest as regards the diagnosis of the pre-existing conditions. The patient was of a neurotic temperament and gastric neurosis was strongly suggested. Of course when the symptoms of peritonitis appeared the earlier symptoms assisted in the retrospective diagnosis of ulcer and its location. The surgical procedure was simple and successful after the diagnosis was made.

Fracture of the Superior Maxillary.—W. E. Hartshorn reports a case of fracture of the alveolar process of the right superior maxillary bone extending from the median line to and including the first right bicuspid. The patient did not seek surgical aid until ten days after the injury. The fragment was entirely separated and freely movable. The treatment was by means of an interdental splint of aluminum, which, after several trials, was applied and worn without discomfort, reduction being made under chloroform. The appliances used are illustrated.

Proprietary Medicines.—G. H. Simmons discusses some general considerations of this subject. He calls attention to the fact that proprietary medicines are generally mixtures controlled by copyright or trade names, and are often secret or semi-secret in character. He states that while there is no objection to proprietary preparations *per se* the commercializing of the literature relating to materia medica is against all true scientific spirit and is demoralizing to both pharmacy and medicine. He explains in detail the difference between "patent" and proprietary medicines. Dr. Simmons says that whatever is secret is suspicious, and states that secrecy and mystery are the bulwarks of quacks and charlatans. He declares that a physician not only has a right to know what he is giving his patient, but that he has no moral right to prescribe a preparation of which he does not know the exact composition. He refers to the need of legislation on this subject and to the necessity for examination of various medicines and foods. He discusses the reliability of manufacturers and the exaggerated statements made by some in regard to the articles manufactured by them.

The Problem of the Synthetic Compound.—J. Stieglitz states that the problem of the enormous increase of the new synthetics is one of the most serious before the profession. Admitting the commercial or mercenary reasons for their production, he holds that there is a service to be done to humanity and a rational, legitimate ideal to be attained. While the progress has been comparatively slight, consisting, for the most part, in the production of a few more or less useful antipyretics, some hypnotics, some modifications of alkaloids, and a few more advanced preparations, the chemical successes in other lines, such as in the manufacture of the anilin dyes, teach a lesson of patience and of hope for the future. The problem is a complex and important one, but he does not see why we should not attain even to the chemical preparation of those specific antitoxins which we now draw from animals, at some time in the future. The main point of his remarks, however, is that there is need of some scientific standard or measure for the impartial sifting of the good from the bad in these synthetics, of some institution, perhaps international, or some central bureau of critical disinterested review. The need of a check on the great manufacturing houses is illustrated by him by quotations of deceptive chemical nomenclature, though technically truthful, covering what are practically mixtures as rank as any of those recently exposed by the Council on Pharmacy and Chemistry of the American Medical Association.

The Lancet, April 21, 1906.

Vaccine Treatment in Surgery.—By this term H. M. Gray refers, roughly speaking, to the injection into the patient of quantities of the organisms (dead) which produce the disease. The various phases of tuberculosis have provided the most frequent test for determining the efficacy of the method. Gray has used Koch's tuberculin R. (T. R.) for the purpose named, and has employed it in cases of glands, joints, peritonitis, upper air passages, tenosynovitis, and genitourinary maladies, all of a tuberculous nature. His results have been on the whole gratifying. A series of cases is detailed under the respective headings above enumerated. He has at times found it advantageous to use other vaccines in conjunction with T. R. in mixed infection of tuberculous foci. Staphylococcus and streptococcus vaccines are pure in another class of diseases, viz., ulcerated cancers. He indicates the probable usefulness of gonococcus vaccine in chronic (only) gonorrheal infections, such as gleet, prostatitis, epididymitis, endometritis, salpingitis, etc. He does not believe that the estimation of the opsonic index is necessary for carrying such cases to a successful issue. It may be necessary for the investigator, but is not for the clinician in the majority of cases. The bacteriologist is an absolute necessity, however, for he is the one who must find out what particular organism is causing the disease and prepare the corresponding vaccine. The dose of T. R. used has been 1-900 of a milligram, and the injections have been repeated at intervals of from ten to fourteen days.

The Treatment of Malignant Endocarditis by the Rectal Administration of Antistreptococcus Serum.—N. Raw reports two successful cases. He attaches great value to the remedy in general in cases of purely streptococcal infection, but finds that the usual method of injecting the serum under the skin of the abdomen is objectionable. He has used it per rectum in 25 cases, and declares that he would not go back to the old method. His plan is as follows: The bowels are freely cleared by aperients and the rectum is gently washed out with a little warm saline solution. The formula for injection is as follows: Antistreptococcic serum, 20 c.c.; normal saline solution, 100° F., 40 c.c.; to be gently injected into the rectum morning and evening or as required. It is found that there is no pain or discomfort; the serum is rapidly absorbed and seems to exert the same bactericidal influence as when given under the skin; skin rashes are rarely seen and the thirst and dry tongue are relieved. When given in such a small amount there is no difficulty on the part of the patient in retaining it, and it is rapidly absorbed. In fact, he is satisfied beyond any doubt that equally good results are obtained by absorption of the serum per rectum as by subcutaneous injection and with, so far, no skin or joint complications. In addition to the two favorable cases a third and fatal case is recorded. The remedy was given per rectum in this instance also.

A New Method of Operating in Pannus.—The method described by W. Primrose consists in causing an extravasation of blood into the subconjunctival tissue around the cornea. By its mechanical pressure and by acting as an irritant foreign body setting up a local inflammation, it causes the obliteration of the vessels which vascularize the cornea. The point of a cataract knife is passed through the conjunctiva at a distance of two or three millimeters from the cornea, made to puncture one of the larger vessels, and is then withdrawn. The wound should be as small as possible and made obliquely by holding the knife at an acute angle with that part of the surface of the eyeball which is being operated on. In this way there is no external hemorrhage, but bleeding takes place into the subconjunctival tissues and is arrested automatically by the pressure of the extravasated blood upon the vessel walls. In like manner many of the smaller vessels in the vicinity are mechanically closed. This mechanical action is increased by the formation of a coagulum, the fibrinous part of which shrinks and makes the whole mass smaller. Extravasated blood acts as an irritant, probably chemical as well as mechanical, so a non-infective inflammation is set up which results in the absorption of the blood clot. This process acts as a counterirritant to the inflammation of the corneal tissues and so tends to remove the seat of inflammation and the supply of blood from the diseased cornea to the clot, where the effects of the inflammation are com-

paratively trivial. By the time the blood clot has disappeared the blood-vessels in the cornea affected by the operation have shriveled up and the cornea has regained much of its transparency. The whole pannus may be treated in this way at one time or the operation may be repeated from time to time, only a part of the pannus being treated each time. The latter is always advisable when the pannus is marked, as the inflammatory reaction is sometimes very severe and accompanied by a good deal of pain. Although the structures in the anterior part of the eyeball are all more or less affected by the inflammation, this is easily controlled and subsides in a few days with the application of suitable remedies.

British Medical Journal, April 21, 1906.

Antityphoid Serum Obtained from the Goat.—The general conculsions presented by A. Macfadyen from his experiments are summarized in the following statements. He has found that the intravenous injection of the goat with the toxic cell juices of the *Bacillus typhosus* in small and carefully regulated doses resulted in the production to a very considerable degree of an antiendotoxin—inasmuch as 1-50 c.c. of the serum neutralized thirty lethal doses of the typhoid endotoxin. This property did not exist in 3 c.c. of normal goat's serum. This titrate was obtained after about four months' immunization of a goat with the toxic cell juices, and is quantitatively much higher than that obtained by so competent an observer as Besredka, even after two years' immunization of a horse with dead and living typhoid bacilli. The serum acted when injected simultaneously but separately from the toxin; also when injected at the onset of toxic symptoms. Subcutaneous administration was also effective. The serum, in addition to antiendotoxic, possessed agglutinative and bacteriolytic properties. The serum, while neutralizing the typhoid, did not neutralize the cholera endotoxin, and was to this extent specific in its action. The method which has led to successful results on the goat will next be tested on the horse, in order to ascertain in how far it is feasible to obtain a corresponding rise in the immunizing value of its serum.

Exophthalmic Goiter.—One case is reported by H. T. Dufton, who makes the history the basis of some remarks on the nature of the disease, which he is inclined to regard as essentially one of the sympathetic nerve ganglia, rather than one of the glandular system. The ganglia connected with the cardiac plexus would give rise, if diseased, to an inhibition of function and to a loss of tone in the large arteries. This loss of tone, produced by disordered action of vasomotor nerves, would cause a general dilatation of the large arteries; it would be first felt on the right side and in the innominate artery, the first large vessel arising from the aorta; it would be followed in a direct line into the common carotid, the external carotid, and into the first branch of the external carotid—that is, the superior thyroid artery. Similarly the loss of tone producing dilatation in the thyroid axis would be continued into the inferior thyroid artery. This would account for the usual prior enlargement of the right lobe of the thyroid gland. The proximity of the middle cervical ganglion which gives off the middle cardiac nerve; the sympathetic nerves at the back of the sheathe of the common carotid artery; the upper and lower cervical ganglia with the internal carotid and subclavial arteries are to be remembered. According to the author, it seems reasonable to argue that the tachycardia, and possibly the palpitation, may be caused by communication from the last cervical ganglion, through the accelerator nerves, as it is well known that when stimulated these nerves produce a quickening of the heart's beat. It is well known, also, that division of the cervical sympathetic causes vascular dilatation of the face, which is accompanied by increased perspiration. As regards the exophthalmos, a similar argument will obtain from the contiguity of the sympathetic root of the lenticular ganglion with the ophthalmic artery. The persistent or enlarged thymus, the enlarged lymphatic glands, the increased connective tissue in the neck, are not these due simply to increased vascularization? The only actual evidence that the disease originates in these ganglia is based on the fact that Greenfield has found changes therein in the shape of leucocyte invasion and degeneration of the ganglion cells. It remains to be demonstrated that such changes are constant.

Pneumococcic Arthritis.—W. B. Secretan and W. Wrangham refer to Cave's tabulation of reports of this disease up to 1901 (31 cases) and have collected 25 additional cases since published. They find that the knee was the point involved in 15 out of this latter series of 25 cases. In most cases the arthropathy occurred a few days after the commencement of the lung trouble, but in some instances among children no pneumonia was present. In one a pneumococcic otitis media suppuration seems to have been the original focus of infection. The character of the fluid in the joints varies from turbid serum to thick pus. It may vary in different joints in the same individual. In the authors' opinion the thinner the pus the better the prognosis. If aspiration shows a pus-like fluid the joint must be opened and drained under an aseptic régime. Often the pneumococcus is the only organism found, but naturally the most disastrous results may follow invasion by other organisms. Finally the authors report one personal case in a lad of 16 years with involvement of one knee, the pus from which showed fine cultures of the pneumococcus. The joint was drained as above indicated and the boy made a good recovery. Six months later the movement in the joint was perfect.

Vasodilatation in Hemoptysis.—E. T. Smith reports a case of hemoptysis, his patient being a man of 52 years. The blood appeared to come from a ruptured atheromatous pulmonary vessel. He was treated by bleeding at the elbow and the free use of amyl nitrite. Later a mixture was given of sodium nitrate, nitroglycerine and epsom salts. The author quotes from various authorities as to the sources of hemoptysis in general. He decries against the use of adrenalin under these circumstances, although he finds that it has its advocates. If it be good in this connection (admitting that it constricts the arterioles generally and raises blood pressure), it cannot be for this latter, but for its former (constricting) effect. In this case it must be conceded that the pulmonary vessels are acted on by the same vasomotor mechanism as those of the systemic circulation, and synchronously with them. And furthermore, that the vessel-constricting power of the drug, as regards the pulmonary vessels, is strong enough to counterbalance the manifest disadvantage of its also admitted pressure-raising action. The author doubts, however, that such premises can be admitted.

Berliner klinische Wochenschrift, April 16, 1906.

The Value of Bottini's Operation.—Cohn says that while he does not seek to underestimate the dangers and disadvantages attending Bottini's operation, he considers that there are certain instances in which it can profitably be employed. Sometimes the operation is not followed by any improvement whatever, and in some cases relapses occur, but the operation is well adapted for use with patients who cannot be subjected to general anesthesia, or who are too feeble to be exposed to the risk attending a protracted convalescence. The author draws his conclusions from thirty cases treated according to this procedure out of 150 cases of prostatic hypertrophy which have been under his observation in the last three years. The earlier operations of the series were done under general anesthesia, and then recourse was had to local anesthesia, but the later operations were performed entirely without anesthesia. The possibility of doing this is considered by the author one of the greatest advantages of the method. He introduces a small amount of boric acid solution into the bladder, and controls the course of the incisor by a finger in the rectum. A permanent catheter is always introduced at the termination of the operation, and is removed on the fourth day. Disadvantages of the operation are the possibility of secondary hemorrhage, fever and chills, and pulmonary embolism. Two of the author's patients died, one of secondary hemorrhage and the other as the result of severe cystitis and pyelitis present before the operation. The result was perfect in some cases and partially successful in others.

Experimental Carcinoma Investigation.—Bashford criticises the observation published some time ago by Ehrlich and Apolant, who stated that in the course of a carcinoma transplantation experiment in mice a sarcoma developed. One of the explanations offered by them for this phenomenon was the possibility that connective tissue was transplanted together with the carcinoma cells, and that this in consequence of repeated passage through the animals developed an increased capacity for proliferation. Bashford considers that his experiments have demonstrated that the connective tissue inoculated always degenerates, and he suggests that in order to gain an insight into these problems systematic observations on an extremely large number of animals must be made. Thus, in one instance a tumor was transplanted into 390 mice, and five of the animals were killed at the expiration of two, four, eight, sixteen, twenty-four hours, two days, three days, etc., after the transplantation. The transplanted cells were then fixed

and prepared in serial sections covering the entire colony of foreign cells.

Münchener medizinische Wochenschrift, April 17, 1906.

Alcoholism in Munich.—Kraepelin contributes a very severe arraignment against alcohol and urges on members of the medical profession their responsibility in checking the consumption of spirituous beverages. Out of 1,373 patients treated in his psychiatric clinic during the year 1905, 253 men and 30 women were admitted for purely alcoholic psychoses, but the number of patients whose condition was due, in great measure, though not entirely, to the use of alcohol, was very much larger, so that Kraepelin estimates that alcohol not only directly causes about one-third of all mental diseases in men coming under observation in Munich, but also plays an important rôle in the causation of a whole series of severe mental disorders, of which general paralysis, epilepsy, and arteriosclerosis stand in the foreground. One of the most prominent factors which permits the existence of such a state of affairs consists in the ignorance of the people at large; and to combat this the physicians must exert themselves to a much greater degree than has heretofore been the case. Physicians should avoid prescribing alcohol as a beverage of any sort in private practice or in institutions, and public institutions for the treatment of alcoholism should be provided. If alcohol could be removed from the world to-day the number of patients with mental disorders would be reduced one half, while if adequate provision for the treatment of alcoholism should be made the number would be reduced by one-third.

A Remarkable Case of Tuberculosis of the Heart.—Knauth describes this case, in which the patient was a young man who for nearly a year suffered from a variety of symptoms, of which the most conspicuous were pallor, emaciation, night sweats, and enlargement of the heart. For nine months he was able to do his ordinary work as a household servant, when he manifested symptoms pointing to a general miliary tuberculosis with tuberculous meningitis. After an illness of about six weeks he succumbed, and on the autopsy it was found that the entire heart had apparently been transformed into a mass of pus. Closer examination revealed that almost the entire thickness of the cardiac musculature had been irregularly eroded by the degenerative process, so that only a very thin septum of muscle remained between the endocardium and the broken-down tissues. This condition had remained entirely unsuspected, as up to the time of death the pulse had been of excellent quality, and it was particularly remarkable that the man had been able to be up and about attending to his work during so long a period while this extensive destruction of cardiac tissue was going on.

Uremic Neuritis.—Dunger says that it has not been universally recognized that the disturbance of metabolism attending uremia may have as a consequence a typical neuritis. In illustration he cites a case of severe acute hemorrhagic nephritis occurring suddenly in a man of 27 who had previously been perfectly well. In a very short time high temperature, extensive edema, headache, insomnia, restlessness, very small quantity of urine, etc., developed. While these symptoms were slowly improving, very severe tearing pains developed in the left arm, the nerve trunks became very sensitive, and there was paresis of the entire arm. At the same time the left forearm remained edematous, while the edema was subsiding in other portions of the body. Finally all the local symptoms disappeared, except paretic manifestations in the domain of the median nerve. The author considers that the cause of such a nephritic neuritis is to be sought for in the altered composition of the blood and the loading of the blood with products of imperfect metabolism. The author suggests that neuritis is not as uncommon in nephritis as the absence of observations in this regard would appear to indicate, owing to the fact that the pains, numbness, etc., often complained of by such patients would, on detailed examination, be found referable to a neuritic condition.

Deutsche medizinische Wochenschrift, April 19, 1906.

The Participation of the Internal Ear in Injuries to the Head.—Rhese has studied the condition of the auditory function in a hundred cases of head injuries of many different sorts, and has found that in a very large number of instances, even if there is no impairment of hearing to be detected when the spoken or whispered voice is used as a test, very considerable abnormalities are to be discovered when more delicate means of investigation are employed. He believes that the internal ear participates in most cases of head injuries accompanied by concussion, and says that examination made immediately after the accident shows a constantly recurring symptom complex, comprising: nystagmus; interference with bone conduction; shortening of the duration of perception for the entire range of tones; irregularities in the perception of the different tones; simultaneous affection of both ears; a very marked reduction in the audibility of the watch tick, which is in contrast to the audibility of the voice; easy fatigue for tuning fork tones; positive Rinne's test; marked dilatation of the vessels along the roof of the auditory canal. When this syndrome occurs, to some extent at least, the suspicion of a head injury is justifiable.

Observations on a Meningococcus Serum.—Kolle and Wassermann describe the rather intricate steps which led to the production of an antimeningococcus serum as well as an elaboration of a method for testing it. The serum is obtained from horses, and not only has specific agglutinating properties, but, the authors believe, should also be of value both for protective inoculation as a prophylactic measure as well as for therapeutic purposes in those already infected. The authors consider that the product has been sufficiently perfected to render its application advisable, and recommend observations with it in cases of the disease. While the exact dosage can be determined only by experiment, they consider that subcutaneous injections of 10 c.c. would be entirely harmless and yet of therapeutic value.

The Roentgen-Ray Treatment of Leukemia.—Flesch sums up his position in regard to the *x*-ray treatment of leukemia by saying that although he does not wish entirely to discountenance this plan of procedure, he does not consider it wise to be too sanguine in regard to the results obtainable in this way. It is undoubtedly possible to affect myelogenous leukemia favorably and to make the patient more comfortable, but more than a temporary improvement is hardly to be expected. In lymphatic leukemia the value of radiotherapy seems still smaller, though the reason for this lack of efficacy is still unknown. A much wider range of experience will be necessary before the question can be settled, and it appears not improbable that protracted radiation may in some cases lead to insufficiency of the hematopoietic organs.

American Journal of the Medical Sciences, February, 1906.

On the Extermination of the Mosquito.—A. H. Doty declares that the evidence must now be considered conclusive that yellow fever is transmited by the variety of mosquito known as the *stegomyia*. All varieties of the mosquito propagate only in water. With the exception of the *sollicitans*, all mosquitoes deposit their eggs on the surface of the water. *Culex sollicitans* will breed in no place other than salt water. The mosquito lives for some time. As to the treatment of baggage coming from yellow fever ports, the writer believes that this is unnecessary, provided the period of transit exceeds two days. All varieties of the mosquito cannot be exterminated by the same means. In the case of the *sollicitans*, it is only by the proper drainage of salt water swamp lands along the coast that its propagation can be prevented. If accumulations of surface water are prevented by drainage, propagation ceases. Cisterns and rain-barrels contribute largely toward the propagation of *Culex pungens*. The extermination of this variety, as well as of *Anopheles* and *Stegomyia*, depends largely upon the efforts which are made to prevent the propagation in receptacles about the premises. Draining and filling in of ground depressions is also important. If ground depressions cannot be drained or filled in, petroleum oil may be used as a temporary measure. Bad drainage and the accumulation of fluid filth furnishes the breeding place for the *stegomyia*.

Cystinuria.—W. McKim Marriott and Charles G. L. Wolf give a careful review of their work. The patient from whom the urine was taken was a woman sixty-five years old. She was a surgical patient, the left breast being removed for carcinoma. The right breast had been excised for carcinoma fifteen years ago. The writers give a table showing the result of their analyses of the urine. The amount of undetermined nitrogen varied from seven to ten per cent. The addition of the amino-acid nitrogen brought this up to twelve and nine-tenths to fifteen and five-tenths per cent. To what this large amount of undetermined nitrogen is due the writers are unable to state. It is without doubt made up in great part of the amino acids, the diamino acids, or the diamins. A very large amount of neutral sulphur is formed at the expense of the alkaline sulphates. The ethereal sulphates remain at the same level. Cystinuria

is apparently not accompanied by any changes which lead to disturbances other than the cystinuria itself. A cystin calculus examined some time ago by one of the writers consisted exclusively of hexagonal cystin. The cystin in this case on recrystallization consisted exclusively of six-sided plates.

The Present Status of Blood Cryoscopy in Determining the Functional Activity of the Kidneys.—Edwin Beer tells us that cryoscopic data like quantitative analysis of the urine, indicate in a measure what is happening at the moment and nothing more. The compensatory powers of the kidney cannot be observed and probably they will never be revealed. These organs, though the most important in regulating the molecular concentration and osmotic pressure of the blood, are not the only ones concerned in this process. An almost normal kidney may be so disturbed in its functional activity as to appear seriously diseased. The concentration of the blood may be normal, even though the kidneys may be very badly diseased. The concentration of the blood may be above normal, contraindicating any removal of kidney tissue even though the second kidney is normal anatomically but is suffering from a functional disturbance due to nervous reflexes or to toxins from the other diseased kidney. Even though both kidneys are in good condition, the concentration of the blood may be markedly increased. With normal concentration and bilateral disease, nephrectomy may remove most of the functioning tissue of the kidneys and so bring on uremia and death. The list of cases that have survived a nephrectomy despite high molecular concentration is steadily growing. Patients with normal freezing point do not necessarily survive the operation. The investigators have not yet been able to decide which cases of high concentration are not of renal origin or which cases of low concentration are suffering or are likely to suffer from renal insufficiency.

Operations for Relief of Pelvic Diseases of Insane Women.—Leroy Broun classifies the pelvic operations on insane women as follows: major operations, which include all abdominal sections; operations for displaced uteri, which include also, when present, a repair of cervical and perineal injuries; and minor operations, including a restoration of injuries of the vagina and cervix and uterine endometrium. As a result of all the operations done (242), 112 patients have been physically benefited in a large degree; 107 have been noticeably improved. The beneficial effect of surgical relief finally ending in a mental recovery is confined in the writer's experience to those patients whose mental disturbance would be largely influenced by the presence of pathological conditions. He attempted to preserve one or both ovaries if consistent with the physical welfare of the patient. It was necessary to remove both adnexa in twenty-three instances. Of the seven abdominal sections in which the mental recovery of the patient was largely brought about as the result of the operation, the adnexa were removed in only two. Uterine hemorrhages are known to aggravate the mental state of insane patients. Surgical operations upon insane patients do not meet with the difficulties that are often considered to exist.

Researches on the Blood of Epileptics.—B. Onuf and Horace Lograsso give as the principal fact that has been brought out by their investigations, the great fluctuation of the leucocyte count. In the first four days the leucocyte count showed slight fluctuations. The examinations were interrupted for a few weeks, but after being taken up again the leucocyte curve ran very evenly for about a week, when a distinct rise occurred. Within several days the patient had a seizure. An examination on the next day gave the highest leucocyte count so far obtained. The curve suggests that in the intervening days the count was still higher. The curve tends to show that where the intervals between the seizures are long, fluctuations of leucocyte count are apt to be slight and to concentrate around the period of seizures and that the curve is apt to be an almost entirely even one in most of the time of the free interval.

Complete Amputation of the Thigh, with Replantation.—Alexis Carrel and C. C. Guthrie have performed five experiments on dogs. The first four were made for the purpose of developing an operative technique. The failure of the last operation was due only to a fault of technique. Notwithstanding the fact that it was unsuccessful, it gives important information in relation to the replantation of a limb. The circulation was easily and entirely re-established through the replanted thigh. The pulsations of the femoral, popliteal, and posterior tibial arteries were as strong as the pulsations of the corresponding arteries of the other side. The capillary circulation was exaggerated. The greatest departure from normal observed in the character of the circulation of the replanted limb was the dilatation of the smaller vessels. At present it is impossible to foresee the changes that may occur in the nutrition of a replanted limb. The writers are going to pursue their investigations further.

Tetany: A Report of Nine Cases.—Campbell P. Howard declares that in the treatment of tetany the first indication is to correct the predisposing condition, such as diarrhea, and so on. The stagnation of the stomach contents and further absorption of the toxic substances are relieved by the operations of pyloroplasty and gastrojejunostomy. Thyroid extract is indicated in the tetany of pregnancy and in any cases associated with thyroid deficiency. Finally, for the spasms, absolute rest in bed, cold to the spine, baths, packs, bromides, and so on, have given little or no result. Chloroform administered to the point of primary anesthesia may lessen the severity of the spasm.

French and Italian Journals.

Pernicious Anemia Successfully Treated by Radiotherapy and Antitoxic Serum Injections.—Louis Rénon and Léon Tixier have studied in a patient with pernicious anemia successively the effects of arsenical medication, treatment by radiotherapy, and that by injections of antitoxic serum. Arsenical treatment, which gives excellent results in many cases, does not constitute a specific treatment for pernicious anemia. On the contrary, blood regeneration resulted from the employment of the *x*-rays alone or in combination with injections of antidiphtheritic serum. The authors insist less on the clinical cure since such ameliorations are often transient, than on the hematological determinations of blood regeneration under the influence of physical and clinical agents which were used in this case. Blood examinations practised during the hours which followed treatment by irrigation and antitoxic injections showed that the stimulation of the hematopoietic organs was attended by a very notable increase in the number of red blood corpuscles, by an eosinophilia as remarkable for its constancy as its intensity, and finally by the presence in the blood of polychromatophiles, young elements of bone marrow.—*Le Bulletin Médical,* March 14, 1906.

Hysterical Manifestations by Imitation.—Terrien speaks of various hysterical manifestations of great interest. A child became paralyzed in both legs after an attack of diphtheria. The writer treated this little patient daily by means of electricity. At the time of his visits he examined the throats of all the other children in the house. One morning one of the small brothers, eleven years old, walked slowly into the room dragging his leg. The mother informed the writer that this child was also paralyzed. On inquiry it was found that the boy had never had the slightest signs of diphtheria. He was imitating the paralysis of his brother. Several other children imitated the more apparent manifestations of coxalgia from which a playmate was suffering. Another hysterical manifestation described by the writer was that of Cheyne-Stokes respiration. The writer then emphasizes the hysterical manifestations of appendicitis, relating a case in which operation was performed. The appendix was perfectly normal. He calls attention to the fact that as far as possible the discussion of diseases with their description should be avoided in the presence of hysterical individuals.—*Le Progrès Médical,* March 10, 1906.

The Leucocyte Formulæ of the Early Period of Pulmonary Tuberculosis and of Articular Tuberculosis.—V. Giudiceandrea, E. Felice, and A. Saporiti have studied the leucocyte reaction of the blood in early pulmonary and in articular tuberculosis. In the pulmonary form the most common leucocyte formula in early stages may be summed up thus: Total number of leucocytes normal; slight neutrophile polymorphonucleosis; diminution of total number of lymphocytes with increase in number of small lymphocytes. Eosinophilia corresponds with what has been observed after injections of tuberculin. The leucocyte formula as a symptom gives probability to the diagnosis of pulmonary tuberculosis. In the articular form of tuberculosis in the early stages the formula is the same as in early pulmonary infection. Lymphocytosis is the exponent of advanced tubercular processes; neutrophile polymorphonucleosis indicates advanced secondary infection. Small lymphocytes indicate a closed focus of disease. The diagnostic value of these signs will increase when we know the lymphocyte formula of other forms of articular disease. Eosinophilia enables us to judge of the gravity of the morbid process and the resistance of the individual, thus being of value in prognosis.—*La Riforma Medica,* March 3, 1906.

Book Reviews.

On the Relations of Diseases of the Skin to Internal Disorders. With Observations on Diet, Hygiene, and General Therapeutics. By L. Duncan Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital; Consulting Physician to the New York Hospital; Consulting Dermatologist to the Randall's Island Hospitals, to the Manhattan Eye and Ear Hospital, and to the Hospital for Ruptured and Crippled, etc. New York: Rebman Company; London: Rebman Limited, 1906.

In this volume Dr. Bulkley has put into permanent form the lectures of his annual course delivered at the New York Skin and Cancer Hospital during March of last year. The great danger to which every specialist is exposed is that of losing his sense of proportion and regarding the diseases with which he deals as something apart and not related to derangement of the rest of the economy. This was at one time particularly true of diseases of the skin, as a consequence of the teachings of the German school, but how wrong these teachings were is very clearly shown in these lectures. The lecturer approaches his subject from the side of the general system rather than from that of the skin; that is to say, he discusses the various disorders of the nervous, digestive, respiratory, and circulatory systems, the organs of sex, of excretion, etc., and reviews the cutaneous disturbances associated with them, rather than taking up the special diseases of the skin and speaking of the constitutional affections associated with them.

There are four lectures, one serving as an introduction to the subject, the two following discussing the general affections mentioned and the various skin manifestations associated with or dependent upon them, the final lecture being devoted to some general deductions from the facts furnished and to the question of treatment. The work is written in the personal and unstilted style of the lecturer, which makes it easy to read. It is a suggestive little book that cannot but be of great assistance not only to the dermatologist, but to the general practitioner as well.

Lectures on Tropical Diseases, Being the Lane Lectures for 1905, Delivered at Cooper Medical College, San Francisco, U. S. A., August, 1905, by Sir Patrick Manson, K.C.M.G., M.D., LL.D., F.R.C.P., Hon.D.Sc., Medical Adviser to the Colonial Office; Lecturer London School of Tropical Medicines, St. George's Hospital Medical School, etc. Chicago: W. T. Keener & Co., 1905.

The author of these delightful lectures needs no introduction, for his work on "Tropical Diseases" ranks first among the treatises on this subject in the English language. The present volume is less comprehensive, as the lecturer chose for his subjects only those affections which his auditors would be likely to meet in their practice among the natives of the countries bordering on the Pacific—a wide enough field, yet not embracing all the territory included in the tropical zone. The book is not a formal treatise, being written, as befits the occasion, in a semi-popular style, but is all the more readable because of this. The several lectures, following an appropriate introduction on the principles governing the geographical distribution of tropical diseases, deal with: Epiphytic Disease, Ankylostomiasis, Dracontiasis, Endemic Hemoptysis, Bilharziasis, Filariasis, Malaria, Trypanosomiasis and Sleeping Sickness, Febrile Tropical Splenomegaly (Kala-Azar), the Diagnosis of Tropical Fevers, Treatment of Fevers and Fluxes, and conclude with a talk on Problems in Tropical Medicine. The work cannot be regarded as a complete and authoritative treatise on tropical medicine, but as an introduction to this fascinating branch of medicine it can be unreservedly recommended. It reads like a story and will be absorbingly interesting to every medical man devoted in his science, whether or not his daily practice brings him in contact with the subjects of tropical disease. In this country and at this time every practising physician, wherever he lives, is liable to be called upon to treat some wanderer suffering from a malady acquired in one of our tropical possessions.

Physiologie und Pathologie des Mineralstoffwechsels. Nebst Tabellen über die Mineralstoffzusammensetzung der menschlichen Nahrungs- und Genussmittel sowie der Mineralbrunnen und Bäder. Von Dr. Albert Albu und Dr. Carl Neuberg. Berlin: Julius Springer, 1906.

The first part of this treatise on the inorganic chemistry of the body is concerned with the details of metabolism and the part in the economy of life played by the various mineral constituents of the human organism. The second part contains an excellent set of tables, giving the composition of the various articles of animal and vegetable food in common use, and of all the more important mineral waters, over one hundred and fifty in number. The book is a very satisfactory exposition of an important subject.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA.

Thirty-sixth Annual Session, San Francisco, April 17.

The President, Dr. R. F. Rooney of Auburn, in the Chair.

(Special Report to the Medical Record.)

The meeting of this society was to have occupied three days, April 17, 18, and 19, but the earthquake on the morning of the 18th prevented the completion of the program. It had been the intention of the members to celebrate in fitting manner the fiftieth anniversary of the founding of the society. A program of unusual scientific interest had been prepared, social entertainments of more than ordinary liberality had been arranged for, and clinics at all the leading hospitals of the city had been promised. The meetings of the first day were held as appointed, but the call to duty in the relief of the injured on the succeeding days effaced all thought of further proceedings, had such been possible. Fortunately the members of the society escaped serious injury, with the exception of one, Dr. J. Coplin Stinson of San Francisco, who was killed in the collapse of the California Hotel.]

GENERAL SESSION.

The Address of Welcome, on the part of the San Francisco County Medical Society, was delivered by its president, Dr. Wallace I. Terry.

The Address of the President, Dr. F. F. Rooney, followed. This consisted of an exceedingly interesting review of the history of the society from its organization to the present time, its many trials and struggles during times when the meetings were less formal and challenges more formidable than at the present time. The personal reminiscences of the speaker were highly entertaining.

Board of Medical Examiners.—The President of the board spoke chiefly of the manner in which the law requiring examination had affected the licensing of physicians to practise in the State. This was well shown by the fact that during the year 1901, prior to the law's going into effect, 753 certificates were issued, whereas, during the succeeding five years there have been issued a total of only 691 regular certificates, 40 homeopathic, and 6 eclectic.

Dr. Carpenter spoke of the defects in the present law, and suggested several amendments which would remedy them.

Dr. Dudley Tait discussed the same subject, with particular reference to the irregular practitioners. He referred briefly to the enormous decrease in the number of homeopathists who have been able to obtain licensure through examination as compared to those entering practice prior to the enactment of the present law. But the principal point dwelt upon was the licensing of osteopaths. Something ought to be done, he said, to prevent the unlimited admission of this class, of whom 485 have been admitted to practice in the last five years. Three requirements, he thought, should be made: First, health officers should be compelled to refuse burial permits on the death certificates signed by any unregistered physician or osteopath. Second, all osteopaths should be prosecuted who practise anything above osteopathy. Third, a new member should be added to the board of examiners to represent the osteopaths, and these should then be required to pass the same examination as other applicants, with the exception of practice, thus placing them on the same footing as the homeopathic and eclectic candidates. The speaker stated further that the authority to prosecute unlicensed practitioners should be placed in the hands of the examining board instead of the County Medical Societies, as at present, and the provision which gives half the fine to the informant

should be done away with. With reference to reciprocity between California and other States, he showed that California would be the loser by its adoption, since most of the graduates of institutions in the State remain there. The records show that 181 outside graduates have been admitted to the State on examination to five California graduates licensed in other States. In conclusion, he stated that the Board had revoked three licenses during the past year and contemplated the revoking of two others in the immediate future.

Dr. KING referred briefly to the character of the examinations. He did not regard them as too rigid and defended the statement by statistics which showed that the number of successful applicants in this State is nearly up to the average of those in other States.

Medical Licensure was the title of a paper read by Dr. S. D. VAN METER of Denver, a member of the Colorado State Board of Examiners.

Dr. F. M. POTTENGER of Los Angeles presented the report of the committee on tuberculosis. He considered California in the lead of the States in organization and work accomplished. He laid great stress on the importance of the reporting and registration of all cases of tuberculosis, not for the sake of quarantine so much as for the purpose of thorough disinfection of lodgings after the patient has removed.

SECTION IN GENERAL MEDICINE.

What is Rheumatism? — Dr. WOODS HUTCHINSON of Arrowhead Hot Springs, said that rheumatism was divided into three classes: (1) The acute febrile attacks, with swollen joints, acid sweats, and cardiac complications; (2) rheumatoid arthritis and its varieties; (3) the so-called chronic rheumatism, characterized by persistent recurrences, with little or no rise of temperature, little or no swelling of the joints, and lameness out of proportion to the articular changes. Although the essayist admitted the infectious nature of acute articular rheumatism and the possibility of a similar influence in the production of some of the other forms, he thought that the brunt of attack in all fell upon the peripheral nervous system. Chronic rheumatism, muscular rheumatism, lumbago, and myalgia, he regarded as forms of peripheral neuritis, and he had been struck by the frequency with which such attacks are preceded by some acute infection, more particularly by influenza, tonsillitis, diphtheria, summer dysentery, or whooping-cough. Arthritis deformans, the so-called rheumatic gout, he considered as unquestionably a neurotrophic disorder, probably of infectious origin. Whether it was specific in character or not, has not been determined. Acute articular rheumatism he believed to be a toxic peripheral neuritis, the changes in the joints being secondary. The disease was undoubtedly infectious, but he did not think that the specific nature of the infection had been proved. It might possibly be the result of a number of zymotic diseases. With reference to treatment, he considered the salicylates devoid of specific action or influence on the infectious agent. They were useful chiefly for the relief of suffering, but did not shorten the duration of the disease or prevent cardiac complications. Diet was not of much importance in his estimation. There was at least no prescribable diet. The food should be of such character as to keep the patient in good condition, and this varied with different persons. The diet must therefore be an individual one. The elimination of toxic matter must be taken into account. The rheumatic patient was a neurotic individual and he was therefore peculiarly affected by food. Some could eat meat, lobsters, almost any kind of food, while others must be more abstemious, but not on account of peculiarities belonging to the infection.

Effects of Saline Mineral Waters on Diseases of Metabolism and Nutrition.— Dr. L. D. MEAD of Byron Hot Springs read this paper, in which he reviewed the history of mineral water medication, the attitude of the profession in regard to it in the past and at the present time, the influence of Sir William Roberts, his writings, and experiments, some of which he criticised. The important experimental and clinical investigations of von Noorden and his followers were referred to. This was followed by a review of the essayist's personal experiences in the mineral water treatment of a large number of diseases, particularly in gastric, nervous, and articular affections. Cases were cited to illustrate the relative benefit obtained from the administration of the saline waters and that from change of climate and environment obtained through residence at the springs. Emphasis was laid on the importance of leaving the instruction of patients to the resident physicians. Too many persons come to the resorts with instructions from their home physician to drink quantities of the water which, if it were possible for an ordinary stomach to contain them, would preclude the possibility of indulging in food.

Diet and Hydrotherapy in the Treatment of Rheumatic and Gouty Conditions.— Dr. ROBERT CRESS of Paso Robles Hot Springs read this paper. The speaker attributed greater importance to the benefit of diet in the treatment of these affections than did Dr. Hutchinson and agreed in great measure with the last speaker in regard to the benefits of water both internally and externally applied.

These papers were discussed by Drs. A. J. Sanderson of San Francisco, Dr. Pierce of Colfax, and other members of the society.

The Differential Diagnosis Between True Sciatica and Diseases of the Urethra and Adnexa.—Dr. G. S. PETERKIN of Seattle, Wash., presented this communication. He insisted especially upon the necessity of correct diagnosis. The speaker thought that a great many cases of supposed sciatica were examples of reflex pain arising from pathological conditions in the urethra. This was true of both male and female patients, but it was more often encountered in the male. It is important, he thought, to make a careful examination of the urethra and adnexa in all cases of sciatic pain before coming to the conclusion that the case is one of true sciatica.

SECTION ON GENITOURINARY AND SKIN DISEASES.

This section met in joint session with the Pacific Coast Urological Association. The program embraced three papers and a business session of the section. The titles of the papers were: "A Combination of Syphilis and Epithelioma of the Tongue," by Drs. D. W. Montgomery and H. M. Sherman of San Francisco, "The Etiology and Recent Experimental Work in Syphilis," by Dr. Alfred B. Grosse of San Francisco; and "Alopecia Areata," by Dr. Alexander Garceau of San Francisco.

OPHTHALMOLOGY AND OTOLOGY.

The section of the eye, ear, nose, and throat met in joint session with the Pacific Coast Ophthalmological and Otolaryngological Societies. The following papers were read: "The Amplitude of Accommodation and its Importance in Connection with Eyestrain," by Dr. Edward Jackson of Denver, Colorado. "Subnormal Accommodation of the Eye," by Dr. F. B. Eaton of San Francisco, in which the speaker referred to the frequency of the condition, especially in youth, the obscurity of the symptoms, and the common failure to recognize it. "The Use of the Stenopic Slit in Refraction, by Dr. W. Scott Franklin of San Francisco, who had found most benefit from a slit 1 mm. in width and 5 mm. in

length. Reference was made also to the frequency of careless work in refraction and the too great reliance on individual tests. All tests were only corrohorative. "Ocular Lesions Associated with Constitutional Diatheses," by Dr. H. I. Jones of San Francisco. "General Diseases as a Cause of Diseases of the Eye," by Dr. H. M. Ward of Woodland. "Students' Eyes" by Dr. W. F. Snow of Stanford University. "Report of a Case of Keratitis Fungoides (Aspergilliana)," by Dr. Stillson of Seattle.

Ophthalmological Societies on the Pacific Coast.—A discussion was had on the propriety of continuing the Pacific Coast Ophthalmological Society as an independent organization. Dr. David DeBeck of Seattle, the secretary appointed at the organization of the society at Portland, reported that a large number of specialists along the Pacific slope had signified their willingness to become active members, but some of those present thought that the society should merge with the proposed Pacific coast branch of the Ophthalmological section of the American Medical Association, and a committee was appointed to consider the matter in connection with a similar committee from the Otolaryngological Society.

TENNESSEE STATE MEDICAL ASSOCIATION.

Seventy-third Annual Meeting, Held at Memphis, April 10, 11, and 12, 1906.

The Association met at the Peabody Hotel, under the presidency of Dr. Cooper Holtzclaw of Chattanooga.

Cholecystectomy.—Dr. Battle Malone of Memphis said that practically all surgeons agreed that excision of the gall-bladder was clearly indicated in (1) primary carcinoma of the gall-bladder; (2) gangrene, phlegmon, or empyema of the gall-bladder; (3) when the viscus was badly lacerated, as from gunshot wounds, etc.; (4) in impaction of stone in the cystic duct, which could not be displaced; (5) when the gall-bladder was greatly thickened and contracted. The operation could be done in the average case just as quickly and in many cases more quickly and with as little danger to the patient as cholecystostomy. After drainage of the gall-bladder there were necessarily adhesions which must be a source of more or less discomfort to the patient. In view of the present accepted theory of the etiology of gallstones, it would seem that the adhesions by constant tugging on the gall-bladder would tend to cause a recurrence of cholecystitis and the reformation of stones. As illustrative of this, he reported two cases that came under his observation in which cholecystectomy was performed. While he would not advocate the removal of the gall-bladder as a routine measure, he believed that if the operation was done more frequently there would be less unpleasant post-operative symptoms, and fewer patients would be subjected to a secondary operation. He felt less anxiety for the future of a patient whose gall-bladder had been removed than when it had been drained.

Dr. John L. Allen of Brownsville indorsed the position taken by the essayist with regard to removal of the gall-bladder. If a stone was impacted in the cystic duct, drainage would give more trouble than the removal of the gall-bladder.

Dr. J. A. Crisler of Memphis quoted Murphy as saying that the ideal operation should be drainage of the gall-bladder, leaving the gall-bladder itself in its proper place; that it acted as a drainage tube. He thought the removal of the gall-bladder without drainage was almost a useless operation, unless the operation was done for gangrene, for gunshot wound, or for some traumatic lesion.

Dr. W. A. Bryan of Nashville said he had the pleasure last July of spending some time with the Mayos of Rochester, Minnesota, when he saw them operate on six or eight gall-bladder cases.

Dr. M. C. McGannon of Nashville said that from his reading of the literature he had come to the conclusion that cholecystectomy was being done less and less. He did not think it was essential to remove every gall-bladder that was found to be diseased. A better method of dealing with this subject was to study pathology as we found it.

Dr. J. A. Gaines of Nashville emphasized the fact that empyema of the gall-bladder, unless the organ was markedly contracted, did not ordinarily demand cholecystectomy, but drainage. However, cholecystectomy was often indicated in gangrenous or traumatic conditions.

Dr. Lucius E. Burch of Nashville said that in a case of gangrene of the gall-bladder, or gunshot wound of the gall-bladder, the gall-bladder should be removed. On the other hand, if there were stones in the gall-bladder without any involvement of the cystic duct or of the common duct, drainage should be instituted.

Coprostasis.—Dr. T. J. Happel of Trenton reported the case of a married woman, who gave a history of indigestion, with suffering in defecation, accentuated at each menstrual period. The patient's condition was such that it was necessary to resort to laparotomy. The author emphasized the following points: (1) The necessity of a careful examination per rectum and per vaginam of all cases presenting evidence of long-continued disturbance of the bowel not relieved by medicinal measures. (2) When this was refused, to dismiss the patient, so as to assume no further responsibility. (3) If the patient remained in one's care he should insist on a laparotomy being done promptly, not allowing the patient to get in extremis before an operation was permitted. (4) In this case the gut was found so full that it could not be moved without tearing the gut. (5) The rapid improvement in the condition of the patient after operation. (6) The passage of feces from the rectum after the formation of an artificial anus. (7) The apparent discharge from the bladder of feces on two occasions, and then the cessation of this condition, with the complete stoppage of all leaks into the bladder. (8) Recovery of the patient from what seemed to be, when the abdomen was opened, a hopeless condition.

Dr. John L. Allen of Brownsville reported two similar cases, although their condition was not so marked or distressing. It was difficult, however, to move the bowels of these patients even with enemas. He spoke of the condition as being due to a hypertrophy of Houston's valves, and succeeded in curing these two patients by clipping the rectal valves. Since then he had resorted to this procedure in a great many cases of obstinate constipation, with successful results. He was inclined to the belief that fully 50 per cent. of the cases of constipation were due to a thickening of these valves.

Dr. A. B. Cooke of Nashville congratulated the essayist on the wonderfully good result he had obtained, considering the desperate condition of the patient. He had never seen any such accumulation of fecal matter in the intestinal tract, nor but one patient who was in such an extreme general condition. He thought Dr. Happel was justified in resorting to a laparotomy in this case.

Nephrolithotomy, with Subsequent Nephrectomy.—Dr. W. D. Sumpter of Nashville said the early recognition of renal calculi was important to prevent atrophy, hydronephrosis, infection, pyonephrosis, perinephritic abscess, fistula, and anuria. A timely operation before the patient was in a weakened state was desirable; yet the difficulty was clearly shown in Doran's report that in 24 kidneys and stones found, only 11 had had symptoms of calculi. Aseptic concretions might remain a long time, with no evidence of their presence. The author's patient had no definite pain when the four calculi were in the pelvis of the kidney, until the gravid uterus of six and a half months had pressed upon it, and an abscess resulted. The quiescent state of the kidney, with sixteen stones remaining after nephrolith-

otomy, was corroborated by the citation of similar statistics. Although pain was of great diagnostic value, it was often absent or deceptive. At no time was blood detected in the urine. Frequent urination was absent until two weeks before nephrectomy, but never necessitated emptying the bladder during the night. In nephrectomy for suppurating kidney drainage was of great importance. Whatever the renal lesion, whatever the incision chosen, careful, conservative methods, especially avoiding the causation of shock, which was the greatest factor in the fatal termination of kidney surgery, would be productive of results that were satisfactory in the hands of the painstaking surgeon.

The President's Address.—Dr. Cooper Holtzclaw of Chattanooga selected as the subject for his presidential address, "The Day's Work." He said that the day's work in the life of a busy practitioner of medicine brought forth many things for consideration. It brought many thoughts, good, bad, and indifferent, mostly bad and indifferent. It brought him nearer to actual life than it did most men, and if Pope was correct in saying that "The proper study of mankind is man," certainly the physician's day's work gave greater opportunity to observe both sides of life, the outside as well as the inside. In order that we might be better fitted more correctly and accurately to observe these wonderful phases and phenomena of life and death, it was proper that physicians should be better educated and prepared for this. A college education and a four-year medical course were absolute prerequisites to the practitioner, but to be most successful he must possess the heart of a lion, the brain of an Apollo, the eye of an eagle, and the gentle touch of a lady's hand.

Extrauterine Pregnancy.—Dr. Richard Barr of Nashville reported a case of double uterus, with extrauterine pregnancy. The patient was a negress, aged 17 years. The specimen exhibited showed a distinct double uterus, with two cavities without connection. Each cavity was connected with the corresponding Fallopian tube, and each must have opened separately into the vagina, although careful search of the vagina failed to show the opening of the right organ. The blood cyst of the right tube was taken to be an extrauterine pregnancy, with intratubal hemorrhage, and death of the ovum. The unusual features about the case were the double uterus and extrauterine pregnancy; the fact that the pregnancy had occurred by a route almost impossible of demonstration after removal of the uterus; while on the other side the way was wide open, so to speak. The pregnant tube was twisted around, swinging forward, so that it pointed to the left and rode on the anterior wall of the uterus, while its ovary lay in Douglas's *cul de sac* under the uterus, and was so uninvolved as to be without adhesions to any structures. The shutting off of Douglas' pouch by adhesions left the pocket perfectly normal, which contained the right ovary. The cecum and appendix were mobile; the latter organ was located in a vertical position just behind the median line of the abdomen. The author reported another case of extrauterine pregnancy in a negress, aged 24.

Dr. F. D. Smith of Memphis said that nearly all the cases of so-called hematosalpinx, pelvic hematocele, were probably the result of tubal pregnancy. He reported two cases of extrauterine pregnancy.

Dr. William Litterer of Nashville said that many cases reported as extrauterine pregnancies were not such, but were hematosalpinx or ordinary hematomas.

Traumatic Lesions of the Brain and Skull.—Dr. J. L. Crook of Jackson limited his remarks to fractures of the vault of the skull. The symptoms of these injuries varied materially. All suspected cases were to be operated and inspected. The only occasion where doubt could exist was in fracture of the inner table alone, and here, if there were any localizing symptoms or evidence of intracranial injury, the use of the trephine was justified and demanded. If the case were one of depressed fracture, a medium-sized trephine should be used and the depressed portion elevated, thus restoring the normal convexity of the skull. If the fracture were a comminuted one, the particles should be entirely removed and the edges of the fracture smoothed with the rongeur forceps. The author reported four cases of traumatic lesions of the skull and brain, all of which demonstrated the necessity for prompt exploratory operations in all instances of cranial injury when a positive diagnosis could not be made from the original wound. He said the truest conservatism was that which gave the patient the best chance for a rapid and perfect recovery.

Osteosarcoma of the Lower Jaw.—Dr. Duncan Eve of Nashville removed this tumor of the jaw, which was enormous in size, being ten and a half inches in its vertical diameter and nine inches in its transverse, from a negress. The surface of the tumor was perfectly smooth, and the mass was hard and incompressible over its entire extent. The skin was sound, and there was no enlargement of the superficial veins or infiltration except on the cheek of the affected side. The steps of the operation were detailed. He presented photographs of the patient before and after operation.

What Are the Safest Criteria for the Estimation of Renal Lesions?—Dr. Raymond Wallace of Chattanooga summarized a paper on this subject in this wise: Our methods for accurately estimating kidney pathology were sadly deficient, particularly when based upon the significance of albumin and casts. Extrarenal sources of albuminuria and various so-called physiological or functional forms must be carefully eliminated wherever a shadow of doubt as to actual renal lesion existed. Various clinical data to be found on physical examinations offered valuable aids in diagnosis and prognosis, particularly the detailed history of the case, which might suggest an actual causal factor in past habits, or illnesses; in edema, in retinal changes, in cardiac hypertrophy, and in a pulse of increased tension with an accentuated aortic second sound. Renal capacity, as shown by the urine, was revealed, not so much in the so-called pathological substances eliminated as in a deficiency in the excretion of normal product, as made known by the total twenty-four-hour quantity, the specific gravity, and color.

Local and Regional Anesthesia in Rectal Surgery.—Dr. A. B. Cooke of Nashville pointed out some of the advantages of local anesthesia in rectal surgery. He felt warranted, from personal experience, in claiming that it was simple, safe, and effective. It eliminated the dangers and discomforts of general anesthesia. Pain at the time of operation was usually absent, and always so slight as to be easily borne. Post-operative pain was less by far than after the old methods. The time required for the operation was greatly reduced. Confinement to bed was rendered a matter of expedience rather than necessity. The period of detention from business was diminished fully one-half. Under this method the hospital became a convenience and luxury rather than a dreaded essential. It was a thoroughly reliable means of affording relief in many cases which would otherwise be unsuitable for operation. It robbed these operations of their terrors, and made it possible to reclaim this work from the hands of the "no-knife advertisers."

Doctor, Druggist, and Proprietary Medicines.—Dr. J. L. Andrews of Memphis read a paper on this subject, in which he offered some practical conclusions. The greatest danger in patent medicines was in their indiscriminate use without any sort of judgment. As conditions were now, exactly the same thing was true of proprietary medicine, there being in this respect little or no difference between the two. Druggists, all of them, ought to stop counter prescribing. The author introduced a resolution, which was adopted unanimously, to the effect that the society looked with favor on the establishment of a drug store solely for physicians' prescriptions, and the sale of staple drugs and sickroom accessories—no counter prescribing, no patents, no side lines, cigars, or soda water. The druggist derived only the smallest profit from the sale of patent medicines. The Tsar of Russia was no more

autocratic than the patent medicine sharks. Quite recently an elaborate system had been put in operation by which any druggist, who varied in the slightest particular from a fixed price, could be detected, and in the future he could buy no more of the system's goods. In the face of these restrictions the druggists ought to decline in the future to sell patent medicines. Let the department stores have the patent medicine business. According to a recent statement of a patent medicine maker, women bought and used nearly all the patent medicines that were sold. In the department stores they could buy these things at bargain-day prices to their hearts' content. There could be no question that physicians were now prescribing proprietary medicines to an extent that was reprehensible. The druggist should have a chance to elevate and dignify his entirely worthy profession by efforts at scientific and elegant pharmacy. The physician ought to be able to tell at a glance whether or not his prescription had been properly compounded. For the druggist, the speaker wanted to reiterate that he had none other than the kindliest feeling. He was overworked and underpaid, and Dr. Andrews was in favor of any legitimate measure which would alleviate these conditions. He had a firm conviction that the druggist's best hope of professional elevation and advancement lay with physicians, and it was the plain duty of every physician to exert himself to bring about this end.

Surgical Treatment of Uterine Fibroids.—Dr. J. W. Barksdale of Memphis limited himself to the surgical aspect of these growths, with especial reference to the complications and degenerations with which they were so frequently associated. Operations on fibroids had a mortality of approximately 5 per cent., which was not very much in excess of the average percentage of cases in which the abdominal cavity was invaded for all cases; yet Dr. T. B. Eastman of Indianapolis, in 117 cases operated on, found 43 that presented complications that might have terminated fatally. The author indorsed the position taken by some of the foremost workers in the field of gynecology, who laid down the broad rule that all fibromyomata should be removed as soon as diagnosed.

Appendicostomy.—Dr. G. C. Trawick of Nashville said that this operation was performed first by Dr. Robert F. Weir, about four years ago. The name was suggested by Dr. Willy Meyer. The purpose of the operation was to utilize the appendix as a means of irrigation and the introduction of medicaments through its lumen into the large intestine. That this procedure was justifiable in cases of chronic colitis and sigmoiditis after internal medication and high irrigations had proved ineffectual the author demonstrated. He considered, first, the usual treatment for chronic colitis. The most usual disease for which this operation was performed was amebic colitis; but it had also been done for syphilitic ulcerations of the colon, multiple papillomata, chronic diarrhea with bloody stools, and mucous colitis. The author's experience with this operation had been very favorable. Out of 24 reports of this operation there had been 20 cures, with one death, one result unknown, and one death from pulmonary tuberculosis.

Treatment of Amebic Dysentery.—Dr. John L. Jelks of Memphis had found this disease indigenous in Memphis territory. His investigations had proven to him that the ameba, morphologically at least, was identical with the organism referred to by Musgrave and Strong in Manila, by Shiga and Lafleur and others, and was the chief pathogenic factor of this disease. He thought that in the vast majority of cases the sigmoidoscope could be made to pass all visible foci of invasion, yet in some of these cases the disease had been of long duration. Extensive undermined ulcers seemed to extend down to the muscular coat, and in one case an abscess developed in the liver. As to treatment, the author disinfected the entire colon by flushing through a tube of his own design with a solution of fifteen to thirty minims of formalin and a teaspoonful of boracic acid to each quart of warm water, which fluid passed out through the drainage tube. He then introduced through a small tube with a piston syringe one ounce of olive oil and a dram of bismuth subnitrate. This latter mixture relieved the painful effects of the formalin solution, and furnished a protecting coating to the inflamed viscus. Later, when the patient was placed in the genupectoral position, the proctoscope or sigmoidoscope was introduced, and all ulcers were cauterized with silver nitrate, thirty to sixty grains to the ounce. The entire inflamed area was then sprayed with an antiseptic dried and insufflated with aristol and boracic acid.

Life Insurance Examinations.—A resolution was unanimously adopted by the association, "That the Tennessee State Medical Association recommends to all affiliated county societies to make no insurance examinations for old line life insurance companies for less than $5. This resolution is to have no bearing upon those fraternal orders where the examinee pays for his own examination.

No State Journal Wanted.—In the House of Delegates the matter of whether the association should continue to publish its proceedings in an annual volume or in journal form was brought up by Dr. G. C. Savage. After an animated discussion it was decided to continue the publication of the annual volume of Transactions. The general consensus of opinion was that the time was not ripe for the publication of a monthly medical journal.

The following papers were read: "The Significance of Disturbed Reflexes," by Dr. Michael Campbell, Bearden; "Hemorrhage in and Around Nerve Tissue," by Dr. Hazel Padgett, Nashville; "Injuries of the Eyeball, with Report of Cases," by Dr. J. W. Price, Memphis; "Pterygium: Its Relation to the Refraction of the Eye,' by Dr. George H. Savage, Memphis; "The *Treponema Pallidum* of Syphilis," by Dr. Wm. Litterer, Nashville; "Vesical Fistulæ in Women," by Dr. W. A. Bryan, Nashville; "Rectovaginal Plastic Surgery," by Dr. M. C. McGannon, Nashville; "Notes on Cases of Gastroenterostomy for Chronic Digestive Disorders," by Dr. W. D. Haggard, Nashville.

Officers.—The following officers were elected for the ensuing year: *President,* Dr. L. A. Yarbrough of Covington; *Vice-Presidents,* Drs. J. L. Andrews of Memphis, A. B. Cooke of Nashville, and J. R. Rathmell of Chattanooga; *Secretary,* Dr. George H. Price of Nashville, reelected; *Treasurer,* Dr. W. C. Bilbro of Murphreesboro, reelected; *Delegate to the American Medical Association,* Dr. T. J. Happel of Trenton; *Alternate,* Dr. Heber Jones of Memphis.

Nashville was selected as the place for holding the next annual meeting in 1907.

MEDICAL ASSOCIATION OF GEORGIA.

Fifty-Seventh Annual Meeting, Held at Augusta, April 18, 19, and 20, 1906.

Dr. W. Z. Holliday, of Augusta, President.

The Proper Management of Chronic Suppurative Inflammation of the Middle Ear.—Dr. Dunbar Roy of Atlanta said there were two kinds of chronic discharges: (1) A catarrhal, mucoid secretion, free from odor except when the ear had not been cleansed for some time, coming from the middle ear through a perforation in the drum, associated with the same kind of catarrhal secretion in the nose and nasopharynx. This condition could nearly always be cured by local therapeutic measures directed to both the ear and the nasal mucous membrane. This form of middle ear discharge was frequently seen in children, especially those with adenoids in the nasopharynx, and in those recovering from measles and scarlet fever. Proper and thorough treatment of this form would effect a cure. Frequently the only thing necessary was the removal of the adenoids. However, if the condition was not treated, it would pass into the next form. (2) Discharge from the middle ear of a whitish, desquamated epithelium, with purulent fetid secretion, destruction of the drum membrane, and in many cases erosion and liquefaction of the auditory

canal at the point where the drum should exist. This was the form that must usually be designated as chronic. The treatment of chronic suppurative otitis was divided into two heads: (1) Conservative, or such as were treated by the local application of medicinal remedies; and (2) radical, or such as were treated by surgical intervention. These two forms were dwelt upon at length. In the performance of the radical operation upon the middle ear the author said that the occurrence of the following results should be considered and intelligently placed before the patient or his parents before the same was undertaken: (1) Injury to the facial nerve, with a consequent facial paralysis for a more or less definite time. (2) A loss in the amount of hearing power in that ear, as compared to that which existed before the operation. (3) A possibility that the discharge might not be entirely cured. (4) A last possible result that hardly needed to be considered, and that was an injury to the sigmoid sinus, an accident not likely to happen to the careful operator. The technique of the operation was described.

Dr. C. L. Williams of Columbus reported the case of a boy, 12 years of age, which illustrated very strikingly the fact that discharges from the ears of patients ought not to be viewed lightly.

Dr. R. B. Ridley of Atlanta said the longer he practised and saw cases of chronic ear trouble, the more thoroughly was he impressed with the fact that the radical operation was the only treatment for chronic suppuration of the middle ear.

Dr. L. Amster of Atlanta said that in many cases the physician should be censured for not paying early attention to these cases of ear discharge, which eventually developed into chronic middle-ear trouble, especially after measles, scarlet fever, etc.

Dr. J. L. Hiers of Savannah denounced in the strongest terms the insufflation of powders in these cases, as in his hands they had been more harmful than beneficial. The wet treatment, syringing with strong antiseptic solutions, was best suited to the individual case. He emphasized the importance of using the dry treatment and of packing the ear lightly with absorbent gauze, preferably bichloride or iodoform gauze.

Dr. Henry R. Slack of LaGrange had found that the wet treatment was decidedly the best, especially if it had to be intrusted to a member of the family. In getting rid of granular conditions in the ear he had frequently found nitrate of silver very efficacious.

Some Remarks on Chronic Conditions.—Dr. H. McHatton of Macon said that with the present relative positions so commonly held and the lack of correlation between the various medical attendants, a patient was still in extreme danger. To illustrate, he had a patient some time since with an active secondary syphilis, which in due course invaded two organs presided over by specialists. He promptly consulted the most accessible authority on each organ. Each authority made a diagnosis of syphilis, and put the patient on the mixed treatment. As each of them had every reason to believe that he was the only attendant, and the patient was very good about taking his medicine, the result was most unpleasant. To his brother practitioners he would insist that when a patient came to him who was not directly under the observation of a general practitioner, whose general condition could not be fully and absolutely accounted for by the local lesion which he was treating, it was as much his duty to refer said patient to a competent general practitioner as it was for the general practitioner to refer him to the specialist, and even more so, because a life was often lost that could be saved. The innocent patient had every reason to believe that he was getting the full benefit that could be derived from medical science when he was not. Many errors in diagnosis were not from lack of knowledge, but from incomplete examinations and insufficient time for observation of the case. One should not hesitate to tell a patient that he did not know what the disease was, and it might take time and repeated examinations to make an accurate diagnosis.

This paper was discussed by Drs. Dunbar Roy, W. S. Elkin, J. L. Hiers, St. J. B. Graham, R. Lattimore, Louis H. Jones, L. Amster, J. C. King, C. L. Williams, M. A. Clark, W. B. Hardman, E. B. Bloch, and S. A. Visanska, all of whom took the position that the work of the specialist should go hand in hand with that of the general practitioner.

Needed Legislation on Pure Food Laws for Georgia.—Dr. O. H. Buford of Cartersville, in a paper on this subject, said that it devolved on the medical profession to educate the masses to see the importance of having wholesome food, to build strong bodies, so that they might withstand the inroads of disease. The medical profession of the State wielded great power for good if they would realize that they were the watchmen on the towers. The author made an eloquent plea for more stringent laws with regard to pure food.

Dementia Præcox.—Dr. J. W. Mobley of Milledgeville said that dementia præcox was a chronic progressive psychosis with a peculiar tendency toward dementia, and having its determining features represented in a peculiar chain of symptoms of excitement, delirium, stupor, mannerisms, negativism, verbigerations, stereotypy, and *cerea-flexibilitas*.

Anterior Poliomyelitis.—Dr. J. Cheston King of Atlanta said that an opinion could not be given as regarded recovery from this condition until paralysis took place. At the expiration of two weeks the muscles that reacted to faradism would recover, and those that did not react would either be permanently paralyzed or partially so. In the latter case, as long as the retention of reaction to the constant current remained, there was some hope that the faradic reaction might return, and with it the power of the muscles. At the onset of the attack the patient should be kept quiet in bed and should lie on the face or on one side, and hot applications be made to the spine. He said we could not repair the destruction of cells, but we could facilitate recovery by maintaining the nutrition of the paralyzed parts. When the attack was due to cold the limb should be kept warm from the first; diaphoretics, as liquor ammoniæ acetatis and citrate of potash, should be given. He also recommended the use of ergot and belladonna. After the disease had assumed the stationary condition cod liver oil and tonics were used. Local treatment should not be used until at least a month had elapsed. The limb should then be bathed in hot salt water, and rubbed with a rough towel, and especial care should be taken to keep the limb warm with thick stockings. The muscles should also be systematically rubbed every night and morning. The constant current should be used, both because it dilated the blood-vessels of the part and because the muscles would contract under it and not under faradism.

Paramyoclonus Multiplex.—Dr. E. Bates Bloch of Atlanta reported a case of this affection. The case was interesting not only on account of the rarity of the affection, but the rapidity of the muscular contractions, which far exceeded any other case the author had ever heard of, in that the greatest number of muscular contractions in any case reported heretofore had been 180. While many writers preferred to class this disease with hysteria, it seemed very doubtful if this was the proper view to take of it, in that the motions were such as could not be imitated by any effort of the will, and also that not only individual muscles might be seized with these shock-like contractions, but even portions of the muscles might be so affected, and the violent muscular contractions might take place even without locomotor effects. This disease was very commonly associated with epilepsy.

Recent Studies in Rabies.—Dr. James N. Brawner, Atlanta, referred to the work of Pasteur, Negri, and others. He called attention to the discovery of certain bodies in the central nervous system of animals dead of rabies by Negri, which Negri believed to be the specific

germ of this disease. The value of these Negri bodies as a means of rapid diagnosis was now generally recognized. When the brain of an animal was examined and Negri bodies were found, the evidence was considered positive and a diagnosis of rabies was made. At the Georgia Pasteur Institute, within the last 18 months, the author had demonstrated Negri bodies in 42 dogs and 3 cats, and in every instance the rabbits inoculated died of typical rabies. In three cases in which the inoculation test resulted positively, no bodies were found, although only the hippocampus major was examined and the animals were killed in the first stages of the disease. In 15 dogs and 2 cats, proven not to be rabid, no such structures could be demonstrated. In conclusion, the author said that we now had a reliable method by which the diagnosis of rabies in animals could be made in a few hours.

Specific Organism of Syphilis.—Dr. C. R Andrews of Atlanta described a method of staining *Spirochæta pallida.*

Gallstones.—Dr. George R. White of Savannah read a paper in which he discussed the diagnosis and treatment of gallstones. He reported eight operative cases, and to these he added two others, illustrating the different phases of the disease.

Dr. J. T. Rogers of Savannah followed with a paper in which he discussed at length the differential diagnosis of gallstones.

Typhoid Fever.—Dr. J. E. Sommerfield of Atlanta reported a case of typhoid fever which was followed by abscess of the liver. On aspiration pus was found. Immediate operation was advised, and was performed by Dr. F. W. McRae, who made an incision in the ninth intercostal space and evacuated a large quantity of pus. The patient recovered.

Is There a Continued Fever Other Than Malarial or Typhoid?—Dr. J. W. Palmer of Ailey said that from a clinical standpoint he believed that all questionable cases of continued fever were a variety of mild, uncomplicated cases of typhoid fever, except occasionally they might be malarial. In brief, the author believed that all cases thought to be a third fever, when simmered down to a correct diagnosis would prove to be tvphoid.

The General Practitioner as a Factor in Surgery.—Dr. R. R. Kime of Atlanta said the physician bore a threefold relation to surgery. The first and most important was the prevention of the necessity for surgery. Second, the physician might be a causative factor in developing directly or indirectly conditions that required operative procedures. Third, the physician was often called upon to use his judgment and advise his patient either for or against operative procedures. To secure the best results and place surgery and medicine on a higher scientific basis, the work of the physician and surgeon should be more closely associated and combined with that of the anatomist, physiologist, and pathologist.

Addison's Disease.—Dr. Wm. Clifton Lyle of Augusta reported a case of this disease which came to postmortem. The special points were the freedom of the sclerotics and roots of the nails from pigment; the dark lines of the juncture of the skin and mucous membrane of the lips, and in creases of palms; the hemophilia, acetonuria, the atrophy of the suprarenals, uncommon in persons of that age (55), and the decided improvement consequent upon the administration of suprarenal substance. In this disease, even when marked improvement took place, the patient's life, owing to the abolished function of the suprarenal glands, was extremely precarious, and all patients who had greatly improved or had apparently recovered, should lead inactive lives. They should be warned that they were not cured; that the morbid conditions were still present, and that any overexertion or undue exposure liable to depress the heart, might be attended with grave danger.

Sarcoma.—Dr. O. L. Holmes of Covington reported a case of vaginal sarcoma in an infant, 7 months of age. He presented a study of all similar cases found in the literature.

Intussusception.—Dr. Marion McH. Hull of Atlanta read a paper on this subject, in which he devoted considerable attention to the diagnosis, and said that the principal object of his paper was to aid in making an early diagnosis so that early operation might be performed. He believed that this was the only rational treatment. High irrigation might be used with advantage to aid in reducing the intussusception.

Diagnosis and Treatment of Pulmonary Tuberculosis.—Dr. H. F. Harris of Atlanta said that the treatment of this disease along modern lines was simple. Briefly stated, it consisted in putting the patient practically out of doors night and day, in rest as long as the disease was active, and in supplying a sufficient quantity of good wholesome food. When treated in this way patients improved to an incredible degree in a short time, and where the disease was purely incipient, six months to a year would suffice for a complete cure in a large number of instances. The legislature of Georgia, at its last session, passed an act ordering investigation as to the feasibility of erecting a State sanatorium for the treatment of tuberculous patients.

Early Diagnosis of Pulmonary Tuberculosis.—Dr. T. E. Oertel of Augusta called attention to the distressing frequency with which cases of pulmonary tuberculosis passed unrecognized until they had become almost hopeless, and urged the necessity for more careful methods of diagnosis.

Appendicitis.—Dr. Floyd W. McRae of Atlanta presented some general observations and statistics regarding this disease. He said the cardinal diagnostic points were pain, general or localized; muscular tension on light palpation; tenderness on deep palpation, with or without an appreciable tumor. He laid stress on the point that appendicitis was first, last, and all the time a surgical disease, although not always under all conditions an operative one. Early diagnosis and prompt operation in all cases would reduce the mortality to less than 2 per cent.

Several other papers were read and discussed.

The Pure Food Bill.—A preamble and resolutions were adopted to the effect that the pure food bill at present before the Congress of the United States, known as the Hepburn Bill, met with the approbation of this body, representing the medical profession of Georgia, and that the association earnestly requested the Senators and Representatives in Congress from the State of Georgia to vote for the said bill, and to use all their influence to further its passage.

Life Insurance Examinations.—It was also resolved, that it was the sense of the association that the minimum fee for life insurance examinations should be $5.00.

Officers.—The following officers were elected: *President,* Dr. H. H. Martin of Savannah; *Vice-Presidents,* Drs. T. E. Oertel of Augusta, and J. W. Palmer of Ailey; *Secretary-Treasurer,* Dr. Louis H. Jones of Atlanta; *Delegates to the American Medical Association,* Drs. T. D. Coleman of Augusta, George R. White of Savannah, and H. F. Harris of Atlanta.

Savannah was selected as the place for holding the next annual meeting.

The Sterilization of Surgical Knives.—Grosse has solved the problem of rendering knives sterile without impairing their cutting edge or causing rust spots to appear, by the following procedure: Glass tubes resembling large test tubes in form are provided with racks for the knives and with a suitable stopper. The closed tubes are placed for ten minutes in the steam sterilizer. The knives are in this way rendered absolutely sterile, as enough moisture is present in the air contained in the tube to effect thorough steam sterilization, but on allowing the tube to cool the moisture condenses on the glass and not on the metal, so that there is no danger of rusting.—*Archiv für klinische Chirurgie.*

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, April 6, 1906.

The President, Dr. T. Mitchell Prudden, in the Chair.

Three Cases of Cervical Rib.—Presented by Dr. Lewis A. Conner. This condition, the speaker thought, must be much commoner than was generally supposed. Although, up to a year or two ago (1904), only 34 cases had been recognized during life, a good many more cases had been met with in the dissecting room. The supernumerary rib usually sprang from the seventh cervical vertebra; more rarely from the sixth. In two-thirds of the cases the condition was bilateral. The ribs varied in length, sometimes barely projecting beyond the transverse process of the vertebra; sometimes extending quite around the anterior of the thorax, and even uniting with the first rib or sternum. In a small percentage of the cases the condition gave rise to very definite symptoms, which were due either to pressure on the brachial plexus or to interference with the circulation through the subclavian artery; the artery was sometimes lifted up and flattened, simulating an aneurysm, or even a true aneurysm might be produced.

The first case shown by Dr. Conner was a man of 55 years, treated in the Hudson Street Hospital for chronic nephritis. The supernumerary rib could be felt on each side directly above the clavicle, but on the left it projected somewhat further forward and had lifted up the subclavian artery so that this could be seen and felt as a broad pulsating mass quite suggestive of an aneurysm. There were no subjective symptoms.

The second case was that of a young girl of 17 years, who for several months had had almost constant pain in the left shoulder. There was also occasionally slight pain in the arm when the elbow was straightened suddenly. It was probable that this pain was due to the presence of the cervical rib, but as there were in the patient a few signs suggestive of incipient phthisis, this question had not yet been definitely settled.

The third case, a woman of 30 years, had been recognized by Dr. Patterson in the course of a routine examination in the dispensary. There were no symptoms.

In all these cases the ribs were bilateral. Radiographs of all the cases were also shown.

Dr. M. Allen Starr said that in a case of brachial neuritis in a woman, 28 years old, who had applied for treatment at the Vanderbilt Clinic recently, Dr. S. P. Goodhart, after examining her, came to the conclusion that her symptoms were due to the presence of a cervical rib. The diagnosis was confirmed by an *x*-ray picture, which showed a supernumerary rib on each side attached to the first rib. The brachial neuritis was undoubtedly due to the pressure which a rather tight collar and thick dress exerted on the nerves that passed over this rib.

Two Cases of Marked Venous Obstruction.—Dr. W. Gilman Thompson presented these patients through the courtesy of Dr. Theodore B. Barringer, Jr. The first case was that of a man, 39 years old, with an aneurysm of the transverse arch of the aorta. About seven weeks previously, without any previous symptoms, and while apparently in good health, he had a fit of coughing, and felt something "snap" near the left collar-bone. This was immediately followed by a swelling in that region, and the gradual development of edema of the left shoulder, arm and hand, together with considerable pain. He came under Dr. Barringer's care, who had an *x*-ray picture taken, which showed an increase in the shadow of the transverse arch of the aorta. There was marked distention of the veins over the anterior aspect of the left shoulder and chest, with a good deal of edema, which still persisted in part. The case was of interest, Dr. Thompson said, on account of its sudden onset and the extreme degree of the swelling and venous engorgement. There was no bruit, nor was there any difference in the pulsation of the two radial arteries.

The second patient shown by Dr. Thompson was a man of 62, with a very marked engorgement of the inferior mammary vein and the posterior azygos vein on the right side, together with a number of the superficial abdominal veins. The case was one of pulmonary tuberculosis, and Dr. Barringer, who had studied it very carefully, had come to the conclusion that the venous obstruction was very likely the result of enlarged bronchial glands pressing upon the superior vena cava, apparently below the entrance of the inferior mammary vein into the innominate. An *x*-ray picture showed some enlargement of the bronchial glands, and infiltration of the right lung.

Dr. Theodore B. Barringer, Jr., said that several cases similar to this one had been reported in which the obstruction proved to be due to a sclerosis of the bronchial glands, which exerted pressure on the superior vena cava.

Dr. Thompson said the chief point of interest in connection with the second case he had shown was in regard to the etiology. The explanation offered by Dr. Barringer, namely, that the venous engorgement was due to pressure produced by the enlarged chain of bronchial glands, was probably the correct one. In connection with such a condition, the question naturally suggested itself whether there was any congenital defect in the vascular walls. In a somewhat similar case, which was operated on by Dr. Briddon at the Presbyterian Hospital, and subsequently reported by him, there was an enormous distention of the veins of the abdominal wall, which was supposed to be due to a congenital defect in some of the superficial veins in connection with a large nevus. Upon operating it was found that the process extended deeper than had been anticipated, and the patient bled so profusely that it was impossible to complete the operation.

Cerebellar Apoplexy.—By Dr. M. Allen Starr. (See page 737.)

Dr. Charles L. Dana, in speaking of the frequency of cerebellar apoplexy, said that one of his students had written a thesis on the general subject of apoplexy last winter, in which he had collected 183 consecutive cases occurring in Bellevue and other hospitals, and of that number four were cases of cerebellar apoplexy and three of cerebellar softening. These figures, Dr. Dana said, corresponded very closely with his own statistics as showing the comparative frequency of the cerebellar cases, which was about 3 per cent. The symptomatology of cerebellar apoplexy had been very accurately described in Dr. Starr's paper, and was well illustrated by his cases. There was another type of the condition which was, perhaps, most frequently met with in hospital practice. Its usual mode of onset was with headache and vomiting, and intense vertigo, followed, in the course of a week or earlier with symptoms of bulbar compression and involvement of the fourth ventricle. These patients were usually brought into the hospital in a comatose state, and died in the course of a few hours with Cheyne-Stokes respiration, disturbances of the pulse, etc.

Dr. Dana said that cerebellar conditions had in recent years excited a considerable degree of special interest, and he felt confident that more light would soon be thrown upon that subject, especially in connection with symptoms that had hitherto been usually attributed to the ear or stomach, or to general neurasthenic conditions. He recalled one case of typical cerebellar hemorrhage which had been treated for five or six years as one of neurasthenia, and he expressed the opinion that many of the asthenic and unusual functional conditions might be explained by cerebellar disturbance. The condition of asthenia or so-called asynergy which was accompanied by great exhaustion lasting for a number of hours, and in which the patients sometimes allowed objects to drop from their hands because of weakness, was rather characteristic of cerebellar disturbance. The suggestion made by Dr. Starr that persistent vertigo in old people pointed to cerebellar, rather than to ear or stomach trouble, was very significant. With cerebellar trouble, the position of the head was often

very characteristic. The head was held up straight, as though the patient was balancing something on it, and there seemed to be a disinclination to turn the head suddenly without at the same time turning the whole body.

Dr. Francis P. Kinnicutt suggested that some of the lighter attacks of vertigo in old people were due to an intermittent claudication of sclerosed cerebellar vessels.

Dr. Starr thought that such an explanation was very probable, and he said that in many instances, instead of being regarded as aural or gastric in origin, the milder attacks of vertigo should be looked upon as one of the prodromata of cerebellar apoplexy, and placed in the same category as were temporary attacks of numbness of the hand or foot, or a transient difficulty of speech.

Dr. Edward G. Janeway said that vertigo was a very troublesome symptom for the physician to deal with, and was often difficult to classify. While physicians, as a rule, were too apt to consider the stomach or ear responsible for such attacks, a certain percentage of the cases were doubtless attributable to those organs. In the more persistent forms of vertigo, however, a cerebellar origin seemed probable, and in dealing with those cases the physician was easily misled by the vomiting, which was a very usual symptom.

Dr. Starr said he would hesitate to make a diagnosis of cerebellar apoplexy in a case where the only symptom was transient attacks of vertigo. It was in the severe, persistent cases that diagnosis should be suspected.

Dr. Attilio Caccini of Rome, Italy, reported two cases of cerebellar apoplexy in which the symptoms were very similar to those described in Dr. Starr's paper, among the more prominent being dizziness, nausea, vomiting, and pronounced nystagmus. In both cases the patients were young men who, after severe attacks of tropical malaria, developed post-malarial anemia; in both there was hematemesis, and in both the autopsy showed a cerebellar hemorrhage.

Radiographs of Fracture of the Humerus Simulating Malignant Bone Disease.—Dr. Robert Abbe reported a case which had been referred to at a previous meeting of the Society. It was that of a boy of 10 who, while throwing a stone into a chestnut tree, sustained a spontaneous fracture of the right humerus. Prior to the accident he had never complained of pain in the arm, nor were there any symptoms of bone disease. An x-ray picture taken subsequent to the fracture showed a remarkable expansion of the shafts of the humerus with thinning of its walls and an appearance of vacuolation in the medullary space resembling internal sarcoma. This, coupled with the manner in which the accident had occurred, led to the belief in pre-existent malignant disease of the bone. In order to verify that diagnosis the bone was trephined and a section removed for microscopic examination; this showed only blood-clot and some reparative tissue. Healing went on without interruption, and now, six months after the accident, the boy was entirely well. The case was interesting, Dr. Abbe said, on account of the false impression created by an unusually accurate radiograph.

Dr. Kinnicutt said that during a recent visit to Boston he saw six or seven cases of spontaneous fracture, and in every one of those instances it was shown subsequently that they were due to metastases resulting from malignant disease of the adrenals.

Lantern Slides Showing Sea Air Treatment of Tuberculosis in Bones and Glands in Children.—Dr. John Winters Brannan gave an interesting lantern slide exhibition of the fresh air treatment of tuberculosis of the bones and glands in children, as carried out at the Sea Breeze Hospital at Coney Island.

Burns.—J. D. Maddox considers that the application of pure carbolic acid is the ideal first treatment for all burns, and states that it is almost magical in relieving the pain. Healing is hastened and the formation of sound new skin is favored.—*American Practitioner and News.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 5, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	375	193
Diphtheria	339	49
Measles	1348	39
Scarlet Fever	231	21
Smallpox	6	.....
Varicella	103	.....
Typhoid Fever	19	7
Whooping Cough	35	9
Cerebrospinal Meningitis	33	32
Malarial Fever	.....	.....
Totals	2,489	350

The Effect of Intestinal Extract on Blood Pressure.—Roger and Josué have made various experiments with the extract of rabbit's intestine. The intestine was macerated in salt solution, and this extract injected into the bladder of rabbits brought about a lowering of arterial pressure. This effect was produced rapidly, within a minute after the injection. The maximum effect was noted at the end of five minutes, and persisted for a short time. Ten c.c. of the extract, a dose which has often proved fatal, was used in this experiment. Single weak doses had no effect on the pressure.—*Le Progrès Médical,*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending May 5, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	Apr. 14–21	8	..
Ukiah	Mar. 26	1	In State Insane Asylum.
Connecticut, Putnam	Mar 1–23	30	..
Delaware, Wilmington	Apr. 21–28	1	..
Florida, General	Apr. 21–28	8	..
Jacksonville	Apr. 14–21	2	..
Illinois, Chicago	Apr. 21–28	1	..
Missouri, St Louis	Apr. 14–28	5	..
New York, New York	Apr. 21–28	2	1
Maryland, Baltimore	Apr. 21–28	3	..
Ohio, Cincinnati	Apr. 20–27	2	..
Tennessee, Knoxville	Apr. 20–28	1	In County.
Memphis	Apr. 14–28	27	..
Washington, General	Mar. 1–31	11	..
Seattle	Apr. 14–21	1	..
Wisconsin, Appleton	Apr. 1–28	1	..
La Crosse	Apr. 14–28	3	..
Milwaukee	Apr. 14–28	8	..

SMALLPOX—INSULAR.

Hawaii, Honolulu	Apr. 7–14	1	1

SMALLPOX—FOREIGN.

Africa, Cape Town	Mar. 17–24	8	..
Argentina, Buenos Ayres	Jan. 1–31	66	..
Canada, Toronto	Apr. 14–21	3	..
Chile, Iquique	Mar. 24–31	3	3
China, Hongkong	Mar. 10–17	0	7
Nanking	Mar. 24	1	..
France, Paris	Mar. 31–Apr. 7	2	..
Gibraltar	Apr. 8–15	1	1
Great Britain, Bristol	Apr. 7–14	2	..
Glasgow	Apr. 13–20	1	..
Greece, Athens	Mar. 25–Apr. 7	..	4
India, Bombay	Mar. 27–Apr. 3	..	16
Calcutta	Mar. 18–25	..	276
Karachi	Mar. 25–Apr. 1	57	32
Madras	Mar. 24–30	..	33
Rangoon	Mar. 19–26	..	66

CHOLERA.

India, Bombay	Mar. 27–Apr. 3	..	13
Calcutta	Mar. 17–24	..	37

PLAGUE—INSULAR.

Hawaii, Honolulu	Apr. 25–30	..	3

PLAGUE—FOREIGN.

Brazil, Rio de Janeiro	Mar. 18–25	7	1
China, Hongkong	Mar. 10–17	7	7
India, General	Mar. 10–17	13,325	10,782
Bombay	Mar. 27–Apr. 3	..	821
Calcutta	Mar. 17–24	..	176
Karachi	Mar. 31–Apr. 1	96	69
Rangoon	Mar. 19–26	..	99

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 20.
Whole No. 1854.

New York, May 19, 1906.

$5.00 Per Annum.
Single Copies, 10c

Original Articles.

THE RUSSIAN RED CROSS.*

By JOHN VAN R. HOFF, A.M., M.D.,

COLONEL, ASSISTANT SURGEON-GENERAL U. S. ARMY, MILITARY OBSERVER WITH THE RUSSIAN FORCES IN THE FAR EAST, 1905.

In summing up its report for 1904 the Central Committee of the Russian Red Cross Society asked, "Has the Red Cross succeeded in accomplishing its difficult task"? and answered, "Undoubtedly; yes!" In proof of this the committee submitted on the one hand the expressions of gratitude from thousands of sick and wounded who during the war had been welcomed to their institutions in the field and tenderly nursed back to health and strength, and on the other hand the testimonials of the army commanders as to the extraordinary services of the Red Cross to the forces in the Far East.

It concluded the report as follows: "Not only has the Red Cross aided the Military Medical Department by supplying necessary *matériel,* not furnished from the Army Medical Magazines, and providing trained nurses, but even organized its own hospitals, flying detachments, dieted rest stations, hospital railroad trains, hospital boats, etc. Moreover, it has taken an active part in the transportation and distribution of the sick and wounded, and has as well looked after their wants both in the field, on the lines of communication and at home, supplying them generously with clothing and everything essential to their comfort. The successful accomplishment of the many and great tasks which have fallen upon us was only possible through the wonderful development of the organization during this war, a development far exceeding anything in its history, and due to the voluntary union of the whole people under the flag of the Red Cross to promote the activities of their National Society."

I will offer for your consideration to-day a brief outline of the plan, scope, and accomplishments of the Russian Red Cross in the Far East, feeling assured that no more important subject than the relation to and utilization of volunteer aid, in the sanitary department of our active armies can be presented for the consideration of this college.

The Red Cross of Russia is one of the grand divisions of the Sanitary Department of that army and, in the language of its statutes, its object is to supplement (*seconder*) the national military administration in the care of the ill and injured in war. In this respect it seems to go somewhat beyond the recommendation of the International Convention of 1863 at Geneva, which was that the Red Cross Society should "cooperate in times of war with the hospital service of the armies by all means in its power."

It will be observed that the Russian Red Cross was actually another medical department, so to speak, which duplicated every unit and function of that department, having its own administration, *personnel,* hospitals both fixed and field, railroad ambulances, boats, sanitary wheeled transport, etc., etc., so that the medical department might have wholly disappeared and its work could have gone on under the Red Cross. To be sure the cost would have been doubled, for as it was Russia paid twice as much for the care of her soldiers in the Red Cross Hospitals as in the military hospitals, but they got more, and getting more did not promote the contentment of the soldier ill in the opposite military hospital who got less. I spoke of this apparent injustice to the officials at the front—I discussed it with the President of the Red Cross in St. Petersburg, and I even mentioned it to the Emperor, and all acknowledged it was not right, though the president was hardest to convince. The Red Cross people claimed that the standards of their institution were higher, that the patients got more and better. I agreed that they got more, but I did not observe that in the essentials the patients in the Red Cross hospitals were any better off than those in the military hospitals, the latter of which were generally better kept though not so lavishly supplied.

The Russian Red Cross is, in the language of the statute, "*sous le patronage direct de Sa Majesté l'Impératrice.*" It has a great social standing, its members are honorary, contributing (*bienfaiteurs*), and active, and embrace a great number of the people, from the royal family down. Its organization now extends widely throughout the country, its income is large and the work done by it during the war is worthy of all commendation.

For purposes of administration the Red Cross is organized into four grand subdivisions. (1) The general (state and county) societies; (2) the Zemstvos; (3) the gentry, and (4) the large individual contributors. The direction of the affairs of the society is vested in the Central Committee, and the respective State and district committees. The Central Committee is located at St. Petersburg, and its president is the executive head of the Red Cross of Russia. This committee has its permanent headquarters at the capital, in a large building known as the Chancellery of the Red Cross, where it met in daily session from the outbreak to the end of hostilities. The Central Committee directs the business of the entire organization, the business of the State and district societies being confined to their own localities. Provision is made for still further subdivision by the organization of branches in towns and neighborhoods which are permitted a measurable control of their own activities. State and district societies are organized by authority of the governor of a province when the active members (of both sexes) number thirty. Town societies must have at least five active members, and are authorized by the governor on recommendation of the State committee. A town may have several such societies. Special committees can be created for fortresses by arrangement between the Central Committee and the Minister of War. The commandant of the fortress is ex-officio president of the Red Cross Committee.

*Lecture II, delivered at the Army War College, session of 1905-6.

The Central Committee consists of twenty-five members elected by the general assembly. This committee submits to the Empress the names of two of its members for the presidency and the names of four for the vice-presidencies of the committee, from which she selects the respective officers, who serve for two years. The president appoints the secretary and treasurer, with the approval of the committee and other subordinate officials. Six members of the committee longest in office are changed annually, their successors being elected by the General Assembly, though the members may be reelected. The State and district societies elect officers, including a treasurer and assistant treasurer, to serve for two years. One-fourth of the members are elected annually.

The General Assembly of the Red Cross is composed of all its members of all classes, and its president is the president of the Central Committee. It meets at St. Petersburg at least annually to examine the accounts of the society, to discuss and determine the questions and measures brought before it, to elect members of the Central Committee, etc., etc.

The regulations governing the Red Cross of Russia are very explicit; they apply as well to peace as to war times, and are well worth the consideration which the limits of this lecture will not permit. It is necessary, however, to consider briefly the specific objects of the society during active operations. They are:

1. To supply women nurses and, if necessary, physicians to the military medical establishments.

2. To supply medicines, surgical instruments and dressings, warm clothing, etc.

3. To furnish hospital stores, delicate food not included in the supply table of the medical department.

4. To assist in the evacuation of the invalids by supplementing the physicians, trained nurses, and orderlies on duty with railroad ambulances, boats, and at collecting and rest stations as well as supplementing the regular supplies.

5. To aid, through the local organizations, the sick sent into the interior of the country, for which purpose it keeps a record of all hospitals and other medical institutions in the region, and if necessary establishes mobile hospitals in which the sick are cared for at the cost of the government, the rate being fixed by the Minister of War.

In case of *necessity* the Red Cross may organize mobile hospitals where the sick will be cared for at a rate fixed by the Minister of War; it may even form *flying hospitals* or *lazerets* for use on the *field of battle*, and *sanitary detachments* to *accompany* the evacuating convoys. It can organize the different means used in evacuating the sick, all of which it actually did in the Far East.

Upon mobilization for active service plans are at once prepared, based on information from the Minister of War, as to probable scope of operations, covering the work of the Red Cross; these having been approved by the Empress, which, of course, means the government, are presented to the General Assembly of the Society. In case of emergency the Central Committee is authorized to take immediate action and report the fact at the first meeting of the assembly.

The work of the Society in the theater of operations is executed by chief delegates, in number corresponding to the number of active armies, and by delegates assigned to each military district. These are elected by the Central Committee, approved by the Empress, and thereafter cannot be recalled except on her authority. Within the empire this work is usually done by committees of the Society or special delegates.

In time of war the functions of the Central Committee are to place at the disposition of and send to its representatives in the field, the *personnel* and *matériel* at its command; to organize the various means necessary to assist in the distribution of the ill and injured within the country, in accordance with the general plan of evacuation indicated by the general staff; to establish supply depots; to execute measures looking to the collection of funds, materials, and medical, nursing, and subordinate sanitary *personnel;* to act on reports, requisitions, and estimates from the field; to audit all accounts, etc., etc.

The chief delegates are the representatives of the Society in the theater of war, and their relation to the military authorities is set forth in pars. 547-571, "Troops in Campaign." A chief delegate is in supreme authority within his jurisdiction and acts under the regulations of the Society and the War Department. His first duty is to assist the military administration by every means at his command, in caring for the sick and wounded, especially by supplying such means as are not in the hands of the military authorities; he distributes all Red Cross *personnel* and *matériel* in accordance with the suggestions of the general commanding.

In the assignment of the women nurses the chief delegate is directed to keep the nurses of each detachment in the same locality, and so far as possible together, so that they will be under the supervision of the chief nurse of the detachment, and he is specially charged to see that the discipline and efficiency of the Red Cross *personnel* is maintained. He establishes supply depots, organizes sanitary railroad trains, convoys, boats, etc. In fact, the principal delegate is authorized to do almost anything, and the more, the further distant he is from the Central Committee. He appoints all of his assistants, though some of the principal appointees must be approved by the Central Committee, and he fixes the amount of their compensation. He is required to report frequently to the Central Committee, and submit detailed accounts of expenditures.

The district delegate represents the Society in his district, and his relation to the military authorities is prescribed in pars. 712, 713 and 725, "Troops in Campaign." He receives his instructions from the Central Committee, and administers the work of the Society within his jurisdiction in the same way as would a chief delegate.

Of course with the coming of war every part of the Red Cross is at once awakened to extreme activity, and happy is the nation that has its Red Cross fully organized and in working order, for to organize it after a war begins means suffering and death to the soldiers, and waste, extravagance, fraud, and noneffectiveness in the organization, for all of which the people are quite likely to blame everyone but themselves. The local committees at once take up the special work assigned them by the Central Committee, chiefly looking to the assisting of the wounded sent to the interior of the country. They appoint representatives on the evacuation commissions of their regions, and to all other military committees organized in the section where the wounded are to be sent. That department of the Red Cross whose special duty in peace time is to organize the sanitary *personnel*, including trained women nurses, sends it to such places as the Central Committee directs and at once proceeds with the recruitment of a new *personnel*.

When it is necessary to organize depots, mobile

hospitals, sanitary trains, convoys, etc., a special delegate is selected by the Central Committee, preferably from among the membership of the local committees.

All organizations of the Red Cross are required to forward periodical reports covering their work, and to render returns of money and *matériel* promised or received, and upon the final completion of the work a detailed and audited account must be rendered.

The regulations lay great stress upon the necessity of keeping a strict account of everything, especially of the fiscal affairs of the various subdivisions. I mention this particularly, as grave charges have been made against the conduct of the society, and specifically against a former president, who was charged with misappropriating the Red Cross funds. As the result of this it was rumored, with what truth I know not, that the early liberal contributions from the people, 11,893,109 R. 77 1-2 Ks., in 1904, ceased and during the latter months the cost of the Red Cross was largely defrayed by the government. I do know that large personal contributions were made by individuals to the very end, but have no data as to exactly how much was contributed in 1905. In this connection I will submit an extract from special report made by the observation committee:

"Statements of alleged irregularities in the management of the Red Cross appear from time to time in the public press, which cannot fail to promote the continuance of the lack of confidence felt by many people in the work of the Society.

"Realizing that publicity and public supervision are the best guarantees that the work of the Red Cross will be kept above all suspicion, and with high respect for the press, the observation committee considers it its duty to call upon the public press to publish the fact, that among the first steps taken by the Central Committee of the Red Cross, was to invite public inspection through the establishment of an observation committee, the membership of which was constituted from the recognized public organizations of the Empire. Representatives were appointed from the gentry and Zemstvos in general, the St. Petersburg and Moscow gentry, the municipal governments of St. Petersburg and Moscow, the St. Petersburg merchants and stock exchanges, and two representatives from her Majesty the Empress's Committee.

"The Observation Committee consisted of fourteen members under the presidency of Count Bobrinski (1905) and through it is realized the public oversight of the work of the Red Cross which so long has been needed. The function of the observation committee is to make itself acquainted with the business of the Red Cross relating to all expenditures for the succor of the sick and wounded in the Far East. At its weekly meetings it considers all questions which arise regarding the work of the Central Committee, to which Committee it communicates its views. Designated members audit the accounts, others consider various special questions, etc.

"The Observation Committee has held forty-five meetings, without cost to the Society. . . . Deeply interested in the success of the work of the Red Cross it realized the necessity for a thorough investigation of all the fiscal affairs of the Society and its agents, and the submission of a detailed report thereon.

"Bookkeeping and statistical divisions are organized in connection with the Central Committee, and vouchers are required with all accounts. Statements compiled by the bookkeeper are audited by the observation committee. Up to the present the following accounts have been verified—Of chief delegate Alexandrovski to September—Chief delegate V. Kaufman to November—Chief Delegate Vasilchikov—etc., etc.

"With view to reducing the expenses of the Red Cross in the cost of *personnel*, the observation committee recommended the substitution of unpaid workers for the paid agents, and thanks to the cooperation of the marshals of the gentry there has been no lack of volunteers, so that of 122 agents 96 served without pay. . . . In conclusion the observation committee takes the liberty to address Russia as follows: 'The Red Cross can be broadly useful to the victims of war only when the public has complete confidence in the way its work is done, for from the public must come the means to accomplish this work. Moreover it needs as well the co-operation of all the public forces, with the establishment of a public oversight of its work. These conditions did not exist up to the breaking out of the war with Japan, and to their absence is undoubtedly due the lack of confidence by the people in the work of the Red Cross, which up to that time collected public offerings, but permitted no public control of its expenditures. If Russia has hitherto really felt lack of confidence in the work of the Red Cross it should be restored now with the organization of the Observation Committee."

Without being able to substantiate the fact, I read between the lines that the expected large resources in *matériel* and money of the Russian Red Cross at the outbreak of hostilities were not realized, the story being that both depots and treasury were empty. The Red Cross, like the Russian Government, neither expected nor was prepared for war. It had a good paper organization and soon enlisted that which is most plentiful in Russia, a considerable *personnel*, the most valuable part of which were the trained nurses. All its *matériel* had to be assembled and sent to the Far East after hostilities began. In a previous lecture I stated that Russia did not provide a sufficient *military* medical department for the armies in Manchuria, as this department had but 8 per cent. of beds east of Lake Baikal. I mention this here simply to show why the Red Cross was forced to supplement the military medical department in every detail, having elsewhere set forth more *in extenso* the inadequacy of the military medical department—*per se*.

For purposes of administration Siberia and Manchuria were divided into two districts which quite closely corresponded to geographical lines. The western or Siberian District embraced the entire line of the Trans-Siberian R. R. from (Samara) Chiliabinsk its western terminus, to Manchuria station its eastern, and included the Amur Valley to Stretensk, covering a distance of about 3,500 miles, of which Senator von Kaufman was principal delegate, with headquarters at Irkoutsk. This district was subdivided by Lake Baikal into the western and eastern sub-districts, the headquarters of the former being also at Irkoutsk, while that of the latter was at Tchita. The country embraced in this district was called the Rear region, though indeed as a practical fact it was the *etape*. The western district had altogether hospital accommodation for 305 officers and 8,901 men, of which about half, viz., 4,226, was east of the lake (the report from the district delegate gives 4,226, while that from the sub-district delegate gives 5,170—I presume the latter is right). The Red Cross *personnel* of the Eastern sub-district numbered: Physicians 100, pharmacists 6, students

(medical) 12, nurses (women) 9, feldshers 23, *under-personnel* 709.

The Red Cross *personnel* of the Western subdistrict included: Physicians 78, nurses (women) 262, *under-personnel* 243.

In addition to the foregoing the *personnel* of certain permanent Red Cross hospitals located in the Western district was employed. This resided permanently in the towns and was paid by the local Society. Altogether there were 1,322 beds in such hospitals at Tomsk, Barnaul, Omsk, Ufa, Samara, etc. The Red Cross authorities were not informed as to the exact number of this *personnel* but estimated one physician to fifty beds and one woman nurse and one orderly to twelve beds. This estimate would give an additional Red Cross *personnel* of physicians 26, nurses (women) 110, sanitaries 110: or a grand total of physicians 204, nurses (women) 381, *under-personnel* 1,103.

I have no doubt this is an underestimate, for I am informed that in the towns the women came in in considerable numbers as volunteers for more or less of the day.

From June, 1904, to September 1, 1905, 172 officers spent 4,010 days in the Red Cross institutions of the district and 16,268 men spent 436,933 days, an average of 23 plus days per officer and 26 plus days per man.

Up to December 31, 1904, only 79 officers and 6,394 men were entertained, an average of 49 plus days each, the officers averaging 80 plus days, and the men 48 plus days.

There were no Red Cross hospital trains in the district east of Irkoutsk, evacuation toward Russia being done by military hospital trains. Thirty odd hospital trains plied between Harbin and Irkoutsk, about half of which were supplied by the Red Cross. I am informed that 120,000 patients passed the Evacuation Commission at Irkoutsk: as but 16,440 remained in the entire district the legitimate inference is that over 100,000 men returned to Russia of whom I was told about 30 per cent. got back to Manchuria.

The District of the Far East embraced so much of Manchuria as remained in possession of the Russians and extended eastward to Vladivostock and the Pacific Ocean—in a word it included the entire theater of active operations. Prince Vasilchikov was principal delegate of this district with headquarters at Harbin. There was a sub-district at the front with headquarters at Gunchalin, another at Vladivostock, and each army had a special delegate representing the Society.

The Red Cross hospital accommodation of this district was approximately 25,000 beds, of which 2,200 beds were actually with the troops in the field exclusive of accommodation in "flying detachments," etc., 1,340 beds were at Vladivostock and the remaining beds at Harbin and towns on the line of the railroad.

The various organizations numbered 150, of which 30 were fixed and mobile dieted rest stations, 18 "flying detachments," and 16 mobile field hospitals.

The estimated *personnel* of the district given to me August 10, 1905 was as follows: Physicians 500, pharmacists 30, medical students 80, nurses (women) 1,500, *under-personnel*, 2,000.

The pay of the senior physicians was 500 rubles monthly. Assistant physicians 350 rubles, pharmacists and medical students 75 to 125 rubles; women nurses and *under-personnel*, 30 rubles, in addition to quarters, subsistence, and transportation. The term of service averaged one year. The Red Cross authorities at Harbin wrote me that from the beginning of hostilities to May 1, 1905, the sick and wounded had spent in the Red Cross hospitals of the district three million days. The actual number treated was not given me. It might properly be inferred that such as were admitted probably remained in the hospitals there for a comparatively short time, as it would naturally be expected that hospitals near the front would soonest be evacuated. This, however, was not the case, if the report be correct. It will be recalled that the official statistics show but 352,412 cases admitted to all hospitals both military and Red Cross. As the latter had but one fourth of the total number of beds it is reasonable to presume that it cared for a quarter of the total number of patients, approximately 90,000 which would give an average of 33 days in hospital for each patient.

The activities of the Red Cross district in the very theater of operations were varied and extensive, and can best be appreciated by a study of the bi-weekly newspaper issued from the Chancery. I learn therefrom that even quite late in the war the system of evacuation was not working smoothly, and that the regulations did not provide for a proper relationship between the principal and district delegates, of the latter of whom it will be recalled one was at the front (Gungalin) and another at Vladivostock. To correct this a paragraph was added to the statutes defining the supervision of the districts and groups, and the relation of the supervisors to their subordinates. Regarding evacuation, very specific orders were issued February 20, 1905, in which the supervisor of evacuation was required to inform himself regarding every railway hospital train leaving the region of the active armies with sick and wounded, and to see that it was equipped with everything necessary both as to *personnel* and *matériel*, for the proper care of the ill. To enable the supervisor of evacuation to carry out his duties special assistants were nominated by him, with the approval of the principal delegate, to every evacuation commission, both in the field and in the line of communication. This is rather an interesting coincidence, as it indicates that previous to that time, about a year after the beginning of hostilities, the Red Cross had no representative on the Evacuation Commissions. I chanced to hear something in this connection which may be of interest. In the early days of the war such system of evacuation of the invalids as existed was defective with the result that men were sent out of the military zone without proper authority. The Red Cross assumed the right to dispose of its patients according to its own judgment and irrespective of the military authorities, and, the story goes, actually did send a large number to Russia. I was told that when the matter was brought to the attention of the military authorities evacuation commissions were for the first time organized, though required by regulations. This story seems to be corroborated by the official order of the Red Cross, of February 20, 1905. Indeed, about this time there seemed to be a general reorganization of the Red Cross in the Far East, and it was then the last battle of the war was fought, on February 22, 1905. An inspector of hospitals was appointed whose duty included the assignment of *personnel*, an intendance official in charge of subsistence, and a medical purveyor. The following month the headquarters chancery was reorganized and divided into six sections:

1. Correspondence; 2, accounts; 3, medical; 4, subsistence; 5, housing, and 6, evacuation.

An orderly administration came rather late in the

day, but it was finally accomplished and was working smoothly just as the war came to an end.

I frequently asked as to the expenditures of the Red Cross, but could then get only general answers, *e. g.* I was officially informed by the Harbin Chancery that the average cost per patient for board and medicine was, officers, 1.25 to 1.50 rubles daily and men .75 to 1.20 rubles. The Red Cross newspaper published the disbursements in the district of the Far East for April, 1905, as follows:

	Rubles.
Administration	12,891.38
Maintenance of hospitals*	214,651.12
Maintenance of floating hospitals	5,086.75
Medical stores, etc.	62,431.06
Maintenance of Red Cross institutions in Southern region	81,089.37
Disinfecting plants	1,321.93
Dental cabinets	884.53
Hospital R.R. trains	65,618.70
Insane hospital	8,000.00
Laundries	435.50
Bakeries	18,358.11
Reserve *personnel*	28,215.61
Miscellaneous (extra)	38,290.91
	537,274.97

Many of the hospitals at the front were being supported by Zemstvos, cities and individuals and there were five railway hospital trains contributed by individuals, so that I am inclined to credit the statement that the total Red Cross disbursements average about a million rubles (half a million dollars) monthly.

While in Russia I had few opportunities to observe to what extent the whole people were really interested in the work of the Red Cross. In St. Petersburg I saw two palaces, which I was informed belonged to members of the reigning family, given over to Red Cross work, and the stately rooms of the Imperial Palace at Moscow were piled high with materials for clothing and surgical dressings, which were being fashioned by the deft hands of the good women of Russia, to warm and succor their country's soldier, even though the war was where and for what they knew not.

What lesson can we learn from the Russian Red Cross? I think several. Our first thought would naturally be of its organization and our first query is, Is such satisfactory? I think not, and the Russians seem to have this view, as I am informed that there will be a general meeting next year during which the experiences of the war will be discussed and a reorganization proposed. Wherein is the organization faulty? Chiefly in the fact that during peace times the society has few activities to vivify it. There are, to be sure, some local Red Cross hospitals which serve as centers of activity, and which do good work as far as they go, but which have only a circumscribed influence. A Red Cross society which will be instantly ready to take up its work at the very beginning of hostilities, *and then is the time when it can be most useful*, must be in continuous activity. To overcome the inertia of inactivity consumes valuable time, is wasteful of effort and costly in every respect. To maintain the activities of such an organization in peace time, and coincidently to keep clearly before the people the true function of the Red Cross, the *succor of the wounded in war,* is a difficult proposition. Even the name must not be too much used or it surely will be abused and the badge must be sacredly preserved for its only lawful use. To meet these essentials most countries have societies subsidiary to the Red Cross, but with distinctive names, and specific functions. In Great Britain is the Order of St. John of Jerusalem, with its ambulance society, with hundreds of members among the working classes, who are trained in the schools of the order, to render first aid to the wounded of the great industrial army in the battle for existence. When the lesser wars come these workers are ready to take, and have taken their places, in the ranks of the Sanitary Department. Over two thousand trained orderlies from the St. John's Ambulance Society were employed in South Africa. In France are like societies, contributing to the Red Cross, but with distinctive names, as is also the case in Austria. But the highest development of the organization of the whole people for humanitarian work in peace that they may be ready for such work in war is found in Germany where the Samaritan Societies reach into every family.

Did time permit, it could well be devoted to a word regarding this wonderful organization of an entire nation, for the purpose of assisting in the care of the victims of war, for it is a shining example to us, who must to the largest extent depend upon our people for such assistance; but I must continue with my immediate subject.

As I understand it the Red Cross is not intended to substitute but to supplement the regular medical department of an army. Of course all students of the military art are aware that no army can maintain in peace a sanitary organization equal to the demands of war, nor can it provide such an organization even in war. The entire nation must help in this work, and whether it is to be well or ill done will depend upon how well the nation is organized and instructed for it.

I have stated that the Russian Red Cross in Manchuria organized all sorts of medical units. This it was apparently forced to do, as the military medical department was inadequate in them all. I find that the Red Cross had in the very ranks of the troops, in positions in front of the enemy, with the first army, nine Red Cross mobile field hospitals and seven Red Cross flying detachments, the second army five Red Cross mobile hospitals and seven Red Cross flying detachments, while the third army had two Red Cross field mobile hospitals and four Red Cross flying detachments. I believe that the sphere of the Red Cross is in the rear of the army and it should not be found at the front except in emergency, and then only after a battle. If required at the front it should come with *personnel* and *matériel*, but not with units; there should be but one kind of hospital with an army, and that should be an integral part of the military organization. I have heretofore alluded to the results of having two kinds of hospitals for the same purpose, the one giving twice as much and costing twice as much as the other, as was actually the case in Manchuria; one in which disicipline was maintained in accordance with regulations, and the other in which the patients were permitted to do much as they pleased, one which was subject to strict military supervision, and the other a semi-independent organization, giving or withholding as its own judgment dictated, and I am reminded of what General Sherman said of an analogous humanitarian effort in our great war, when he found the volunteers from one State being fed on mince pie, while their comrades in a neighboring

*The particulars were given, but will not be here noted except those under II, as follows: Pay of *personnel*, 97,000 rubles; food, 68,700 rubles; buildings and furniture, 22,200 rubles; heating, 8,000 rubles; laundry, 8,400 rubles; animals, 4,700 rubles. The disbursements for evacuation to June 1, 1905, amounted to 315,313 rubles, 46 kopecks.

camp, but from another State, were eating the straight ration and not too much of that.

Surely all soldiers must be treated alike if approximate contentment is to be expected.

The relatively high salaries paid by the Red Cross to its physicians and the greater social and material consideration shown them, occasioned discontent among the army physicians from the Reserve, many of whom, at home, occupied quite as good positions, both professionally and socially, as their colleagues of the Red Cross; moreover the absolute independence of this society of the military medical department caused the higher medical officers to ignore it, and between them there was an armed neutrality, so to speak, which in a less disciplined community would doubtless have broken out into open hostility.

Another important lesson the Red Cross of Russia has taught us is that if we expect the best results in widespread undertakings in which the people are deeply interested, we must take the people into our confidence and let them know exactly what we are doing and what we expect them to do. In the beginning the Russian Red Cross failed in this, and the people lost confidence, so easy to lose and so hard to regain.

If in endeavoring to deduce lessons for our own guidance, from my observation of the work of the Russian Red Cross in the Far East, I have appeared to be unkindly critical of certain features of that society I wish to disclaim any such intention. The work accomplished was beautiful; no matter what the means or cost, without the Red Cross, unless the military department had been largely augmented, which it should have been, the sanitary outcome would have been a failure, whereas now the record is unequaled.

TREATMENT OF CHRONIC DISEASES OF THE HEART BY THE NAUHEIM METHODS: ITS INDICATIONS AND CONTRAINDICATIONS.*

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So much has been written in the past twenty years on the Nauheim treatment of chronic cardiovascular diseases that I would hardly venture to choose this theme for a paper were it not that I have been able to study the subject under especially advantageous conditions during the past two years. I took a five weeks' course of treatment in Nauheim in the summer of 1904, and again in 1905. During these visits, besides my personal experience of the treatment, I was granted courteous and full opportunity by Professors Theodore Schott, Heinemann, and Groedel, to see their most interesting cases and to examine the patients to whatever degree and with whatever frequency I desired.

As the result I have been able to form a reasonable opinion of the effects to be expected in cases suitable for what is known as the Schott method of treatment, which is the combination of resistance exercises and baths, and of the contraindications for its application.

Before considering the effects of the baths and the resistance exercises from a clinical standpoint, and their physiological action, I shall refer briefly to the composition of the Nauheim waters and to the technique of both the baths and the exercises.

*Read at a meeting of the New York Academy of Medicine, January 4, 1906.

It may be of interest here to recall that the efficacy of the Nauheim baths in the treatment of many forms of rheumatism had been generally recognized in the early part of the last century. It was the unexpected improvement which was seen to occur in the often associated organic disease of the heart, that led Beneke in 1860 to call attention to the therapeutic value of the Nauheim baths in cardiac disease.

The springs which are used for bathing purposes are three in number. Their chief constituents are: (1) Chloride of sodium, (2) chloride of calcium, (3) carbonic-acid gas, free and in combination.

They vary somewhat in their saline and carbon dioxide content. The range in the chloride of sodium strength is between 2 1-5 and 3 per cent.; in the chloride of calcium, between 1-6 and 1-4 per cent. The free carbonic-acid gas content varies between 1.0074 and 2.3764 parts per 1,000 grams, equaling respectively 574 c.c. and 1,216.6 c.c. In other terms, each liter of the spring richest in carbonic-acid gas contains 1,216.6 c.c. of the gas. The range of the natural temperatures of the different springs is between 31.2° Celsius (88.16° F.) and 35.3° Celsius (95.54° F.).

A system has been elaborated which permits of a wide variation in the saline and carbon dioxide strength of the baths, and as they vary in their different constituents they are known as:

1. The ordinary brine bath (gewöhnliches Soolbad), free from carbonic acid but rich in salines.

2. The thermal brine bath (Thermalbad), rich in salines and containing a considerable amount of carbonic acid in combination.

3. The thermal effervescent bath (Thermal-Sprudel), holding an intermediate position between the thermal and the bath next to be described.

4. The effervescent bath (Sprudelbad), which receives its waters direct from the subterranean springs, with the full saline and carbonic acid content, and with only a very slight diminution in their natural temperature.

5. The current thermal brine bath and current effervescent bath (Strombad and Sprudelstrombad). These baths also receive the water as it leaves the springs. The water forcibly enters at the lowest level of the bathtub, and by means of overflow pipes at the top leaves it throughout the entire period of immersion. The saline strength of the various baths can be increased at will by the addition of the crystallizable waste product, motherlye (Mutterlauge), of the neighboring saltworks.

The course of baths usually begins with the brine or the thermal brine bath, strengthened after a few immersions by the addition of gradually increasing quantities of motherlye. After several days the Thermal-Sprudel, and again after a similar period—usually a fortnight from the beginning of treatment—the effervescing sprudel baths are substituted. The effervescent current baths are reserved for the final days of treatment, and often are not given. The duration of the baths at the beginning of treatment is not longer than six to ten minutes, gradually lengthened to twenty minutes; the latter time is rarely exceeded. The temperature of the first baths is generally from 92° to 95° F. It is reduced with succeeding baths. Temperatures lower than 83° F. are rarely used. Usually not more than two or three successive baths are permitted in as many days, when a day of interval is prescribed. The patient, on emerging from the bath, is wrapped in heated towels and quickly dried by the attendant. Rest for at least an hour, in the recumbent position, is imposed after the bath. The number of baths varies from twenty to thirty-five. The system described gener-

ally prevails, but many variations are and should be made, in my judgment, to adapt both the baths and the exercises, directly to be described, to the individual case.

In healthy subjects the immediate effects of immersion in the baths is a notable diminution in the frequency of the pulse and a slight increase in its volume. Usually there is also a slight increase in the depth of the respirations, with a corresponding decrease in their number. A vasodilatation of the superficial vessels, as indicated by the uniform reddening of the surface of the body, is noticeable. This is especially marked in the effervescing Sprudel bath. The blood pressure has a short initial rise, followed by a depression to or below the original level, succeeded by a renewed rise to its former height.

A series of very careful observations in regard to the effect of the bath upon the pulse were made by me in my own person during my visit in 1904 and confirmed in the summer of 1905. The pulse was taken before undressing, and any increase in frequency during the act was allowed to subside before immersion. After one and one-half to two minutes of immersion, either in the simple brine or in the effervescing brine baths, the frequency was invariably reduced from eight to ten beats, if the pulse was 76 or more before immersion, and its volume was notably increased; if under 70 before immersion, the reduction did not exceed six beats. The pulse rate is usually accepted as a guide for the length of the bath. Its duration invariably should be within the limits of causing any increase in the frequency of the pulse. In my own case, at the beginning of treatment, the pulse rate began to quicken after ten minutes; later in the treatment, an increase in frequency occurred only at the end of a twenty-minute immersion. The reduction in the pulse rate was fully maintained during the subsequent period of rest.

The evidence of vasodilatation of the surface vessels was always well marked, and with it there was a sensation of general and very agreeable warmth following the first sensation of coolness.

The exercises, known as the Schott resistance exercises, used in connection with the baths—a combination to which I have applied the name of the Schott Treatment—were introduced by the late Dr. August Schott and his brother, Dr. Theodore Schott, as the result of elaborate and prolonged experiment. In their words, as quoted by Bezly Thorne,[1] "they consists of movements designed to bring into successive and regulated action almost every collective system of voluntary muscles in the human frame. They consist of slowly-conducted flexion, extension, adduction, abduction, and rotation, in orderly succession, of the arms, trunk, and lower extremities. Each succeeding movement is resisted by an attendant to such an extent as to oppose without arresting it. Each movement must be slowly and evenly made, with a definite and uniform effort on the part of the patient. The office of the attendant is not limited to resisting the movements with equally uniform but slightly inferior force, but it is his duty to impose a short interval of rest after each movement, to enjoin slow and regular breathing, and more especially, by observing the rate of the breathing and its force as indicated by the alæ nasi, to insure that no undue strain is placed on heart or lungs."

The attendant must bear upon but never grasp or constrict the patient's limbs, lest the movement of groups of muscles be impeded or arbitrarily promoted. The resistance, always slight at first, is gradually increased with progressive treatment. The respirations and pulse should largely be the guide for the degree of resistance, and the number of movements given. If either increases in frequency, the exercises should be modified or discontinued. The duration of the single treatment is as a rule fifteen to thirty minutes, including the intervals of rest. There are nineteen different exercises, of the simplest character, and they are fully described, with illustrations, in Bezly Thorne's book.[1] The description of a single one will illustrate the technique. The patient extends his hands in front of him at the level of the shoulder, the palms touching. The attendant, standing in front of him, places his hands on the outer surface of the patient's wrists, which rest in the hollow between his thumb and forefinger. The patient then slowly and steadily carries his arms outward until in a line with the shoulders, the attendant gently and slowly resisting. The arms and hands are then brought to their original position with a similar resistance upon the part of the attendant, whose hands have been slipped to the palmar surface of the patient's wrists. Schott usually advises the daily administration of the exercises, but both the frequency and the number given on a single occasion are properly subject to many variations.

The first exact observations on the effect of exercise, of the contraction of a muscle or a group of muscles, upon the circulation in healthy subjects, were made by Ludwig and his pupils Sczelkow, Sadler, and Gaskell. Further investigations were undertaken by Mosso, Chauveau, Kaufman, Morey, Oertel, von Basch, Comte, Bloch, Moritz, Masing, and others. Lauder Brunton and Tunnicliffe[2] were led by the somewhat conflicting results obtained by the earlier observers to undertake another series of investigations on the effect of resistance exercise upon the local and general circulation in man. Their experiments were conducted with every precaution against error, and the results suggest that an explanation of the conflicting statements made by previous investigators is to be found in the difference in strength of the exercises employed.

In gentle resistance exercises Lauder Brunton and Tunnicliffe constantly observed:

Coincident with the beginning of the exercises a diminution in the pulse frequency (three to four beats) and a rise in blood pressure (ten mm.). During the second half of the movements the blood pressure fell to its original level, the pulse frequency was unaltered. With the cessation of the exercises (thirty minutes' duration) the blood pressure further fell (ten mm.) during thirty minutes, and the pulse rate seven beats in five minutes, at which point both were maintained. After forty-five minutes the blood pressure had risen to its normal level, but the reduction in the pulse frequency persisted. The number of respirations remained the same throughout the exercises. The sphygmogram showed a marked increase in the volume of the pulse during the exercises, the pulsations being nearly double their former size.

Edgecombe's and Bain's experiments[3] on the effect of resistance exercises upon the circulation are confirmatory of Lauder Brunton's. Both series of investigations showed that if the exercises were of sufficient strength to *increase* the frequency of the pulse, the blood pressure was increased throughout their employment.

The physiological effects of gentle resistance exercises in the healthy subject are therefore similar to those produced by the baths, viz., a diminution in the frequency and an increase in the energy of the cardiac systole, an increase in the volume of the pulse, and a diminution in peripheral resistance. The effect upon blood pressure apparently depends upon the relative degree of the increased cardiac energy and

output, and the peripheral vessel dilatation. If the energy and output, or both, are in excess of the dilatation, a rise in pressure results. If the inverse order obtains, the blood pressure after a short initial rise falls to its original level.

If the physiological effects of the baths and exercises are such as have been described, their employment in many forms of cardiac inadequacy—a term expressive of a disproportion between the demand upon the heart and its ability to meet it by whatever cause produced—rests upon a scientific basis and should constitute a potent therapeusis.

Clinical experience indicates that such expectations are in a greater or less degree fulfilled. The degree of success in their employment will depend, as Bezly Thorne expresses it, upon (1) the responsive capacity in the individual case of the nervous mechanism to peripheral stimulation (cutaneous and muscular, an effect of the baths and exercises respectively); (2) the responsive capacity of the vascular tunics; (3) the degree of integrity of the myocardium; and finally I may add, upon (4) a sound clinical judgment and experience in determining these conditions.

The effects of the baths and Schott exercises may now be considered from the clinical standpoint.

In cases of cardiac dilatation suitable for this treatment, one of the immediate effects of both the baths and exercises, in many instances, is a shrinkage in the outline of the cardiac area and the movement inward and sometimes slightly upward of the apex impulse. In the case of the exercises, this observation was originally made by August and Theodore Schott, and their interpretation of it, that it represented an actual diminution in the size of the heart, was at first doubted. Radiographic studies have apparently confirmed their view, and it is generally accepted at the present time by clinicians. The extent of the shrinkage, as estimated by percussion, varies. I have repeatedly observed in my clinical work a shrinkage of a half inch in the left cardiac and an equal one in the right outline after single resistance exercises of twenty minutes' duration, including the intervals of rest.

The diminution in size thus obtained after a single exercise is of very temporary duration, but it is claimed by Schott that with the continued employment of the method a more permanent diminution is effected. My own experience is in accord with this view. In cases of dilated heart without organic valvular disease, to which I shall refer later, the normal size not only is attained, but may remain permanent.

The immediate effect upon the heart is presumably the result of strong reflex influences excited by peripheral muscular stimulation and acting simultaneously upon the cardiac regulator nerves and the vasomotor centers. The response is a more energetic systole (an increased driving power on the part of the heart), and dilatation of the peripheral arterioles, respectively. The dilated heart chambers are more completely emptied, and there is an increased transfer of blood from the venous to the arterial system. If these temporary effects can be sustained, as I believe they are by successive applications of the exercises over a considerable period of time, the purpose of all therapeusis in dilated hearts with loss of compensation is effected.

In the relief of venous hyperemia, the effect of diminished venous stasis in the veins of the heart walls is sometimes lost sight of. It is the first and most potent factor in the establishment of an improved myocardial nutrition. The view which I have expressed in regard to the mode of action of the exercises I would apply also to the baths. The peripheral stimulation differs in kind, but the response is similar.

In attempting to formulate the varieties of cardiac inadequacy suitable for the employment of the methods described, I shall be guided by the experience of those most familiar with this treatment and by my personal observations.

The most numerous and brilliant successes in my experience are obtained in cases of enfeebled, relaxed, dilated hearts, with or without a murmur of muscular or relative mitral incompetence, following prolonged and exhausting diseases, the various acute infectious diseases, and also associated with anemia of varied causation. In some of these cases it is difficult to speak positively of the changes which have occurred in the heart. Possibly there is no more than a loss of tone and relaxation of muscle. In others, especially those following the acute infectious diseases, there undoubtedly exists a parenchymatous myocarditis, granular or fatty, of varied severity. In the anemias, primary (chlorosis) and secondary, judging from the extreme fatty changes found in the heart muscle in the grave forms, a less severe grade of fatty degeneration is probably present. In all these cases there are symptoms of cardiac inadequacy. Such cases are often rebellious to the ordinary methods of treatment. Rest in the strict sense of the term is distinctly harmful. Digitalis, general tonics, and a favorable climatic environment are far less efficient and rapid in their action than the combined use of the baths and resistance exercises.

Under the above head may also be included the cardiac inadequacy which not infrequently follows severe muscular effort, the "heart strain" of many authors. In many instances a very considerable dilatation is present. Rest in these cases is certainly indicated in the beginning of treatment, but a little later the improvement is more rapid under a judicious use of the baths and exercises. The forms of cardiac affections described all come under the head of curable diseases of the heart. Unfortunately the laity is unable and the medical adviser occasionally fails to differentiate the incurable from the curable forms, and patients flock to Nauheim, with or without the advice of a physician, in the hope and often full expectation of a permanent cure of incurable organic disease of the heart.

In incurable organic disease the best results should be obtained in mitral insufficiency with dilatation, and such is unquestionably the case. Where the compensation is maintained with difficulty, and in the early stage of failure, very striking results are secured. Compensation is restored, which is often maintained indefinitely with intelligent care on the part of the patient.

Schott expects much more than this, and I must admit that I have seen extraordinary improvement where a very serious loss of compensation existed. The relief of dyspnea, of passive congestion of the various organs, the amelioration of irregular action, and coincidently a diminution in the size of the heart, has been more rapid than I have seen by any other method of treatment. Groedel believes that less satisfactory results obtain where mitral stenosis is associated with insufficiency. Broadbent, on the contrary, expects good results in such cases.

In aortic insufficiency the consensus of opinion is that little good may be expected from the treatment. Where dilatation is marked, with a corresponding loss of compensation, the treatment may be potent for evil. Broadbent thinks that with the *inception*

of mitral incompetence in these cases some benefit may be expected.

Of the indications for the Nauheim treatment in angina pectoris, one must speak with caution. Defining angina pectoris as a syndrome or symptom group, the clinical pathology of which may differ in different cases, and which has to be determined in each individual instance, which may or may not be associated with gross anatomical lesion, it must be admitted that cases presenting all the symptoms of angina major are sometimes benefited by the Nauheim treatment. Several noteworthy instances have come under my observation. Many of these cases certainly belong either to the functional (hysterical) or vasomotor type, or at least are not due to organic coronary disease. The cases which I personally studied were associated with organic disease of the heart, but certain clinical signs suggested the absence of organic coronary disease. In one of the cases a mitral lesion, which is extremely rare in angina associated with coronary lesion, was present, and the aortic valves were sound; the blood pressure was about normal (150 mm. Riva Rocci) for the age of the patient (sixty-two years). My observations lead me to believe that benefit may be derived from the Nauheim treatment in cases of angina pectoris, presumably of the functional or vasomotor type, and which have not yielded to other therapeutic measures. The absence of aortic insufficiency or stenosis, of a constant arterial hypertension, and of the evidence of a probable *general* arteriosclerosis, should be useful guides in advising this treatment. In its employment much care is indicated; the baths should be warm, weak, and short, and only slowly strengthened.

Is the presence of a general arterioselerosis a contraindication for the employment of the Nauheim treatment? A mere palpability of the accessible vessels, if unattended with arterial hypertension, disproportionate to the age of the patient, certainly should not be regarded.

Groedel regards cases with a blood pressure of 150 mm. (systolic pressure, Riva Rocci) as appropriate for treatment. Pressures above 170 mm. he believes to be unsuitable.

A decision on the advisability of the baths and exercises in myocarditis, other than the forms previously described, is a difficult one. The signs and symptoms of even grave forms are notoriously doubtful. A marked cardiac inadequacy, however, in the absence of evidence of valvular disease and noteworthy dilatation, especially if associated with arteriosclerosis, may reasonably be regarded as a sign of a grave impairment of myocardial integrity, and constitutes, in my opinion, a *positive* contraindication for treatment.

In cases of general emphysema, with its permanent increased pulmonic pressure, a positive contraindication also exists. It is unnecessary to more than mention the contraindication in suspected aneurysm.

Aside from general contraindications for the employment of the baths and exercises, there are equally positive indications for the modification of both in individual cases suitable for treatment. In the case of the baths such an indication is the failure of the usual reaction during and after immersion. In these cases the evidence of at least cutaneous vasodilatation is lacking; the patient experiences a sensation of cold throughout the bath and subsequently, and there is often yawning and occasionally slight nervous rigors. Such a failure of reaction does not necessarily indicate that the treatment is inapplicable; it is often remedied by increasing the saline content of the bath.

In the employment of the exercises, indications for their modification consist in any increase in the frequency of the pulse, of the respirations, of the slightest dyspnea, and of fatigue on the part of the patient. These symptoms may indicate merely that there is a slight disproportion between "demand" (degree of exercise) and "supply" (cardiac energy) and one easily to be corrected.

Indications of the *unsuitability* of both baths and exercises are a marked fall in blood pressure and an increase in the area of cardiac dulness during their administration. The latter sign has recently been observed by me in my wards in the Presbyterian Hospital in a single instance, during the use of exercises of the gentlest form. The case was one of organic mitral incompetence, with dilatation and an almost complete loss of compensation.

I have occasionally observed in my use of the exercises a very slight increase in the area of cardiac dulness, without appreciable change in the blood pressure. It has been in cases of suspected myocarditis without valvular disease. If a modification of the exercises has corrected this sign, I have not regarded the treatment as inapplicable.

I would add a final word on the administration of the exercises. To be efficient they must be attended with "little exertion and no fatigue." A certain amount of training of the patient and a careful selection and instruction of the operator is necessary. To secure the proper conditions, the patient must be taught not to hold his breath or his body rigid (a common tendency), which involves increased conscious effort, to make the movements slowly and very steadily, and to recognize the degree of resistance advised by the physician. The operator should be light of hand, intelligent, and trained in the observation of ordinary symptoms. The use of too great resistance, sometimes at the demand of the patient, is the most common fault of the operator and the most difficult to correct, I have found. At the beginning of treatment I am in the habit of demonstrating the degree of resistance I wish employed in the individual case. In so adapting the treatment, it is needless to say that the pulse rate, the blood pressure, the site of the apex impulse, and the outline of the heart must be noted before and after the first employment of the exercises, and from time to time throughout their use.

I have had convincing proofs in my personal practice of the great benefit to be derived from the use of the resistance exercises *alone* in many forms of cardiac inadequacy. That discrimination and judicious care are required in their application, I have endeavored to show. Schott advises their employment with "self-imposed resistance" as an after-treatment in many cases. It is within the competence of anyone who has become thoroughly familiar with the different movements, and involves little risk of injury through overexertion.

It is to the credit of Schott that he has always maintained that the efficiency of artificial Nauheim baths is similar to that of the natural ones, and there is abundant clinical evidence to this effect. There is equal evidence that results are attainable where the treatment is conducted under the conditions which obtain at well-ordered spas and in institutions which are not seen in cases treated at home.

I was impressed with the mental atmosphere at Nauheim. It was one of hope and cheerful expectation, the stimulus of which must ever be regarded in our therapeusis.

Purposely I have omitted the recital of cases in the present paper. I have chosen rather to give my gen-

eral conclusions, based upon a personal and careful study of these cases.

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THE TREATMENT OF TABES DORSALIS.

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Since the recognition of tabes as a pathological entity, various means to overcome this disease have been advocated, tried and forgotten, and to-day, after about sixty years, we are, as far as therapeutic results are concerned, where our predecessors were sixty years ago. To ventilate this subject is, therefore, not an easy and less so a pleasant task, but a frank recognition of defeat generally leads to better efforts and finally to victory. For this reason a free consideration of the treatment of tabes may prove beneficial.

When we treat a disease in a number of patients and find the means employed ineffective, it becomes our duty to abandon them and to study the disease in its etiology, pathology, and symptoms; not, however, so much by perusal of the existing literature, as by inquiring application to the disease itself. Earnest, inquiring application to a limited number of cases will, in time, prove more valuable than routine work on a vast number, because the inquiry leads to independent observation and conclusion, which, sooner or later, exposes the error. There are already many physicians who ignore the present status built for tabes, but they lack courage to express their convictions, often only because they have no confidence in their ability to present the subject properly, or because they fear criticism.

On October 21, 1905, the Medical Record published my presentation of the etiology of tabes, wherein I compared its pathology with that of syphilis, and presented facts which show that there is no reason which permits one to make syphilis responsible for tabes, but indicate that there is every reason to conclude that we have many other factors which cause tabes. Now, as syphilis does not cause tabes, the treatment of tabes, based on syphilis, could not very well be beneficial, and could lead to nothing else but failure. Errors are not always easily recognized, but that the syphilis theory could hold the profession for such a length of time, with nothing tangible for its support, with not a single cure in its favor, is no credit to those who adhere to the antisyphilitic treatment, despite their knowledge of its inefficiency and harm.

The etiology of tabes shows that, whatever the cause of any given case might be, it induces impairment of nutrition of nerve cells and nerve fibers. Some factors exhaust the blood supply to contingent nerve tissues by overexertion of cells, as in cases due to sexual excesses; other factors impair the nutrition of nerve tissues—by vitiating the blood—to such a degree as to leave them in a weak condition, and when later any strain, which in an individual with a normally nourished cord and brain would not be felt, affects the weak tissues, symptoms of failure begin to appear, as in cases with histories of organic or inorganic poisoning, by infectious diseases, mercury, iodine, lead, etc. Other factors still impair or arrest the nutrition of spinal cord cells and fibers by direct injury to the nutrient blood-vessels, as in traumatic cases.

We therefore have three groups of factors responsible for tabes, and each of them furnishes its varieties. All, however, impair nutrition of nerve tissues, and cause the characteristic pathological condition called tabes, respectively sclerosis. The treatment of tabes must, therefore, begin by preventing impairment of nutrition, and, when impairment has actually set in, by restoring nutrition. To prevent failure of nutrition each patient who has had any infectious disease, who has indulged in sexual excesses, who was subjected to mercury, iodine, lead or any other organic or inorganic poison, or who had any kind of twist of the spine, such as spoken of in the article on the etiology of tabes, should be observed during a period of two or more years, and, as soon as any reflexes, especially those of the patella tendon and eyes, show weakness, the spinal cord and the brain should receive attention by such means as are capable of forcing nutrition of the affected structures. Therefore, the earlier tabes is recognized the greater the chance for a cure, and for this reason it is necessary to be rather too careful than not enough. But what means have we to increase the nutrition of the affected tissues? Considering the task before us of increasing the nutrition of the tabetic lesions, it grows very apparent how useless, or even harmful, every attempt to influence these lesions beneficially by specifics must prove, as none of those, nor any other medicinal agent, has such selective power. Spinal counter-irritation, suspension and rest cure have proved equally futile, and, as it stands to-day, the treatment of tabes presents a chaotic picture of incompetence, discouraging to both physician and patient, but encouraging to charlatanry in various disguises. The only way which holds out hope for success tends toward the employment of such means as will improve the nutrition of the whole system, and of others which will actually increase the nutrition of the affected nerve tissues, and change the pathological conditions to the normal state.

The first step to increase the nutrition of the whole body is taken by placing the patient under most favorable conditions. Pure air, sunshine, congenial surroundings, plenty of sleep, and adequate occupation of mind and body, are most important. Salt-brine friction of the body, in a warm bath, at a temperature agreeable to the patient, twice a week, keeps the pores of the skin open and promotes the circulation. Clothing must aim to keep the body comfortably warm, but not heated. Diet is the next step. It matters not what the patient eats, but what agrees best. The digestive power is generally impaired; slow eating and thorough mastication are, therefore, most essential. Liquids, to wash down the morsels, must be omitted; all solid food must be chewed until sufficiently liquified by the saliva to allow deglutition. Concentrated food must be avoided, as it tends to overload the system with material which it cannot oxidize, and as it also tends to weaken the muscular power of the alimentary canal, and to cause constipation and indigestion. To satisfy the want of the body for water, liquids must be taken between meals. Alcoholic beverages must be avoided, except when the wisdom of the attending physician finds that a temporary stimulation is needed for immediate action.

There is no drug in existence which has any influence beneficial to the tabetic lesions, but when the heart is weak, digitalis, alone or in combination with ergot and strychnine, given in doses and at intervals just sufficient to stimulate the circulation, is indicated. When the digestion is weak, muriatic acid, rhubarb, gentian and nux vomica are very useful. When the bowels do not act, a suitable laxative,

which will help to evacuate the lower bowel, must be found. When the small intestines have lost tone the powdered extract of hydrastis, from two to six grains per day, acts, in most cases, admirably. When the stools are white, the liver is at fault; then about ten drops of the fluid extract of iris versicolor in water, about half an hour before meals and before retiring, is very useful, or one or more grains of calomel with bicarbonate of sodium, before retiring, may be taken. As an all-around tonic a pill composed of two grains each of iron sulphate, sodium carbonate and powdered extract of gentian, 1/8 to 1/4 grain of aloin, 1-32 grain of strychnine sulphate, 1-10 to 1-5 of a grain of ergotin, and two to three drops of tincture of digitalis, taken after meals, and, if necessary, also before retiring, is very beneficial. Any ingredient not needed may be omitted, or substituted, as each case requires. A glance at the above formula shows the intentions: the sulphate of the iron and of the strychnine combines with the sodium, and the iron with the carbonate. The iron disinfects the contents of the alimentary canal, as the feces prove, and acts as a broom to the mucous membranes. The sodium opposes acidity and lubricates the mucous membranes. The sulphate and carbonate check decomposition of foodstuffs in a tardy process of digestion, in which the iron also assists. The consequence of this "house-cleaning" is better absorption and digestion. The sulphate stimulates also the liver cells; the gentian stimulates the peptic glands; the strychnine the nervous system; the ergotin the muscular system, and the digitalis the heart. The aloin, with the assistance of the sulphate and sodium, insures defecation and, being under control by the ergotin, has no congestive effect on the pelvic organs.

The prescription is the proof of a man's skill, and, before a physician writes a prescription for a patient, he must know, not only the pathological condition of the case, but also the needs of the whole system, as indicated by the body in general and by every organ in particular. Idiosyncrasies also demand careful consideration. To treat a pronounced pathological condition only, and to neglect the rest of the whole body, is folly, especially in chronic diseases. Before a lesion like the tabetic can be arrested the whole system must be improved; on the strength of the system rests the hope for recovery. Within the scope of prescription lies all that can be of benefit to the patient; pharmaceutical agents are only a part of the scope, but this part requires painstaking attention, especially in tabes.

Now, while all conditions for the general welfare of the patient are being established, efforts must be made against the tabetic lesion or lesions, and whatever means or agents we might choose to select, we must never forget that the re-establishment of the physiological nutrition of the affected structures is the sole aim. What means have we at our disposal to effect such nutrition? Various means and procedures have been, and are being advocated from time to time, but a short reflection on what has to be accomplished will speedily lead to the recognition of those that are impotent. It would be waste of time to consider, or even to mention, what has no beneficial effect: let us, therefore, consider what can have such effects. The agent which inspires most confidence is electricity. We generate it now in various forms, but I shall divide them all in two classes —first, the current of amperage and low voltage, and, secondly, the current of no amperage and high voltage.

To increase the nutrition of the cord by electricity, both low and high-tension currents are needed; how, depends on the manner in which each treatment is expected to work. The lower the tension and the higher, within therapeutic reason, the amperage, the greater is the electrolytic and the nutritive effect. This effect depends on the polarity of the current. The positive pole of a constant current is acid, astringent and tonic; the negative is alkaline, solvent and relaxing. Furthermore, and in consequence, under the action of the positive pole the fluids of the tissues are driven toward the negative pole, causing depletion at the positive. Under the action of the negative pole fluids are attracted, causing accumulation. All animal tissues, in the state of health, are alkaline in reaction. When nutrition fails the normal alkalinity diminishes in proportion to the acuteness of the pathological focus, with a consequent and progressive tendency to cause shrinkage and hardening of the affected tissues. To arrest this tendency, and then, to extinguish the focus, is what the curative treatment of tabes must aim at. The negative pole of a constant current, therefore, must be placed under the lumbar spine, attached to an electrode, about three inches broad, and about eight inches long, the patient in the recumbent position. On the abdomen I place an electrode that is three or more times larger—it is not material how much larger—and connect it with the positive pole. Now the current is slowly turned on through a rheostat, so as to prevent unpleasant sensation, until the meter registers twenty M. A. Mild currents are nourishing; intense currents are irritating. Each treatment must last not less than thirty minutes, the patient lying with the electrodes undisturbed. During a long treatment the current flows through the body smoothly, pacifying and resting the patient, and inducing the desired chemical changes at the pathological focus. The posterior nerve roots, which are always in an atrophic condition, are benefited first, and despite the fact that the negative pole has a relaxing influence, it strengthens the affected structure, and the patient feels, after each treatment, some degree of beneficial influence. The areas which have been under the action of the poles are quite red, showing the degree of action. Fat or anemic patients show less reaction, and fat patients bear a stronger current with comfort. I always use copper electrodes, covered with thick felt, which latter must absorb water freely, and must always be thoroughly saturated with warm water. The backs of the electrodes are covered with heavy rubber, to confine the current and the water. The binding key must be kept well under the felt and must be covered with a piece of rubber, to prevent concentrated action or burning. A clean towel must always be placed over the wet felt, as the felt absorbs impurities of the skin and loses gradually its absorbing quality, and as it is not in accordance with the rules of hygiene to bring the felt in contact with the skin of various patients. Moreover, the felt irritates the skin, especially when new. After the treatment the areas of the skin which have been subjected to the current must be gently dried with a towel and then rubbed with a little petrolatum, to prevent catching cold.

As stated before, the positive pole of a constant current causes an acid, the negative an alkaline reaction, and each acts on the tissues in the same manner as acid or alkaline solutions do, but there is a great difference between an electrolytic and a simple chemical action. When the current starts to flow through the body the impulse proceeds from the positive electrode toward the negative, and the electrodes

form the bases of the polar zones, from which the electrolytic action proceeds to reach the opposite. As the current is turned on each pole attempts to overcome all obstructions—resistance—to establish communication. As soon as communication is established each pole proceeds to reach its opposite by actual contact, and, to accomplish this, it attracts, according to its strength, material of its kind from the nearest tissues, and places it in line toward the opposite. Under the positive pole all acid principles, and under the negative all alkaline principles, are attracted, and the longer the current flows the more material is placed in front of each pole, increasing the depth of the polar zones and so shortening the interpolar zone. Now, while this polar activity lasts, we see how, under the action of the positive, the tissues contract, and how they expand under the negative. If you cut a potato in half and stick the tips of the electrodes of a constant current battery in it, a little apart from each other, and turn the current on, you soon see the potato substance at the positive pole growing green and contracting, and at the negative growing white, expanding and bubbling. When we remove the positive pole we find it firm in the substance and corroded, while the negative is quite loose and bright. This is a simple experiment, and it also distinguishes, in case of doubt, the positive from the negative. This electrochemical process offers us, therefore, by its polarity, two potent agents which grow more and more potent in our hands as experience increases, and teaches us how and when to employ them in pathological conditions. But, in order to employ polarity with benefit against diseases, the physician must know the pathology of each disease, its site, and that pathological foci grow to be such by deviation of the chemical condition from normal.

Besides the polar effects, the constant current, if properly employed, exerts a highly beneficial biological influence on the whole body, which pacifies the nervous system and strengthens the nerve centers for their duties. To increase the nutrition of the brain I place under the occipito-cervical region an electrode large enough for the area, and connect it with the positive pole, the patient being in the recumbent position; then I cover the orbital regions and nose with a strip of clean linen, and over each eye I place a thick pad of absorbent cotton, well saturated with cold water. Now I place over the pads the electrode, which is, practically, a spectacle frame, but instead of glasses it has two slightly concave copper plates as large as the eyes. To secure proper action of the current all electrodes, wherever placed, must be weighted down, to establish capillary attraction. To both ends of the eye electrode strings are attached, which are led around the occiput, where they cross each other; then I tie both ends of the strings over the electrode, so as to effect the desired pressure without discomfort to the patient. Now I connect the eye electrode with the negative pole, and turn the current gently and slowly on, until the meter shows five milliamperes. I seldom go over ten milliamperes, and not often so high. With ten milliamperes and thick pads the application can be made for thirty minutes. After the patient has received about ten treatments to the spinal cord, I give about five treatments to the brain. By this time the patient will volunteer the information that he feels stronger in his legs, clearer in his head, and that he sees better.

To stimulate nutrition at the pathological foci still more, and to give the tissues rest from the galvanic current, I employ the high-tension current through a Geissler tube, also bipolar. For the spinal cord one electrode rests, as for the galvanic treatment, under the lumbar spine, and is connected with the pole of negative direction, the other electrode, a cylinder of metal or glass, is inserted, for males into the rectum, for females into the vagina, and connected with the pole of positive direction. For the brain the electrodes are also applied as for the galvanic current; the positive direction of the current is connected to the electrode under the occipito-cervical region, the negative direction to the electrode over the eyes. At each sitting I allow this current to flow about fifteen minutes to the spine, and about five to ten minutes to the brain. There is but little sensation connected with this current, and it appears, therefore, harmless, but it has after-effects which, in some patients, are quite marked and show themselves by peculiar sensations in the lower extremities and in the head. It is, therefore, better to begin with low pressure and short treatments, to avoid any unpleasant reaction. Three to five high-tension current treatments in succession, every other day, is all that is required from time to time. High-tension currents have no polarity, but they have direction. When you place an old style Geissler tube in the circuit, you will perceive that the bulb at one end is filled with a cloud of colored light, but that the bulb at the other end is empty; and you will further find that the empty bulb is connected with the positive element of the battery and the filled bulb with the negative element. I, therefore, speak of positive and negative direction. I observed this phenomena when a boy, during lectures on and demonstrations of physical forces, and remembered it when I began to employ electricity, fifteen years ago. It occurred to me then that if the pressure from the positive pole was strong enough to keep its bulb empty and that as the negative filled, that it then could also have a propelling force on the fluids of the body, and should be useful in depleting congested areas, or forcing nutrition where it was impaired. And I found that all high-tension currents had, actually, the expected effect; but through a tube this effect is increased and sensation diminished. Moreover, this tube by its bulb, acts, like the potato, as a reliable indicator of positive and negative direction of any induced current, from coils energized by a constant current, and having from ten to thirty thousand feet of wire. Too high pressure fills both bulbs of a small tube and fails to show the direction.

To increase the nutrition of the muscular and peripheral nerves I employ the faradic current. When I treat the anterior surface of the body the patient is in the recumbent position, with an electrode, connected to the negative element of the battery, under the whole spine. The positive element of the battery is connected to a round disk electrode, covered with absorbent cotton, well saturated with warm water. With this round electrode, about the size of a silver dollar, I work over the whole anterior surface of the body, from the head down to the toes. Then the patient turns face down, the stabile electrode now under the abdomen, and the whole procedure is repeated on the posterior surface of the body, from the occiput to the toes. Each treatment takes about thirty minutes, and for each new cotton is used. Now and then I use the constant current in the same way. These treatments are quite stimulating, but care must be taken that the patient does not catch cold. For this reason the operating chair is covered with heavy cotton-flannel sheets. The presenting surface of the body is also well covered with such sheets, except the part just under treatment, which is immediately dried with a towel by the office-nurse, after another part is taken under treatment, and covered as soon as dried. These general treatments I give about

once per week between the regular galvanic or Geissler application. All conducting cords are covered by rubber-tubing, to prevent escape of current and annoyance to the patient. During the last two years I have been using also the alternating street current through a transformer, which is practically a faradic apparatus with a secondary coil. This current has considerable amperage, which can be increased or diminished, according to the length and caliber of the wire in the secondary coil. Various binding posts, connected with certain sections of the coil, and the movability of the coil, allow an endless variety of the current, to meet any intention. I also use this current at times for general surface treatment, and at times stabile instead of the galvanic. As a rule I give three treatments per week, and keep a record of each treatment. Before I treat a patient I ask how he felt after the last treatment and how he feels generally. All information the patient gives I record also, and decide then what the next treatment shall be.

Vibration of the spine appears as a logical therapeutic agent in tabes, and manufacturers, and those interested in the sale of vibrators, exert themselves considerably to obtain testimony from physicians to prove that it cures tabes and every other ailment human flesh is heir to, but all that can be said in favor of vibration is, that it is somewhat stimulating, if judiciously applied, and that it is beneficial to tissues in any part of the body to about the same degree as massage. Vibration has advantages over massage in some directions, and massage has advantages over vibration in other directions; the modus operandi differs in both, but the effect is practically the same.

This much for the general treatment of tabes. For cases recognized early nothing else will be required, and what has been considered will, if employed assiduously and with good judgment, be generally beneficial. In time it will arrest the progress of the disease, and will gradually lead to a practical, if not to an absolute cure, provided the treatment is carried on a few years, after all symptoms have disappeared. It is, however, generally necessary to give the patient, for one month or two, rest from the current, after forty to fifty treatments have been taken. During this period of rest the patient must be kept under control and observation, so that digestion, assimilation, favorable hygienic condition, and good spirits be maintained, and that no meddlers get a chance to interfere and to spoil what has been done. When the disease has already advanced so far as to give symptoms of disturbed locomotion and of ocular failure, we may still arrest the progress of degeneration, but when cerebellar and visceral symptoms appear, then all that we can hope to accomplish is to keep the patient comfortable, and to retard the progress of degeneration.

Besides the treatment outlined above, special treatment to oppose symptoms is required. When the lancinating pains in the lower extremities fail to yield to the current, and are taxing the patient's strength, ten grains of acetanilid, combined with powdered extract of digitalis, gives, as a rule, sufficient relief and cause no deleterious effects. Given at night, before retiring, it procures sleep. Opium or any of its derivatives must be avoided, as they have a paralyzing influence, which favors the progress of the disease.

In 1893 I concluded that the rest-treatment was an error, and I required my tabetics to walk as much as possible, and to aim or strike with their toes and fingers at objects, so as to engage the muscles of all extremities in all possible directions, and to exercise every muscle of the body. I also required bending of the spine in all directions. A few steps and a few exercises at short intervals are highly beneficial, but even the slightest degree of fatigue must be avoided. Standing with open and closed eyes and maintaining the equilibrium, without leaning on any object, must also be practised. All exercises must be carried out forcefully, with as much will power as possible. By bringing will power into play the efforts from the centers of volition tend not only to keep up life in the nerve cells and fibers, but also to generate new nerve tissues, and are, therefore, obviously, extremely important. Five years later Fraenkel published his views as to exercise in tabes, and since then exercise treatment is a matter of course. As long as the muscles, tendons, and ligaments of the lower extremities possess enough tone the walking and standing exercises can be taken up without delay. When, however, these structures have been permitted to lose the required tonicity, the peroneal muscles fail to act on the external sides of the feet and the patient shows a tendency to fall sideways. To oppose this tendency the patient throws his weight, with each step, on the inner side of the foot. The ligaments of the ankles and of the feet have also, by this time, lost normal tonicity, and the weight of the body, directed on the inner side of the foot, soon grows too much for them, and the plantar arch descends gradually more and more, till it rests on the ground. Now, while the descent of the arch is a pathological consequence, it is nevertheless a compensation which meets the failure of the peroneal tendons and muscles, and permits, to some degree, maintenance of equilibrium. The failure of the peroneal muscles and of the plantar arch, therefore, do not prevent walking. As, however, the process of degeneration in the ligaments of the ankle-joints increases in degree they fail to hold the tibia and fibula in place; and, as the tendons of the peroneal muscles have failed before this, the patient experiences, according to the degree of the hypotonia, difficulty or inability to maintain himself on his feet. This is the reason why walking becomes difficult or impossible. To enable the patient to walk shoes must be constructed which will at once elevate the external sides of the feet, support the plantar arches and hold the tibia and fibula on the tarsal bones. Various shoes have been ordered by various physicians, and much humbug and fraud have been and are being practised on the poor victims by enterprising imposters, and yet all that is necessary is a lace shoe with an elevated outside, having a strong steel spring or leather beam, to support the plantar arch, and a stout leather cuff, extending from the heel over the maleoli. The degree of side and arch-elevation must correspond to the needs of each case; too much of either causes pressure and renders the shoe useless.

To prevent, or to correct, ocular symptoms, thick absorbent cotton compresses, thoroughly saturated with glycerine, to which a little bicarbonate of soda is added, the latter to prevent irritation of the eyelids, are at night placed over the eyes, and covered with oiled silk to confine the glycerin. These compresses are very beneficial adjuvants to the current, especially against strabismus and diplopia.

To oppose the sensation of constriction on the chest, the girdle-feeling about the waistline, and the cramps in the bowels; to allay restlessness and to procure sleep, the acetanilid mentioned before, about ten grains, with powdered extract of digitalis according to necessity, is very useful. In some cases whisky or gin are more beneficial, and preferable to opium in any form. Opium and its derivatives must be used only when nothing else will allay suffering.

The more opiates the worse the tabetic lesions grow. When all hope for recovery or improvement is given up make the last days of the poor victims as comfortable as possible by every means. When the stomach grows irritable, water, decidedly acidulated with muriatic acid, is of great service. The patient sips of it off and on, according to his own judgment. When the bowels fail to digest and to absorb the food, decomposition with consequent diarrhea sets in. For this the acidulated water is also helpful, but more so the tincture of chloride of iron, used in the same manner as the acid. But when the iron solution disagrees, iron carbonate in pill form, in small quantities at frequent intervals, often prove very beneficial. When the kidneys act sluggishly and the bladder loses its sensitiveness, residuary urine remains in the bladder, which sets up a peculiar cystitis, without causing subjective symptoms, but which is decidedly detrimental to the system. To counteract this, drinking as much water as possible, with a little bicarbonate of soda, or with lemon juice is useful. One grain of methylene blue after each meal, for three days in succession, every fourteen days, counteracts decomposition of the residuary urine and cleans the blood.

When this disease is once well established all we can hope to accomplish then is to keep the patient comfortable and to prolong life. It is, therefore, of utmost importance to recognize tabes in its very incipiency. Judicious treatment will then check the progress of the disease and restore the involved structures to a normal, or to a practically normal condition. When the disease approaches its termination in cases due to traumatism, symptoms referring to the spine, by spastic or convulsive movements of the upper and lower extremities, and of the muscles of the abdomen and trunk, appear, and grow in intensity until the patient dies from exhaustion. But speech and reason remain clear until the end. In all other types, especially in the cerebro-cerebellar type, bulbar symptoms, which were present before, increase until speech is impossible, for which reason it is often so difficult to ascertain whether the patient is conscious or not. The death struggle, while resembling that of general paresis, appears even more horrible in tabes, because we cannot overcome a feeling which makes us believe that the patient is conscious of his agony. Tabes presents a great variety of symptoms, different in almost every patient, and most perplexing; the death scenes of tabetics present, however, a still greater variety, which writes large and indelible question marks on the brains of the observing physicians. But, however the last symptoms appear, they present a most striking and pitiful scene of suffering, which to prevent or to end as soon as possible, is the last and most substantial treatment a physician can give his departing patient.

1 West One Hundred and Second Street.

Appendicular Tuberculosis.—Verdelet gives an interesting résumé of Lacouture's recent thesis on this subject. This investigator shows that in a patient free from any other tuberculous focus, there sometimes develops a lesion of the appendix, due to the invasion of the tubercle bacilli. The evolution of this affection is sometimes slow, and it most often manifests phenomena resembling those of ordinary appendicitis. Besides these symptoms, there are the possible peritoneal complications from the invasion of the peritoneum and large intestine by this disease. The diagnosis is difficult to make. A study of the antecedents of the patient, of the clinical phenomena, and of the excreta in doubtful cases, must be fortified by the microscopical findings. Removal of the appendix is indicated. This intervention should be followed by a thorough examination of the neighboring organs, the condition of which may demand a more extensive operation than that of simple appendectomy.—*Journal de Médecine de Bordeaux.*

SANITARY SUPERVISION OF PULMONARY TUBERCULOSIS AND OTHER COMMUNICABLE DISEASES BY THE DEPARTMENT OF HEALTH OF THE CITY OF NEW YORK.

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The Department of Health exercises sanitary supervision over pulmonary tuberculosis, typhoid fever, cerebrospinal meningitis, pneumonia, malaria, puerperal septicemia, and erysipelas, by virtue of sections 133, 134, 135, 136, 137, 138, 139, and 144 of the sanitary code.

The general procedure is as follows:

1. All cases of pulmonary tuberculosis, typhoid fever, and cerebrospinal meningitis, occurring in the City of New York are registered at the Department of Health; and all necessary steps taken to render that registration as accurate and complete as possible.

2. Every person (or the family of such persons) suffering from those diseases is furnished instructions as to the measures to be taken to prevent its extension.

3. Bedding, etc., used by persons suffering from those diseases, is disinfected. All premises which have been occupied by persons suffering from pulmonary tuberculosis or cerebrospinal meningitis, on death, removal, or recovery of the patient, are disinfected with formaldehyde, or renovation is ordered.

4. Charitable assistance or hospital care is provided so far as is possible for all persons wishing or requiring such assistance or care.

5. The general public is educated as to the nature of the above diseases, the precautions to be taken against their spread, the advisability of institution and sanatorium treatment, etc.

6. *Pulmonary Tuberculosis.*—Patients with no attending physician are (*a*) visited at their homes by nurses and given necessary assistance and advice, (*b*) provided with extra diet (milk and eggs) when necessary, and (*c*) given free medical treatment at the Department Clinics.

7. *Typhoid Fever.*—Information as to the probable source of infection (water, milk, oysters, etc.) is obtained in every case, and suitable action taken.

8. *Cerebrospinal Meningitis.*—Quarantine of patients at their homes is enforced and other children in the family excluded from school.

TUBERCULOSIS.

Routine Procedure.—The sanitary supervision of pulmonary tuberculosis in the different Boroughs of the city is carried on by means of the same staff of inspectors who administer diphtheria antitoxin. The staff of nurses is apportioned as follows: Manhattan, seven; Brooklyn, four; Bronx, one, and Richmond and Queens, one. Each nurse has a certain section of the city assigned to her.

Notification.—Cases of tuberculosis are reported to the Department of Health by (1) private physicians, (*a*) on the postal cards furnished, (*b*) by the forwarding of specimens of sputum for examination to the Diagnosis Laboratory; (2) institutions (hospitals, sanatoria, dispensaries), on postal cards furnished; (3) death certificates, forwarded to the Bureau of Records; (4) complaints from lay individuals or organizations; (5) employees of this and other departments of the city.

The various records, files, indices, etc., of cases of pulmonary tuberculosis center around an alphabetical "name" index, in which the name, age, address, date, case number, and source of report of every living case are entered, together with the name of the sub-index in which the record card is filed. The

actual record cards are filed in different sub-indices according to circumstances, as follows:

1. "Private cases" (p. c. on name card), reported by private physicians and not visited by inspectors or nurses.

2. "At home" (a. h. on name card); cases at their homes under supervision by the Department (*i.e.* not under the care of a physician).

3. "Hospital" cases ("hosp." in the space for name of institution), reported as having entered a hospital.

4. "Not found" cases (n. f.); those not found at address under which reported.

5. "Dead" cases (name card is destroyed).

6. "Out of town" cases (o. o. t.); reported as having left the city.

7. "No case" and "Recovered" (n. c.); found on investigation not to be cases of tuberculosis, or reported as recovered.

General Routine.—On the receipt of report of a case, from whatever source, it is first searched for in name index. If it is a new (previously unreported) case, a record case number is assigned (beginning each January 1), which is written on the original postal card or report card from Diagnosis Laboratory in red ink. If an old case (a duplicate), the old number is written in black ink. A blue "record" card is then made out, on which all essential facts are entered, and (later) every official action and recommendation of the Department—dates of inspection and by whom, records of fumigation and renovation, forcible removal, etc. Changes of address, entrance into hospital, duplicate reports, etc., are also noted on this card. The original report is then filed in "report card" index, according to date of receipt. Only postal cards and sputum report cards are so filed; all other forms of reports are transferred to a postal card before filing. This index is kept for five years.

A record is kept of every case assigned to an inspector or nurse, by means of a "tally" index showing exactly what cases are being investigated by each inspector and nurse. A small "tally" card for each case is filed under the employee's name and is only removed on receipt from him or her of all cards, etc., relating to the case. This index is gone over once a week and any delays inquired into.

Private cases are not visited except at the request of the attending physician. A leter is sent to the physician, acknowledging receipt of report, calling his attention to the necessity for reporting any change of address or discontinuance of treatment on the part of the patient, and enclosing a circular of instruction, which (or its equivalent) the physician is requested to give to the family of the patient or to the patient himself. A card index is kept of the names of all physicians reporting "private" cases, together with names of cases. The large record card is then filed in the "private" case index according to patient's address. Once a year a letter is sent to the attending physician of every "private" case, asking for information as to outcome of case. If no answer is received, the case is followed up by the Department. Such cases, if found (also all "private" cases reported later by institutions) come under the supervision of the Department, the "p. c." on name card being stricken out.

At home cases are reported by (*a*) dispensaries and charitable organizations, (*b*) laymen, (*c*) physicians, with request that they be visited, and (*d*) hospitals, as having been discharged. Such cases are at once assigned for investigation and report to the nurse in whose district the patient lives. The date of assignment and name of nurse are entered on blue record card, which is mailed to the nurse. If the patient is found, a pink "observation" card is filled out, giving all essential data (if not found, that fact is noted on record card, which is returned). Record and observation cards are returned by mail on the day of inspection. Any recommendations (hospital, charitable aid, etc.) are indicated by writing date in proper space on record card. If case is kept under observation, a white "nurse's" card is filled out and retained, on same being entered all records of weekly visits. On termination of supervision (by death, improvement, removal to hospital, removal outside nurse's district, etc.) the nurse's card is returned. Recommendations by nurse during observation or on termination of case (for disinfection, forcible removal, etc.) are made on a special postal card.

On receipt of record at Borough office, (1) if tuberculosis case was "not found," that fact is indicated on name card and in book for recording number of "not found" cases, and card is filed in "not found" index. A letter is sent to individual who reported the case, requesting correct address. (2) If found, the record card is stamped "observation card" on left-hand margin, and filed in "at home" index. If not to be kept under observation by the nurse, the pink "observation" card is filed with it; if kept under observation the pink card is filed in the "tally" index under nurse's name, forming record of cases under her observation. Each week a record is kept of number of cases under observation in each district. On return of white "nurse's" card, it is attached to observation card and record card, and appropriately filed.

Cases needing charitable assistance are referred to the Charity Organization Society, Association for Improving the Condition of the Poor, United Hebrew Charities, Brooklyn Bureau of Charities, etc., by telephone and postal card, a card index being kept of all such recommendations.

Milw, two quarts daily for one month, eggs, three daily for two weeks, are issued in cases where such extra diet is called for as a part of treatment. On recommendation of the nurse, an order on the nearest depot is issued, a record being kept of all recommendations. The following are the depots:

Manhattan Diet Kitchen Association: Raymond Kitchen, 423 West Forty-first street; Rusch Kitchen, 146 East Seventh street; Freeman Kitchen, 335 East Twenty-first street; Wickham Kitchen, 137 Centre street; Gibbons Kitchen, 140 East Ninety-seventh street; Hackley Kitchen, 26 Barrow street; Anne Barbara Kitchen, 205 West Sixty-second street. Brooklyn: Brooklyn Bureau of Charities, 1600 Fulton street, 191 Marcy avenue, 69 Schermerhorn street, 174 Johnson street, 98 Sackett street, 255 Division avenue.

Sputum cups, both pocket and home (metal framed with removal filling), are issued by the nurses.

Instructions are given to the patient and his family both verbally and by means of the "Circular of Instruction to Consumptives and Those Living with Them," each circular being printed in English and one other language—German, Italian, Yiddish, Ruthenian, Slovak, Polish, Bohemian, and Chinese.

Cases of tuberculosis attending the dispensaries of Gouverneur, Bellevue, Presbyterian, and Harlem Hospitals, and the Vanderbilt Clinic, and kept under observation by the nurses of these dispensaries, are not visited. In order to avoid duplication of visits, these dispensaries are furnished with postals to notify the Department that the case is being kept under observation. These postals are filed under the name of the dispensary, forming a record. Twice a year this is compared with the records at the dis-

pensary. All cases must also be reported in usual way, but are held two weeks awaiting receipt of special dispensary postal. If not received, patients are visited.

All suitable cases are urged to enter a hospital; if consent is obtained, the recommendation is made on proper space on record card, date and name of institution preferred being given. If recommended to Riverside Hospital, the patient's name is placed on waiting list; when vacancy occurs, an admission card is made out and delivered by the district nurse, who obtains information called for on card and reports as to necessity for ambulance, coupé, etc. In emergency cases, when an ambulance is required, the hospital in whose ambulance district the patient lives is requested to remove the patient to Bellevue, whence he is transferred to the Metropolitan Hospital or to St. Vincent's Sanatorium.

Ambulance Districts in the Borough of Manhattan:

Gouverneur Hospital...	Houston to Front Sts., Bowery to East River.
Bellevue Hospital.....	Houston to 42d Sts., 4th Ave. to East River.
Flower Hospital.....	42d to 59th sts., 6th Ave. to East River.
Presbyterian Hospital...	59th to 96th Sts., 5th Ave. to East River.
Harlem Hospital.....	96th St. to Harlem River, Lenox Ave. to East River.
J. Hood Wright Hosp...	86th St. to Kingsbridge, Lenox Ave. to North River.
Roosevelt Hospital....	27th to 86th Sts., 8th Ave. to North River; 42d St. to 6th Ave. to 59th St.
New York Hospital....	14th to 27th Sts., 4th Ave. to North River; 27th to 42d Sts., 7th Ave. to Park Ave.
St. Vincent's Hospital...	14th St. to Canal St., 4th Ave. to North River.
House of Relief.....	Catherine St. to North River, Canal St. to Battery.

All requests for admission to the hospitals of the Department of Charities and also to St. Joseph's, Seton, and Lincoln Hospitals, are referred to the Department of Charities, by telephone, by a double card (one half being given to patient and the other being filed in borough office), and by postal card.

Forcible Removal.—When the necessary precautions cannot or will not be observed, and when others (especially children) are exposed to infection, a patient may be removed to Riverside Sanatorium by force if necessary, even if consent of patient or family is not obtained.

Notification of Employer.—When patients continue at work and may be sources of danger to their fellow workmen, the employer is visited and notified as to the danger of infection, and precautions to be taken. Placards forbidding promiscuous spitting are furnished free, to be put up in the work place.

Notification of Landlord.—When it is evident that premises will need renovation after removal of patient, the owner or agent is required to promptly notify the Department when such removal takes place, and also as to new address. A postal card is also left by the nurse with such patients, on which any change of address is reported.

Unsanitary Conditions.—All unsanitary conditions (bad drainage, leaky plumbing, etc.) are reported. If occurring in a tenement house, the complaint is referred to the Tenement House Department; if not, to the Division of Inspections of the Department of Health. (A tenement is any house containing three or more families.)

On death, removal to a hospital, or change of address of a case "under observation," the district nurse is notified by postal to return all cards, etc.

Treatment.—When patients are not receiving medical care, they are referred to one of the Tuberculosis Clinics of the Department of Health, a double reference card being used, one half being given to the patient, and one mailed to clinic.

Discharge from Hospital.—Every hospital must report all discharges and transfers of cases of tuberculosis. Every case returning home is at once visited to see if treatment is being continued, instructions observed, etc. Each morning a report is obtained by telephone from Seton, Lincoln, St. Vincent's, Metropolitan, St. Joseph's, and Riverside Hospitals of (*a*) all patients discharged the day before and (*b*) of all cases to be discharged three days later. The former (*a*) are noted on a "discharge card" and visited at once; as many of these patients remain at home only a day or two. The latter (*b*) are noted on a "nurse's discharge" card and each case assigned at once by telephone to the district nurse for investigation as to whether patient should be allowed to return home. She reports by telephone within twenty-four hours, her report being entered on card, which is filed, and hospital notified. Should a patient returning to unfavorable home surroundings, or giving wrong address, insist on being discharged, the patient can be transferred to Riverside Hospital.

"Suspected Cases" and Complaints.—All cases reported by lay individuals and organizations, and nurses, are classed as "suspected" cases and are visited by the district medical inspector, who reports results of physical examination and nature of ailment on observation card. The original report cards are filed separately until the case has been reported on, when person reporting case is notified of result. If case proves to be one of tuberculosis, the usual routine is followed, except that when inspector recommends that case be kept under observation, the record and observation cards are filed, and a white nurse's card filled out and sent to district nurse. If not tuberculosis, it is classed as "no case," so recorded in name index, and filed. All complaints by citizens (as to spitting, necessity for hospital treatment, etc.) are investigated by a district inspector, who submits a formal report. If there is a physician in attendance, he is visited and requested to see that nuisance is abated, if one exists.

Incipient Cases and Sanatorium Treatment.—All apparently incipient cases seen by nurses and inspectors, or calling at Borough offices, are referred by card to a Tuberculosis Clinic of the Department for examination as to their eligibility for sanatorium treatment. Very incipient cases are referred to the New York State Hospital for Incipient Tuberculosis. Suitable cases are also referred to the Stonywold, the Loomis, and the Adirondack Sanatoria.

School Children.—Only in the most exceptional cases are children with tuberculosis allowed to attend school. Such cases are excluded from school by medical school inspectors, pending their examination at one of the Tuberculosis Clinics of the Department, whence a report is sent to the Division of Contagious Diseases. Every effort is made to have such children enter a sanatorium or hospital.

Hospital Cases.—Every hospital in New York City is required to report all cases of tuberculosis within one week of their admission, using a postal card furnished. Each hospital and dispensary is visited once a month and their supply of the various reporting postal cards replenished. The larger hospitals (Bellevue, Metropolitan, etc.) report daily. A weekly record book is kept of the number of cases (new and duplicate) reported by each institution

throughout the year. When no report is received within two weeks, inquiry is made by telephone. The yearly totals are compared with the number of cases given in the annual report of each institution.

Census.—Twice a year (March 1 and August 1) a census is taken of all cases of tuberculosis in institutions in New York City, a special blank being supplied to each institution. These censuses are compared with the "hospital index," *i.e.* the cases supposed to be in each hospital, and all discrepancies investigated, the results for each institution being recorded. Every case reported as entering a hospital is assigned to a district inspector, who recommends the necessary renovation, fumigation, and disinfection of bedding, such recommendations being recorded in the proper spaces on the record card by means of the date. (It is also stated if patient will return to premises or not.) According to the condition of the premises, the inspector may recommend: (*a*) That nothing need be done. This is most exceptional, only obtaining in very clean apartments and those where the patient only spent one or two nights on the premises. (*b*) That the room occupied by the patient be fumigated with formaldehyde. (*c*) That the patient's room be thoroughly renovated, the walls and ceilings washed and rekalsomined, repapered or repainted, and the woodwork and floors be washed and repainted, the rest of the apartment being fumigated with formaldehyde. (*d*) That the whole apartment be renovated. Renovation of the premises (washing of floors and woodwork with antiseptic solution, repapering, painting and kalsomining) is recommended on a complaint blank, which, after being approved and journalized, is forwarded to the Sanitary Superintendent for enforcement. When cancellation, extension of time, or modification of order is asked for, the case is reinspected by the original inspector. When there is reason to believe that renovation will be evaded, or where the premises are vacated by the death or removal of the patient and renovation has been ordered, the inspector orders the premises placarded. A paster is then filled out at the Borough office, journalized, and forwarded to the Division of Inspections to be put up. When owner or agent, voluntary performs renovation, that fact is reported, a yearly record being kept of the number of such voluntary renovations. Fumigation with formaldehyde and disinfection of bedding is ordered on a card, on which number and size of rooms, date fumigation is to be performed, etc., are noted. All fumigation orders for the day are entered by inspector on a slip, which is forwarded with the fumigation cards to the Division of Contagious Diseases. In an emergency the fumigation order can be telephoned, but the card is also submitted. All bedding is fumigated before it is removed for disinfection, for the protection of the Department employees, and is returned in twenty-four hours. The tally card of the case is filed separately as a check on fumigation. The fumigation card is returned by Division of Contagious Diseases after its recommendations have been complied with, and the tally card is destroyed and fumigation card is filed according to date, being kept about four months.

On receipt of record card from inspector, it is filed in "hospital index" alphabetically according to name of hospital, which is written on small name card. In cases reported as having moved to a new address or having left the city, the same routine procedure is followed out. In cases living in private houses, disinfection can be done under the supervision of the attending physician, but he must submit a certificate. Lodging houses are not disinfected, that being the duty of the managers of such houses.

"Not Found" Cases. — When an inspector or nurse reports that no record can be found of a case at the address given, a letter is written to the person reporting the case, requesting the correct address. If this cannot be found, the name card is marked "n. f." and the record card filed in the annual "not found" index. These files are kept three years, when the record cards are destroyed and the name cards removed from the name index and filed in an "old not found name index." A daily record is kept of the number of "not found" cases reported.

Dead Cases.—All deaths from tuberculosis occurring during the preceding twenty-four hours are reported daily by the Bureau of Records. The record and name cards are stamped "Dead" and the former assigned to inspectors to order the necessary fumigation, etc., the latter being used as a tally card, and all cards of the case filed in "dead" index for the current year, which is kept for two years before being destroyed. Every previously unreported dead case receives a special serial case number, and a letter is written to the attending physician or institution calling his attention to the violation of the Sanitary Code and requesting an explanation. Should no answer be received, a second letter, signed by the Secretary of the Department, is sent, demanding an explanation on pain of prosecution. A record is kept under each physician's name of all such unreported cases, nature of explanation, etc. (unreported cases of typhoid fever, cerebrospinal meningitis, etc., are recorded in the same index). All deaths from pneumonia are daily compared with tuberculosis records. If case had been previously reported during life as tuberculosis, an inspector visits the physician who signed the death certificate and obtains an explanation of the apparent discrepancy, submitting a report on special blank. The same is done for all cases of tuberculosis reported as having died from some other cause. The Bureau of Records is also notified of any change of diagnosis and death certificate corrected.

Map.—Every new case of tuberculosis reported in Manhattan is plotted on a large map of the borough, which shows each house ("not found" cases, of course, excepted). The address is written on a small white card (of private cases, on receipt of postal or sputum report; of all others, on receipt of inspector's or nurse's report stating that patient did live at address given). In Richmond and Queens the cases are plotted on compo-board map by means of colored pins.

Riverside Sanatorium for Tuberculosis. — All cases are admitted through the Division of Communicable Diseases, the names and addresses of applicants being placed upon the waiting list. When a vacancy occurs, an admission card is filled out, for the first eligible case. ("Forcible removal" cases alone take precedence.) This is assigned to a nurse for delivery, who obtains data called for on card and leaves same with patient. If coupé or ambulance is necessary, the Borough hospital is requested to remove the patient. All patients must reach Reception Hospital, at East Sixteenth street, Manhattan, by 1 P. M., as the boat leaves at that hour. Walking cases may cross at East 132d street, whence a boat leaves every hour between 9A. M. and 5 P. M.

No patient is allowed out on pass or is discharged until the conditions at his home have been investigated and found satisfactory. A daily report of cases, deaths, discharges, and admissions is received by telephone each day and added to daily report to Sanitary Superintendent. Every case admitted, dis-

charged, or dead is reported daily on a special card, which is filed according to date.

Regulations.—All inspectors and nurses bear in mind that the Department of Health pledges itself not to interfere in any way with cases of pulmonary tuberculosis under the care of a private physician except where a complaint is made. Even then the attending physician, if there is one, is first visited. The source of complaint is never divulged.

The Inspector-in-Charge examines daily all cards, reports, etc., forwarded by inspectors and nurses, sees that the various recommendations are carried out, and various records, map cards, etc., are kept. When cards are incorrectly or incompletely filled out, the district inspector or nurse is summoned to the borough office.

All cases reported as living in other Boroughs are reported daily to the office of the Borough in which they live. When a patient moves to another Borough, all cards and records of the case are forwarded to the office of that Borough.

Inspectors.—Inspectors report at the Borough office every Monday at 9:30 A.M., bringing with them all cards, etc., in their possession, to be compared with tally index. All inspections are made within three days. Special assignments (forcible removals, diagnoses of suspected cases, etc.) are attended to immediately. Every entry on back of blue record card is dated. An observation card is made out for every case seen, whether tubercular or not, and the result of physical examination written in space "present condition."

In ordering fumigation, the date on which it is to be done is always given on card. Unless the premises are in very bad condition, it is usually sufficient to renovate the room occupied by the patient and to fumigate the rest of the apartment. Where the entire premises are probably infected, renovation should be complete. In cases where the premises are in very good condition, fumigation of the room occupied by the patient may be all that is necessary.

Great care and accuracy are necessary in recommending the kind and amount of renovation necessary, both for the sake of justice to the owner and because an error means a reinspection, probably rescindment of the order for renovation, and the submitting of a new complaint. The floor and position of premises are always noted on the blue card, complaint, fumigation card, etc. The full name of owner or agent is given in complaint; if it cannot be obtained, the fact is stated. All cards and reports, without exception, are mailed on the day the inspection is made. The regular blank is used for all reports.

Nurses.—All district nurses report at the Borough office at 9:30 A.M. on Tuesdays, bringing with them all cards, records, nurse's cards, etc., in their possession. Each nurse makes at least fifty-five inspections a week. All new cases are visited within three days, and all information requested on observation card obtained, special attention being paid to the physical condition of the patient, whether he is a menace to those about him, sanitary condition of the premises, domestic and financial circumstances, need of assistance, knowledge on the part of the patient of the nature of his disease, the care taken to prevent spread of disease, previous or simultaneous occurrence of other cases on the premises or in same family, and, if the case is under treatment, with the name and address of physician or institution. In giving instructions the nurse is guided by the patient's knowledge of the nature of his disease. When the patient knows that he is suffering from pulmonary tuberculosis, full instructions are given. In every case, however, the danger of promiscuous spitting and the necessity for the destruction of sputum is clearly pointed out, and the nurse leaves a copy of the "Circular of Information to Consumptives and Those Living with Them" printed in the language spoken by the patient. An observation card is forwarded for every case living at home, even if the patient is out or is to leave the premises at once. Where information cannot be obtained as to a particular point, a (?) is used. The name and address of the owner or agent of premises occupied by patient is obtained in every instance. Every observation card is dated, given the case number from blue card, and signed by the person filling it out, and it is stated if the patient is to be kept under observation (k. u. o.? yes or no). All cases under observation are visited once every week or ten days, the date of each visit and the condition of the patient being noted on the white card. These cards are gone over every two weeks by the Inspector-in-Charge.

Each nurse telephones the Borough office daily between the hours of 1 and 3 P.M., obtains names and addresses of patients in her district discharged from hospitals or to be discharged three days later, and reports on cases investigated the day before. These inspections are made within twenty-four hours. Cases under treatment at the Tuberculosis Clinics are visited and the large card of information as to home conditions filled out and returned, together with an observation card. (Instead of "yes" or "no" after k. u. o., the word "clinic" is written.) These cases are not kept under regular observation, being revisited only at request of clinic physician.

The following circulars, etc., are issued by the Department to physicians and others interested: Leaflet in reference to the reporting of cases of tuberculosis by physicians; Circular of Information Regarding Measures Adopted for the Sanitary Supervision of Tuberculosis; Circular Regarding Importance of Early Diagnosis of Tuberculosis.

Inspectors and nurses are supplied with pads of small cards forbidding spitting in cars, etc., which they use as occasion arises.

TYPHOID FEVER.

In Manhattan all hospital cases are under the supervision of a special inspector, all cases at their homes being looked after by the district inspectors. In Brooklyn, Bronx, Queens, and Richmond, the assignments of inspectors are the same as for tuberculosis. Cases are reported (1) by physicians and hospitals, on post card; (2) by the Diagnosis Laboratory, as results of examination of specimens of blood and urine; (3) by complaints from citizens and others, and (4) by death certificates. A complete history is obtained of every case reported, and filed according to address. Cases reported by hospitals are filed according to home address, and cross-referenced on a card for each hospital.

Dead cases, those living out of the city, and those not found at the address given are filed separately. On receipt of report, all records are searched to see if the case has been previously reported. If not, the data given on report are entered on a history card and a serial annual case number given.

For investigation, cases are divided into two classes: (*a*) those reported by private physicians; (*b*) those reported in any other way. In all cases reported by physicians, the history card and a stamped envelope for its return are sent to the physician, together with a letter requesting that he forward the desired information. A circular of information regarding the prevention of the spread of the disease, etc., is also sent him, with the request that he give it, or equivalent instructions, to the family of his patient. A record of such letters is kept by means of a tally card filed under physician's name. If, after fourteen days, no reply has

been received, the case is assigned to an inspector for investigation, the "tally card" being transferred to the inspector's record. All cases reported from institutions or by complaints are at once assigned to an inspector, who visits the houses of the patients, including those of patients in hospital, and returns the history with the required information. Every hospital receiving cases of typhoid fever is visited once a week by an inspector, and histories obtained of all new cases. If the patient is ill at home, the inspector makes certain that all precautions against the spread of the disease are being observed, and leaves a copy of the circular, "How to Avoid the Contraction and to Prevent the Spread of Typhoid Fever." When the diagnosis is uncertain, or when it is requested by the attending physician, the inspector obtains and forwards a specimen of blood to the Diagnosis Laboratory for examination for Widal reaction.

Disinfection of bedding is ordered on the termination of all "at home" cases, the same routine being followed as in tuberculosis (*q.v.*); but bedding is not fumigated before removal, premises being fumigated only on request.

All information given by the attending physician in his report having any bearing on the source of infection—namely, unsanitary conditions of premises, addresses of the stores whence the milk and food used by the patient were obtained, possible contamination of the water supply, exposure to other cases of typhoid, etc., etc.—are investigated by the inspector. In all cases where the patient is stated to have been an habitual drinker of milk, an inspection of the milk store is made.

A "milk store index" is kept, in which is recorded under the address of each milk store the date, name, and address of every case of typhoid fever in which that milk was used. The reports of inspection of each milk store or dairy are also filed in the "milk index."

Based on the inspector's reports, complaints as to unsatisfactory sanitary conditions, lack of milk permits, etc., are forwarded to the Assistant Sanitary Superintendent of each Borough for further action. Histories of cases in which such complaints have been made are filed separately, awaiting result. All deaths from typhoid fever are reported daily from Bureau of Records on special blank. Dead cases not previously reported during life are treated in exactly the same manner as similar cases of pulmonary tuberculosis (*q.v.*). Dead cases found on investigation not to be typhoid fever are reported to the Bureau of Records for change of diagnosis on death certificate. Each case on completion of record is plotted on a large compo-board map of the Borough by colored tacks indicating the *possible* sources of infection, as follows: White, no discoverable source (water?); blue, habitual milk drinker; green, habitual oyster eater; red, out of city during the two weeks preceding illness; orange, exposed to another case of typhoid fever.

Inspectors bring all histories, records, etc. (even if incomplete) in their possession to the Borough office every Monday morning.

The following circulars of information are issued and distributed: "Information Regarding Typhoid Fever," "Importance of Disinfection of Urine and Feces in Typhoid Fever," and "How to Avoid the Contraction and to Prevent the Spread of Typhoid Fever."

CEREBROSPINAL MENINGITIS.

This was declared a communicable disease by the Board of Health April 19, 1905.

The districts are the same as those for tuberculosis. Cases are reported by physicians and hospitals, on postal; by the Diagnosis Laboratory, from results of examination of spinal fluid; by death certificates, and by complaints. A full history is obtained of each case (home surroundings, symptoms, etc.), which, when completed, is filed according to address. Each new case reported is compared with this record; if unreported, the data on the report card are entered on the history card, and the latter is assigned to an inspector, a tally card being filed under the inspector's name as a record. The inspector visits the home of the patient within twenty-four hours, obtains all required information as to sanitary surroundings, past history of patient, exposure, etc. If the patient is at home, full instructions are given the family verbally and by circular as to the nature of the disease, isolation is enforced, and other tenants in house are notified. All children in the family are excluded from school, a postal being sent the school superintendent. The case is kept under supervision by the inspector, who sees that the rules of quarantine are being observed. If they are wilfully violated, removal to hospital may be recommended. If the patient is dead when inspector calls, or has been removed to a hospital, fumigation of premises and disinfection of bedding is ordered, just as in tuberculosis (*q.v.*); the same is done after patient has recovered. Certificates permitting children to return to school are then issued by inspector and left at the house. Deaths are reported daily by Bureau of Records. In all dead cases not previously reported during life, an explanation is demanded of the physician, as in tuberculosis, the same index being used (*q.v.*).

The clinical history of each case is obtained from the attending physician or hospital, the proper district inspector being assigned to that duty. All dead cases found not to be cerebrospinal meningitis are reported to the Bureau of Records, where diagnosis on certificate is changed.

Every fatal case of meningitis (tuberculous, etc.) in children is investigated and a history obtained.

Inspectors bring all cards, etc., (completed or not) to the borough office every Monday for comparison with the tally cards.

A circular is issued and distributed, entitled, "Circular of Information Regarding Cerebrospinal Meningitis."

MALARIAL FEVER, ABORTION, PUERPERAL SEPTICEMIA, ERYSIPELAS, AND PNEUMONIA.

While the above are reportable diseases, the patients are at present not visited, the report postal being simply filed for statistical reference and tabulation. History blanks have been prepared for pneumonia, abortion, and puerperal septicemia.

All cases of death from "malaria" are assigned to an inspector, who visits the attending physician to inquire if the case was not really one of typhoid fever, if blood tests were made, etc.

The following circulars in reference to malaria are issued on "Notification and Microscopical Diagnosis"; on "Prevention of Malaria"; leaflet.

32 East Fifty-third Street.

A CASE OF COMPLETE INVERSION OF THE UTERUS.

By J. SEYMOUR EMANS, M.D.,

NEW YORK.

INSTRUCTOR IN MEDICINE, AND ASSISTANT ATTENDING PHYSICIAN AT THE NEW YORK POST-GRADUATE HOSPITAL.

A CONDITION which arises but once in about 200,000 cases of confinement seems worth reporting. During 1904 there were 103,881 births reported in Greater New York. Thus, in a population of about 4,000,000 people, there should be but one case of inversion of the uterus in two years, or

about ten cases per year in the whole United States. The literature from 1803 to 1905 gives approximately these figures. About 570 cases have been reported; fifty per cent. were complete inversions, 140, twenty-six and one-half per cent., mostly recent cases, were reduced by taxis and mechanical means; 100, mostly chronic, were operated on; fifteen underwent spontaneous reduction; fifty per cent. became chronic, and twenty per cent. died.

M. H., thirty-six years of age, born in the United States, married, primipara. Her father, who was born in Portugal and reared in Spain, died of pleurisy in his thirty-seventh year. The mother, born in Ireland, is living. One sister died of phthisis in her forty-second year. Two others are living and well.

The patient had measles and false croup when a child, but has enjoyed good health ever since. Menstruation began at the fifteenth year, has been regular, lasted three days, flow moderate, no pain. From her eighteenth to her thirtieth year she worked in a tobacco factory. She then worked ten to thirteen hours a day as ironer in a laundry, up to the time of her marriage. After her marriage she menstruated but once, November 18, 1904, and then became pregnant. During this time she was perfectly well, until August 31, 1905, at 6 A.M., she had a discharge of blood, enough to soil three napkins. This continued more or less for five days, upntil she was delivered. Pains began, 6 P.M., August 31. The next day she had pains off and on, mostly in the afternoon. At times they came as often as every five minutes. The next two days, September 2 and 3, the pains continued. At 8 A.M., September 4, Labor Day, she had a chill. The doctor was sent for and he came at once, gave chloroform, put in forceps, and in a half-hour delivered her of an eight and a half-pound dead girl.

I have since called on the doctor, but he was not inclined to give any information, other than that the case was normal, and I must not take notice of what the family said, as they were not to be relied on. Therefore, I must give the statements of a sister of the patient who was present, and who has for the past fourteen years acted as an assistant at a large number of confinements, and is a truthful and competent person.

She said the physician had to pull very hard to get the child, and that the head was delivered with the forceps still applied. About five minutes later the shoulders and body were delivered by pulling on the head. The child had been dead but a short time. The cord was not about the neck or body, and was of normal length. After it was cut and tied, the child was taken into the next room, and immediately after, the placenta was delivered by massage of the abdomen over the uterus, and by pulling on the cord. This came away, but appeared small for so large a child. The doctor put his hand in the vagina as if looking for a part of the placenta, or membranes, and pulled out a round, red, body, around which he swept his finger. When asked what that was, he replied, "the uterus," and at once pushed it back.

The patient had much pain that day and night, and the following day expelled a large blood clot. After this she had scarcely any flow, but complained constantly of bearing-down pains and a feeling as if there was a lump in the vagina. For three days she had no movement; was then given citrate of magnesia, and the bowels moved several times. For three days again she had no movement, and was ordered three castor-oil pills by the doctor. While straining at stool on a pail, September 11, one week after the confinement, the uterus prolapsed inverted between the legs. The doctor was sent for twice, but could not be found, so I was sent for. Some bleeding had taken place, but it had stopped at the time of my arrival. By squeezing the uterus with both hands and making pressure, I was able with considerable difficulty to push it, still inverted, up into the vagina. Having relieved the patient's distress, I left, giving the family instructions to tell the doctor the patient's condition.

On September 17, four days after the patient had been discharged by her physician, I was called on account of burning on urination, constipation, and bearing-down sensations. On examination, I found the uterus still inverted in the vagina. Asking if her physician had done anything for her, she said no; he did not examine her and said it was nothing, also that it would have been a good joke on me if she had with her two fingers pushed the uterus up before I arrived. I told the patient her exact condition, and proposed to try and reduce the uterus under ether. This was agreed to, and on September 20, sixteen days after the confinement, at which time undoubtedly the uterus became inverted, the patient was given ether. After giving a hot bichloride (1-4000) douche, with the patient in the dorsal position, I introduced my right hand into the vagina and squeezed the uterus, making upward pressure. In the meantime the left hand, making pressure on the abdomen over the symphysis, felt the absence of the uterus, and the presence of a fleshy ring about two and a half inches in diameter, with a depression in the middle. Making no apparent progress, and my hand being cramped, I removed it, and a second time introduced it, grasping the uterus and trying with my fingers to push up the side of the uterus nearest the cervix. Again I was compelled to remove my hand on account of the severe pressure of the vaginal walls. After a moment's rest, I placed my right hand on the abdomen and introduced my left hand in the vagina, grasping the uterus and pressing up with the fingers along its side. Rather suddenly it yielded and slid in place. Following with my hand upward, I came to the fundus of the uterus which was still projecting slightly into its cavity. Pushing this in place, I withdrew my hand and gave a very hot bichloride douche, when the uterus contracted and remained in place. As soon as the patient came out of the anesthetic, a dram of the fluid extract of ergot was given, and she was ordered five grains of quinine sulphate every four hours to keep up contraction. The replacing of the uterus did not take more than ten minutes.

The patient was kept in bed ten days. At no time did her temperature rise above 99°. Two weeks from the time of the operation the patient was in my office feeling perfectly well. The uterus was in good position. A deep tear in the cervix, into the left fornix of the vagina, without doubt contributed to the inversion, and to the ease of its reduction.

February 21, 1906, the patient was in my office for ear treatment. An examination of the uterus showed it in proper position and she said that she had had no uterine troubles from the day it had been replaced to the present time.

78 Irving Place.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, May 19, 1906.

THE GENEVA CONVENTION.

DURING the more than forty years that have elapsed since the first Geneva convention was held, largely, we are glad to remember, through the agency of a physician, Dr. Dunant, the beneficent operation of this international compact has accomplished inestimable good in alleviating the sufferings and dangers of the unfortunate common soldiers who form the helpless pawns in the game played by the diplomats. Well intended as were the provisions of the agreements ratified at the first convention, and carefully as they were remodeled and amended at the second, held four years later, in 1868, it appears that they are either not altogether adequate or are not explicit enough in form to eliminate all possibility of misapprehension. While there is no doubt that all of the powers that have signified their acquiescence in the Geneva agreements have intended to carry out the spirit as well as the letter of the law, misunderstandings and mutual accusations have nevertheless been not infrequent in most of the wars that have occurred since then.

The necessity for a revision, at least in some points, of the original understanding was emphasized at The Hague peace conference in 1899, and the Swiss government, both in 1903 and in 1904, extended invitations to the powers to take part in a conference for the purpose of readjustment. The first attempt failed through lack of interest, apparently, and the second was also unsuccessful, owing to the outbreak of hostilities between Russia and Japan. Switzerland has again issued an appeal to the nations to send representatives to consider the matter, in June of this year. One of the subjects suggested for consideration at this meeting is the adoption of measures intended to protect the wounded from robbery and maltreatment. A radical change is to be suggested in regard to the final disposition of the wounded, who on recovery are not, as formerly, to be sent home on parole but are to be held as prisoners of war. Soldiers are all to be provided with an adequate means of identification, which is always to be noted before burial, and the combatants are to furnish each other with lists of all the dead, wounded, and prisoners, as soon as possible after each engagement. The regulations regarding the members of the hospital corps are to be made more precise in their provisions, as also the directions concerning the ownership of hospital supplies, etc. The question of penalties for violation of the rules will come up, and the advisability of substituting for the conventional cross some other symbol, such as the crescent, for example, for the non-Christian nations, will also be discussed.

It is very much to be hoped that this effort of the Swiss government will meet with the cooperation it deserves, and that the success of the conference will be assured by a full attendance of the powers. The practicability of injecting this modicum of humanity into the anachronism of war has already been sufficiently well demonstrated to make it desirable to extend the field of mutual forbearance much further, and there is little doubt that if the conference is held it will be found feasible to introduce restrictions which originally would have been out of the question.

THE FEEDING OF POOR SCHOOL CHILDREN.

THE question as to the advisability, or rather as to the necessity, of providing free meals for those children attending the public elementary schools of England, whose parents are unable to procure them food, has been a subject of discussion now for some considerable time. The problem of physical, and to a lesser extent mental, degeneration which is threatening the inhabitants of the large cities of Great Britain is arousing widespread alarm, and it is fully recognized that the evil must be met, and steps to this end must be taken promptly. The proper nutrition of young children is, as a matter of course, intimately bound up with the question of degeneration; indeed it is, perhaps, the most important part of the entire subject. Underfed children cannot develop as they should develop, and will grow up deficient mentally and physically, and thus the race cannot but deteriorate rapidly. The British Parliament, which is now sitting, as might have been expected from its composition, is taking an active interest in all that concerns the poor, and consequently the feeding of poor school children has been brought into prominence in the House of Commons, and has been freely debated. On March 2 the Education (Provision of Meals) Bill passed its second reading and was referred to a select committee. This signifies that a measure will probably be enacted authorizing the supplying of meals to young children attending primary schools whose parents cannot afford to provide suitable food.

The whole matter was discussed at great length, many opposing the scheme for a variety of reasons. Some of those adverse to the plan pointed out that to make ratepayers pay for the meals of the children of their less fortunate brethren would be, in a very large number of cases, flagrantly abused. For instance, parents who are addicted to drink would hail the passage of the measure with delight, as it would apparently absolve them from parental responsibility, so far as feeding their children was concerned, and leave them with more money to expend on alcohol. However, it is hoped and expected that this would not be the case, as the intention of the framers of the bill would seem to be to feed the children and to pursue the parents. Whether it would be possible to carry out this intention effectively is altogether another matter.

After all, the main point, and the only one that really concerns a medical paper, is that young children who are compelled by law to attend school, in

the interests of public health should be properly nourished. A well-known English lady speaker made the apt remark a short time ago that "it would be better that children should not attend school at all, be well fed and grow up barbarians than that, ill-nourished, they should attend school and become anemic, puny, and weak sighted individuals." It may be taken for granted that ere long the law in England will be that the young school children whose parents are poverty stricken will be fed at the public expense. The method adopted will be, perhaps, in imitation of the Parisian system, as the new Minister for Education appears to be in favor of that mode of procedure. That the difficulties in the way of a successful consummation of the object in view will be very great goes without saying, but the situation is such that energetic action is urgently called for. Even if the experiment fails at first, something will have been learned, and when it is a question affecting the well-being of an entire country, no obstacles must be allowed to block the path. The progress of the movement in England to improve the race by insisting that the coming generation is given a fair fighting chance in the battle of life will be watched with interest by all classes in this country, and especially by members of the medical profession. The question of feeding poor school children has not as yet become pressing in America as a whole. There are, however, cities, among them New York, in which such a scheme has been suggested. With the continued influx of poor town dwellers into the United States it would seem that there might soon be need, at any rate in New York and certain other of the larger cities, of following the lead of England.

UNCURED GONORRHEA.

It is said that gonorrhea is the most widespread of all contagious diseases, with possibly the single exception of measles. Specialists all over the world and for centuries past have sought for a remedy which would surely cure gonorrhea, but up to the present without definite results. Whether it is ever radically cured has been discussed pro and con by those whose knowledge of the disease, acquired during years of experience in treating thousands of cases, gives their opinion great weight, but the question is not yet settled. Until recent years syphilis was considered the social scourge, while gonorrhea was thought to be of minor consequence. To-day the consensus of opinion is that the dangers from gonorrhea are of vastly greater moment than those from syphilis. If we are to believe reports, more than one-half of the population of European cities is affected with gonorrhea. This statement is appalling. Of the American army in the Philippine Islands, one-sixth of those treated in the hospitals were treated for gonorrhea; most of these returned to the United States, many uncured. One in 28 of the patients treated in a New York dispensary presents a case of venereal disease, there being four times as many cases of gonorrhea as of syphilis.

It is a matter of common belief that a large percentage of those infected with gonorrhea are not properly treated, and consequently remain uncured. The average physician does not know how to treat gonorrhea properly, and, moreover, many patients seek treatment from the druggist, who is necessarily incompetent to treat any, and more particularly this diseased condition. What may follow? Ophthalmia neonatorum; self-infection of the eyes; chronic gleet; stricture; sterility, 42 per cent of all affected becoming sterile according to various reports: gonorrheal rheumatism; kidney diseases; diseased prostate or bladder; gonorrheal endocarditis; peritonitis; septicemia; etc. The gonococci may remain quiescent for months or years, only to reappear in consequence of or following disease, intemperance, or unknown causes. Wilson reports a case in which a patient infected his own eye six years after he considered himself cured, no evidence of the disease having manifested itself during that time. In the woman, we may have infection of the pelvic organs, leading to the necessity for operative procedures. Price of Philadelphia declares that 95 per cent. of abdominal operations in women are the result of gonorrheal infection, while others declare that 80 per cent. of the deaths resulting from ovarian or uterine disease are chargeable to conditions due to gonorrhea.

How can we hope to avoid these conditions and results? Since we know that the gonococcus of Neisser is the sole cause of specific urethritis, it follows that the destruction of this germ should be the main object of treatment, and this is to be accomplished with as little injury to the tissues involved as possible. Germicides are used until repeated microscopical examinations determine the absence of the gonococcus—and this can be determined only by the microscope. To begin treatment with an astringent is to invite the multiplication of the gonococci and an invasion of the deeper-seated tissues, because of their protection in the folds of the mucous membrane, where astringents, which are seldom germicides, cannot reach them. After it has been definitely determined that the germ has disappeared, then astringents should be used, to close the crypts and stop the discharge. With all this accomplished, one is not yet justified in declaring the case cured, for the gonococcus may have invaded the prostate gland or the bladder. Prostatic massage, followed by a microscopical examination of the prostatic discharge, should be made several times after the urethral discharge has entirely ceased, to determine the absence of the germ, and the patient should be kept under observation for several months before he is finally discharged. Just so long as cases of gonorrhea are improperly treated will uncured gonorrhea prevail, and not only may the subject's wellbeing and life be endangered, but he or she may (given the opportunity) transmit the disease to others. This fact is one that should be impressed upon the minds of our patients and of the laity in general; it should be made plain that to stop a discharge is not to cure gonorrhea.

SOME STATISTICS OF SUICIDE.

An interesting study of this subject, based on official records on file in the Institute of Medical Jurisprudence of the University of Vienna, has been made by Pilez, who investigated 1,671 cases (*Jahrbücher für Psychiatrie und Neurologie*, vol. 26, Nos. 2, 3). Of this number there were about three times as many males as females, and their ages varied from

9 to 81. The prevalence of the male sex in these statistics is quite remarkable, although we also find this disproportion in other statistics. In both sexes suicide was more apt to be attempted during the period from 21 to 30 years of age than during any other time, and the maximum number of cases occurred during the month of May. The manner in which death was sought varied with the sexes. Thus poison was resorted to by about 20 per cent. of the men and by 55 per cent. of the women, and the bullet by over 25 per cent. of the former and only about 1 per cent. of the latter. About 20 per cent. of the women were pregnant, and in 22 per cent. affections of the sexual organs could be demonstrated. As regards the relations between suicide and mental disturbances, it was impossible to draw any definite conclusions. Only 42 men and 35 women were known to be mentally unsound, but an alcoholic history was present in 45 men and 7 women. This would apparently indicate that most of these suicides were sane in the ordinary sense of the term, and that the mental derangement which permitted the act could, if present, have been only a temporary one. One of the noteworthy features of this, as well as of other statistics of a similar character, is the age at which the greater number of these suicides occur. One would naturally suppose that the mind could overcome a suicidal tendency during the third decade of life much more readily than during the declining years. Or is it that the element of courage —designated, however, as cowardice by some—enters as a possible factor in the matter during this time?

The State of the Blood During Bier's Treatment.

The method of physical therapy to which the name of this well-known surgeon is attached has excited a great deal of interest, particularly as regards its mode of action. We have been favored during the last few years with numerous attempts to formulate some theoretical explanation of this method. When it was found that no factor could be demonstrated in the blood serum, E. Stahr, among others, turned his attention to the formed elements of the blood. He made a large number of blood examinations in ten cases in which the method was being used, his results being reported in the *Wiener klinische Wochenschrift*, No. 9, 1906. The number of the erythrocytes and the hemoglobin content remained entirely unchanged, or varied within very small limits. The leucocytes, in those cases in which the bandage was applied for a considerable period every day, showed a marked increase in number, which increase continued up to the third or fourth day of the treatment. This increase affected the lymphocytes, while the neutrophiles showed a decrease. In some of the cases in which the bandage was applied two hours every day, the decrease in the number of leucocytes was noted after the compression had been made, but the leucocytosis in the diseased extremity was always greater than in the healthy parts, so that we may say that localized leucocytosis occurred in the part under treatment. Stahr accounts for this leucocytosis by assuming that the blood current was slowed, or that there was an increased chemotaxis or an increased activity in the formation of the blood. This local leucocytosis probably accounts for the increased phagocytosis, and this, of course, is of importance in the curative process.

A False Note.

Among the sufferers from the San Francisco earthquake and fire was the *California State Journal of Medicine*, whose plant, we understood, was completely consumed. The May number has just appeared, a four-page folder only, showing admirable evidence of the determination of the management to keep its files complete. It is unfortunate, however, that this praiseworthy evidence of spirit is shadowed in one or two spots by a show of bitterness which it is not pleasant to see on such an occasion. We can hardly believe with this rancorous editor that "many participators in the nostrum business," whoever they might have been, could have felt anything but sympathy for the victims of the San Francisco disaster, nor do we believe there are many men so constituted as to have "rejoiced to think that we [the *Journal*] were wiped out"; or many, except those to whom such sensations are natural, who would have imagined such a feeling possible.

News of the Week.

Opening of the Rockefeller Institute.—The new building of the Rockefeller Institute for Medical Research was formally opened on May 11. Several hundred people were present and addresses were delivered by President Charles William Eliot of Harvard University, President Nicholas Murray Butler of Columbia University, Dr. William Henry Welch and Dr. L. E. Holt. Mr. Rockefeller was not present, but was represented by his son, John D. Rockefeller, Jr. The building stands on a plot which covers twenty-six and one-half city lots at Sixty-sixth street and Avenue A, and is five stories in height. The cost of the structure was about $350,000, and the effort was made to have it the most perfectly equipped laboratory building in existence.

The American Academy of Medicine.—An elaborate program has been prepared for the thirty-first annual meeting of this organization, which will be held in the banquet hall of the "Brunswick," Boston, on June 2 and June 4, 1906. At the executive session on June 2 action will be taken on several proposed amendments to the constitution of which one of the most important, regarding eligibility for membership, provides that "in lieu of the baccalaureate degree from a recognized institution, conditions of eligibility may be satisfied as follows: If the candidate is a medical graduate of at least twenty years standing, and has during that time made notable and scholarly contributions to medical science, and has been active along lines in harmony with the ideals of the Academy, he may be elected to fellowship in the Academy; provided that not more than ten fellows shall be elected under this provision at any one meeting." The secretary is Dr. Chas. McIntire of Easton, Pa., and the committee on arrangements consists of Dr. Augustus P. Clarke and Dr. Albert H. Tuttle.

The New Bellevue Hospital.—Progress on the new Bellevue Hospital building is being delayed through legal complications which have arisen in regard to the question of whether or not the State Board of Charities has jurisdiction in the matter and whether its assent to the plans would be required before the work could be begun. Dr. J. W. Brannan, President of the Board of Trustees of Bellevue and allied hospitals, maintains that Bellevue is independent of the Board's authority, while the members of the Board take the opposite view. In order to secure a settlement Attorney-

General Meyer has instituted mandamus proceedings against Dr. Brannan which are now pending.

For Our Medical Brethren in California.—The Medical Relief Committee appointed by the New York Academy of Medicine and the Medical Societies of the Counties of New York and Richmond has sent out a second appeal for funds for the relief of physicians in California who have suffered in the recent disaster. It is hoped that those who have not already responded will do so at once by sending their subscriptions to the Treasurer of the Committee, Dr. C. H. Richardson, 336 Lexington Avenue, New York.

"American Practice of Surgery" is the title of a new treatise in eight volumes, announcement of the early publication of which is made by William Wood & Company. The work is edited by Drs. Joseph D. Bryant and Albert H. Buck of this city, and the contributors are all representative surgeons of this country and Canada.

"The Paris Medical Journal."—A new monthly with this title has been started in Paris under the joint editorship of Drs. A. A. Warden and Edmund L. Gros. Its object is to provide English-speaking physicians with a monthly résumé of the work of French physicians and surgeons. The editorial committee includes some of the most prominent medical lights of Paris and the first number of the journal contains much interesting material.

Christian Science in England.—At the coroner's inquest a verdict of manslaughter was rendered in London against a Christian Science healer who was charged with having caused the death of Major John Nicholas Whyte. When the prisoner was searched there were found in his pockets a hypodermic syringe and tablets of morphine and strychnine. When pressed for an explanation of their presence he said he had been using them himself for indigestion.

Council on Medical Education.—The second annual conference of the Council on Medical Education of the American Medical Association was held at the Auditorium Hotel, Chicago, May 12. Dr. Arthur Dean Bevan of Chicago, Chairman of the Council, presided. The Chairman delivered a brief address, after which the Secretary presented a report of the work done in the past year. The subjects of the "Relation of the State Medical Examining Boards to Medical Education," and the "Relation of the State Medical Society to Medical Education," were discussed. Likewise preliminary education for medical students; also, "Shall advanced standing be allowed graduates of colleges of liberal arts?" The subject of what constitutes a proper medical curriculum was also discussed. Representatives from the various States, State medical societies, and delegates were in attendance.

Milk Licenses.—The Appellate Division of the Supreme Court has decided that the Board of Health has the power at any time on sufficient grounds to revoke a permit issued for the sale of milk. The question came up when a certain milk company sued the city to recover $30,000 damages for destroying its business by revoking its licenses. The Board of Health contention was that the company's dairies were found to be in a filthy condition and its milk adulterated and unwholesome. The court unanimously decided that licenses are revokable at the discretion of the Board.

Civil Service Examinations.—Examinations for the medical staff of the Illinois Charitable Eye and Ear Infirmary, Chicago, are to be held the latter part of this month by the Illinois Civil Service Commission. There are now the following vacancies: One assistant ear surgeon, one assistant eye surgeon, one assistant pathologist, three internes. Examinations for attendants in the hospitals for the insane will be held by the Illinois Civil Service Commission the latter part of this month in various parts of the State.

The Chicago Home for Destitute Crippled Children, of which Dr. John Ridlon is surgeon in charge, has outgrown its original quarters and a new building, the cost of which was about $40,000, has been completed. Twenty-five thousand dollars of this amount was donated by Mrs. R. H. McElwee for the erection of the out-patient department, which is to be a memorial to her daughter. At a recent meeting of the Board of Trustees, Dr. F. W. Belknap was appointed consulting pediatrician; Dr. Gilbert Bailey, assistant orthopedic surgeon, and Dr. C. G. Buford, attending surgeon. A resolution was adopted to the effect that ruptured children are to be considered crippled children, and that as soon as proper facilities have been added to the home for handling such cases, those needing operation will be admitted as house patients. An outpatient department for ruptured children was opened May 1 under the direction of Dr. Buford. A dispensary for orthopedic patients is open on Monday, Wednesday and Friday from 1 to 4 P.M., and for hernia cases on Tuesday and Friday from 9 to 10 A.M. The object of the latter department is to supply trusses to destitute ruptured children, and to educate parents in the proper application and maintenance of the trusses. It is estimated that under proper management about 75 per cent. of the patients under four years of age will recover from rupture without operation.

Resignation of Dr. H. P. Bowditch.—Dr. Henry Pickering Bowditch, George Higginson Professor of Physiology in the Harvard Medical School, who has been in the faculty of that institution for thirty-five years, has handed in his resignation, to take effect at the close of the present academic year.

New Tobacco Tax in Germany.—The Reichstag on May 7 adopted a new tax of $200 per metric hundredweight on fine-cut and cigarette tobacco. It also imposed a duty of $1.25 per 1,000 on cigarettes.

Mme. Curie has been appointed to the chair in the University of Paris occupied by her late husband with whom she was associated in the discovery of radium. It is stated that she is the first woman to occupy a position of this sort.

Japan's Halt and Blind.—According to the Nagasaki Press Her Majesty the Empress has presented 984 artificial eyes and 1,797 limbs to soldiers maimed during the recent war.

For a New Rochelle Hospital.—Mr. C. O. Iselin of New Rochelle has promised that city $40,000 for a new hospital, provided that the citizens will raise $60,000 more so that a $100,000 building can be erected. The gift is to be a memorial to the late Adrian Iselin.

The Code of Medical Ethics has been declared by the Medical Society of the State of New York to be merely a suggestive and advisory guide, and it therefore remains, as during the past quarter of a century, of no binding force in this State. This conclusion was reached by the substantial majority of 3,110, there being 3,307 affirmative to 197 negative

votes. Of the 6,352 members of the Society to whom the referendum ballots were sent, more than 2,800 refrained from voting.

American Climatological Association.—At the twenty-third annual meeting of this association, held in Atlantic City, May 12 to 14, the following officers were elected for the ensuing year: *President,* Dr. Thomas Darlington of New York; *Vice-Presidents,* Dr. Frank Fremont Smith of Washington and Dr. C. L. Minor of Asheville; *Secretary and Treasurer,* Dr. Guy Hinsdale of Hot Springs, Va.; *Representatives on the Executive Committee of the VII. Congress of American Physicians and Surgeons,* Dr. F. J. Knight of Boston, and Dr. R. G. Curtin, alternate. Dr. E. L. Trudeau, of Saranac Lake, and Dr. Leonard Weber, of New York, were elected Honorary Members. The next meeting will be held in Washington, D. C., in May, 1907.

Middlesex East District (Mass.) Medical Society.—On May 9 this society elected the following officers at Stoneham: *President,* Dr. Harrison G. Blake of Woburn; *Vice-President,* Dr. C. E. W. Harlow of Melrose; *Secretary,* Dr. H. A. Gale of Winchester; *Treasurer,* Dr. Charles Dutton of Wakefield.

Illinois State Medical Society.—The fifty-sixth annual meeting of this society will be held at Springfield on May 15 to 17. In addition to the scientific program a number of entertainments have been arranged for, including a reception held at the executive mansion by Governor and Mrs. Deneen to which all members of the society and the ladies of their families are invited.

Berkshire District (Mass.) Medical Society.—At the meeting of the society, recently held at Pittsfield, officers were elected as follows: *President,* Dr. Alfreda Withington of Pittsfield; *Vice-President,* Dr. G. L. Rice of North Adams; *Secretary,* Dr. I. S. F. Dodd of Pittsfield; *Treasurer,* Dr. W. L. Paddock of Pittsfield.

Windham County (Conn.) Medical Association.—The 113th annual meeting of this society was held at Putnam on May 3, and the following officers were elected: *President,* Dr. Robert C. White, Willimantic; *Vice-President,* Dr. C. J. LeClair, Danielson; *Secretary and Treasurer,* Dr. James L. Gardner, Central Village.

Franklin District (Mass.) Medical Society.—The following were elected as officers at the meeting of this society held at Greenfield on May 8: *President,* Dr. C. C. Messer of Turners Falls; *Vice-President,* Dr. B. P. Croft of Greenfield; *Secretary and Treasurer,* Dr. C. F. Canedy of Greenfield.

Norfolk District (Mass.) Medical Society.—Officers for the ensuing year were elected as follows at the meeting of this society held on May 7 at Dedham: *President,* Dr. Samuel Crowell of Dorchester; *Vice-President,* Dr. Arthur P. Perry of Jamaica Plains; *Secretary,* Dr. Jas. C. D. Pigeon of Roxbury; *Treasurer,* Dr. Edward G. Morse of Roxbury.

American Proctologic Society.—This society will hold its eighth annual meeting at the Hotel Vendome in Boston, Mass., on June 5 and 6. The program consists of eighteen titles comprising topics of much interest. The secretary is Dr. A. B. Cooke of Nashville, Tenn.

The New Jersey State Homeopathic Medical Society held its annual meeting in the Assembly Chambers at the State Capital, Trenton, N. J., on May 2. The following officers were elected for the ensuing year: *President,* Dr. Edwin De Baun of Passaic; *Vice-Presidents,* Drs. Ella P. Uppam of Asbury Park, and C. F. Adams of Hackensack; *Recording Secretary,* Dr. Carl H. Winch, of Newark; *Corresponding Secretary,* Dr. Alfred Drury of Paterson; *Treasurer,* Dr. R. F. Rabe of Weehawken.

The American Association of Physio-Medical Physicians and Surgeons will hold its annual convention in Chicago, May 22 to 24, at the Sherman House.

American Gastroenterological Association.—The ninth annual meeting of this society will be held in Boston, Mass., on Monday and Tuesday, June 4 and 5. The Monday meeting will take place at Sprague Hall, Boston Medical Library, and the Tuesday meeting at Harvard Medical School.

The Essex South (Mass.) District Medical Society at its meeting in Salem on May 8 elected the following officers for the ensuing year: *President,* Dr. H. W. Mitchell, Hathorne; *Vice-President,* Dr. P. C. Proctor, Gloucester; *Secretary,* Dr. G. K. Blair, Salem; *Treasurer,* Dr. G. Z. Godell, Salem.

Nebraska State Medical Association.—At the annual meeting of this society held in Lincoln on May 3 officers were elected as follows: *President,* Dr. J. L. Greene of Lincoln; *Vice-Presidents,* Dr. C. F. Burchard of Falls City and Dr. F. A. Long of Madison; *Secretary,* Dr. A. D. Wilson of Lincoln; *Treasurer,* Dr. A. S. Van Mansfelde of Ashland.

Obituary Notes.—Dr. Eliza J. P. Fountain of Newbury, N. Y., died on May 11, in this city after an illness of five months. She was sixty-nine years old and was one of the first graduates from the Women's Medical College in this city.

Dr. Philander Collard of Ossining, N. Y., died on May 7, at the age of sixty-one years. He was an ex-president of the Westchester County Medical Society, and a member of the staff of the Ossining Hospital.

Dr. Leroy D. McWayne of Hoosick Falls, N. Y., died on May 10, of heart disease. He began practice in 1879 and of late years had devoted himself to diseases of the throat.

Dr. Lawson A. Long of Holyoke, Mass., died on May 6, at the age of seventy-nine years. He was the son of Dr. Lawson Long, one of the earliest physicians to settle in Holyoke, and had been closely associated with the development of the city. He had practised for some years in Buffalo and New York City, but ten years ago returned to Holyoke. Of late years increasing deafness had forced him to give up active work. It is said that he was instrumental in foiling one of the earlier plots to assassinate President Lincoln.

Dr. James Osterman of Salt Lake City, Utah, died on May 2, at the age of thirty-three years. He was born at Granite, Utah, and was graduated two years ago from the Baltimore Medical College.

Dr. Esther H. Hawks of Lynn, Mass., died on May 6, at the age of seventy-two years. She was born in Hooksett, N. H., and was graduated from the New England Female Medical College. She had practised in connection with her husband, Dr. John N. Hawks, for many years, and she served through the Civil War as a surgeon together with him.

Dr. Louisa F. Parker of South Weymouth, Mass., died on May 9, at the age of ninety-three years. She was one of the first women in New England to study medicine, and was graduated from

the New England Female Medical College in Boston in 1861. She practised in Boston until 1897, when she retired to South Weymouth.

Dr. Edgar L. Draper of Holyoke, Mass., died on May 4, at the age of sixty-four years. He was a graduate of Amherst College in the class of 1864, and received his medical degree from the Harvard Medical School three years later. During the Civil War he was a surgeon in the navy.

Dr. F. E. Garlichs of St. Joseph, Mo., died on May 4, at the age of sixty-one years. After serving through the Civil War he took up the study of medicine and had practised in Buchanan County ever since.

Dr. L. B. Newton of North Bennington, Vt., died on May 2, at the age of sixty-seven years. He was graduated from Castleton Medical College in 1850, and had practised in North Bennington ever since. He had served as secretary of the Bennington County Medical Society almost uninterruptedly since its organization in 1873.

Dr. Onan B. Gross died at Camden, N. J., on May 9. He was graduated from the medical department of the University of Pennsylvania in the class of 1878.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

PARLIAMENTARY VACCINATION ACTS — "RAGGING" CASE — ENDEMIC GOITER—INQUESTS—GUY'S HOSPITAL—OBITUARY.

London, April 27, 1906.

The threatened Parliamentary demonstration of the anti-vaccinationists came off on Wednesday, though without any immediate effect, except to illustrate still further the fears of the Government lest it should lose a few votes. It is curious that while boasting of being the strongest government of modern times it should display such hysterical timidity in the face of any faction among its followers. The anti-vacs are not numerous, but are noisy, so the Government tried to conciliate them and put them off with half-promises. The resolution brought forward by Mr. Lipton was that "in the opinion of this House vaccination ought no longer to be obligatory on those who regard it as useless or dangerous."

Mr. Robertson seconded the resolution and indulged in a tirade against magistrates and doctors. A few of the former, he suggested, should be sent to prison for not treating the "conscientious objectors" differently. As to the medical profession, it was always discovering that it was in error. The theory of the Jenner Society was a scientific importune. Hundreds had been killed by vaccination. Coercion was monstrous.

Mr. Pickersgill declared that the usefulness of vaccination had never been shown, and on every principle of criminal jurisprudence the grounds for compulsion had been cut away.

These three speakers are all members of the Labor party, to which the Government has promised so much. Sir William Collins, who professes to be of the party, remarked that as a member of the profession he did not think it necessary and compulsion made it unpopular.

Mr. Burns, as President of the Local Government Board, indicated the intention of the ministry. As "one who had not been vaccinated" he reminded the House that the Act of 1898 was not compulsory. Conscientious objectors were exempt, but lack of uniformity, capriciousness in administration, and sometimes the behavior of magistrates on the bench produced injustice, and it would be the duty of his department to prevent such inequalities. The House Secretary was about to issue a circular. The Local Government Board intended to take the whole question into consideration with a view to a reduction of cost, amendment of procedure for obtaining exemption, postponing vaccination to a later age, and in general inquiring into the working of the Acts. Upon these assurances the motion was withdrawn. Of course, no legislation can take place this session, at the close of which the Acts will expire unless they are included in the usual continuance list. There are those who think that a few more threats from the Labor party will terrify the Government into letting them lapse instead of repealing them by installments.

In the "ragging" case the Army Council has promptly pronounced sentence. The Colonel is put on half pay and the other officers concerned deprived of certain periods of seniority. "An expression of the displeasure" of the council is ordered to be conveyed to the Surgeon-Major. This last decision seems to be approved by the civil profession, many of whom are disposed to regard the reproof as too mild. It is well, however, that the army authorities should indicate thus their support of professional etiquette.

Endemic goiter, as observed in the Chitval and Gilgit valleys by Captain R. McCarrison, I.M.S., was the subject of a paper read for him by the secretary at the last meeting of the Medico-Chirurgical Society. The Chitval villages derived their water supply from the melting of the snows on the surrounding mountains. There were no wells, and, owing to the slope of the ground and the nature of the soil, the water could not stagnate. Its total solids and total hardness seemed to have no influence on the production of goiter. The ingredients differed a good deal in different parts. Goiter was common in children of all ages; even infants at the breast were not exempt. In one instance 18 per cent. of natives from nongoiterous regions developed the disease after residing four months in one of these villages. In another instance two out of ten young men from the plains became goiterous after two and a half months' residence. Symmetrical goiter diminished in size, except in old cases, on leaving the locality where it was acquired, and increased again on returning. In Gilgit and Nagar the geographical, physical and social conditions were the same, and the water came from a single source, flowing in open channels to the villages. At the source the percentage of goiter is 11.8, which increases in the villages along its banks until at the last it is 45.6 per cent. Near its source the water contained a quantity of diatoms, eucyonema and navicula being most common. At the terminus diatoms were fewer, but suspended matter increased. Up to six years ago Nagar had practically no communication with goiterous districts, but five years ago settlers from such brought the disease, which is now spreading. Captain McCarrison, noting the proportionate increase of the goiter in the downward passage of the water, says some poisonous element representing the differences at the several distances must be added; it must be in suspension, and either inorganic or microbial. The latter would explain those cases which cannot be accounted for by the former, and he thinks, though water is the chief vehicle of infection, it may not be the only one.

In discussing the paper Mr. J. Berry said the observations agreed with his own and with those of other investigators as to the main facts, such as the prevalence in limestone districts and the conveyance by water. Lime, magnesium, and iron had all been blamed, but none gave a perfectly satisfactory explanation. He believed the poison was in suspension, not solution, and that explained the increase in spring, when there was more suspended matter in the streams.

Dr. L. E. Stevenson said rain-water never caused goiter and recent cases soon subsided if only rain-water was drunk. Boiling the water prevented the disease, and filtering lessened the liability. There were also facts supporting the microbic origin of some cases. Captain Hugo, I.M.S., had found goiter in Nepaul affected goats, horses, pigs, also the poor people who got their water from the river or shallow wells. But the rich got water stored in tanks at a distance. In one station he found goiter in the rainy season, when the water was turbid, but it disappeared afterwards. In central India he had only met with two cases, and both had come from the hills.

Dr. Claridge said in West Africa the disease was only met with at Mampou, where there was limestone, and about 10 per cent. of the natives were affected. Mampou was on the trade route, but the other localities on that route were not affected—a fact against the microbe theory. He had never seen goiter where only rain-water was drunk.

A coroner's jury has added to a verdict of death from natural causes a rider to the effect that Guy's Hospital was greatly to blame for not having investigated the case more thoroughly and not having more experienced persons to examine such serious cases. It appears that the patient was taken to the hospital by her husband with a statement from the local doctor that she had a large abscess at the back of the right ear. After waiting some time they were told they could not have a bed that night. The husband went again next morning and was told to bring his wife in the evening. He did so, was kept waiting one and three-quarter hours, and then told the case was not urgent enough to have a bed. He then took her to St. Thomas's Hospital, where an operation was considered necessary without delay, but the patient died during its performance. The Guy's house surgeon considered the case one of enlarged glands. At St. Thomas's it was taken for mastoid disease. The coroner, Mr. Troutbeck, said it was very serious for a woman so ill to be brought to the hospital and not admitted, and surprising for a house surgeon to have the decision whether to admit or not. It was curious, too, that he should have

overridden the opinion of the practitioner who sent the case.

Of course, he had his brother-in-law, Dr. Freyberger, as the inevitable expert pathologist to give evidence, though one would have supposed that St. Thomas's could have supplied the necessary information. Dr. Freyberger said the cause of death was heart failure from acute inflammation of the valves while the patient was suffering from meningitis and suppurating middle-ear disease.

One of the oldest members of the profession in this country, John Scott, F.R.C.S., died on Tuesday night, in his ninety-fifth year. He was a well-known consultant in Harley street for many years and had been vice-president of the Pathological and Obstetrical Societies. He was one of the founders of the Women's Hospital, Soho Square, and surgeon to it, as well as to the Governesses' Home and other institutions. He retired in 1888. His first diploma, L.S.A., 1833, seems a remote date. The next year he took his M.R.C.S., and twenty years later became F.R.C.S. He recorded a case of enucleation of a large uterine fibroid in the *Lancet* of 1873, the last, I think, of his contributions to medical literature.

Dr. George Buchanan, Emeritus Professor of Clinical Surgery in the University of Glasgow, Consulting Surgeon to the Western Infirmary, died on the 19th inst., in his eightieth year. He took his M.A., Glasgow, in 1846, M.D., St. Andrews, 1849, and the latter university conferred on him its Honorary LL.D. in 1889. He served as a civil surgeon in the Crimea and wrote an account of "Camp Life" there. He had served as examiner at St. Andrews' and Durham Universities, as well as at the Glasgow Faculty of Physicians and Surgeons, of which he had also been vice-president (1872). He for some time taught Anatomy and edited the tenth edition of Wilson's manual, but his surgical skill and judgment naturally led to his becoming a clinical teacher of surgery. He was for some time on the staff of the *Glasgow Medical Journal,* to which he contributed, amongst other papers, "Cases of Ovariotomy," 1864-1868. He published in 1880 "Radical Cure of Inguinal Hernia in Children," and in the same year "Talipes Varus." The next year he wrote on the "Storage Battery and Electricity in Surgery." He contributed to the *Edinburgh Medical Journal,* in 1897, an essay on "Anesthesia: Jubilee."

OUR BERLIN LETTER.

(From Our Special Correspondent.)

OPENING OF THE KAISERIN FRIEDERICH HAUS—EXPOSITION ON INFANT HYGIENE—ANNIVERSARY OF THE SOCIETY FOR INTERNAL MEDICINE—MEMORIAL TO NITZE.

BERLIN, April 5, 1906.

THE Emperor rarely attends medical ceremonies, but he was present at the inauguration of the Kaiserin Friederich Haus, dedicated to the memory of his mother. This building is intended to furnish a center for postgraduate instruction, and through its architectural beauty and the extremely practical nature of its equipment deserves to be made the subject of a longer description, which I hope to give you in a later letter. Over two hundred military and civil medical functionaries of the highest rank were assembled in the great auditorium when the Emperor and the Empress, Prince Henry, and the court entered. Addresses were delivered by three speakers. Von Bergmann reviewed briefly the history of postgraduate medical work and eulogized the growth of medical science which had largely been fostered by technical methods. For this reason he said there was to be provided in the building a department for the exhibition of new clinical methods and technical apparatus. In closing he paid tribute to the part played by the house of Hohenzollern in the development of medical science. Löbker, the president of the Medical Chamber, dwelt on the difficult social position of the physician. Schjerning, the surgeon-general of the army, pointed out the interest that the royal house had always manifested in medical work. The Emperor then rose without announcement and spoke with evident emotion, saying: "I thank you for this beautiful ceremony and I thank you that we are able to unite to-day in honoring the memory of my mother. All of us, her children, her friends, and the whole of Germany still ask ourselves the question why that wonderful and illustrious woman should have been taken from us at so early an age and by so painful a malady. I feel that her own sufferings inspired her to plan for diminishing the pain of others, and the consequence of this thought was the establishing of this beautiful building. And so the Providence which always determines the results of the physician's efforts regardless of his science is to be directed by the plans of my departed mother, and I hope that her name will be a blessed one for centuries. If that end be attained I shall be grateful to all who have helped to build this house."

The Empress in March opened a small but very instructive exhibition devoted to the subject of infant feeding and hygiene. In the well-arranged catalogue Heubner answers the question, "What is the purpose of the exhibition?" by saying that it is intended for the instruction of mothers and nurses, to show to physicians the value of institutional treatment, and to teach the hygienists and administration officers what still remains to be done. The exhibition was divided into six departments, of which the first was devoted to statistics. Diagrams and charts were displayed showing the mortality of infants, social classes, etc. The second department concerned the etiology of disease, and in the third and fourth sections exhibits relating to infant feeding were on view, including von Behring's investigations and those of the bacteriologist Flügge. Apparatus and appliances from dairies and children's hospitals were used to illustrate the various processes of sterilizing, cooling, and handling the milk, together with the means employed to detect adulteration. The fifth and sixth sections contained exhibits relating to the general hygiene and care of infants.

On February 19, the twenty-fifth anniversary of the Society for Internal Medicine was celebrated. The first paper was read by von Leyden, who gave a review of the history of the association. The principal paper, by A. Fränkel, was devoted to a consideration of the means of dissemination of tuberculosis from the clinical standpoint. He said that tuberculosis entered the body by three channels, through respiration, through the lymph vessels, and through the blood-vessels. Hematogenous infection through the placenta seemed of importance since Schmorl had found evidences of tuberculosis in nine out of twenty placentas from tuberculous women. Von Behring especially advocated the lymphatic mode of infection and believed that the tubercle bacilli go from the site of infection through the lymphatic channels to the bronchial glands. The speaker himself had seen three cases in adults in which the cervical glands were infected before the lungs. He believed that primary bronchial tuberculosis in adults was an inhalation disease. Evidence that tubercle bacilli may easily be aspirated by the lungs was furnished by the occurrence of pneumokoniosis, and the aspiration of bacilli into the bronchi caused most cases of pulmonary tuberculosis. Three forms of acute pulmonary tuberculosis might be distinguished: one form begins with a hemoptysis, another is peribronchial, and a third type, occurring chiefly in diabetes and pregnancy, leads to very rapid destruction of the lung. The third paper was read by Goldscheider and related to the natural treatment of disease. He contended that all the researches of scientific medicine were meant to discover the natural means of combating disease and to lead the body back to health by natural processes.

On April 1 a memorial meeting in honor of Max Nitze, the inventor of the cystoscope, who died suddenly in March, was held in the beautiful auditorium of the Kaiserin Friederich Haus. Four speakers paid tribute to the merits of the great investigator, who died at a comparatively early age. Von Bergmann referred to Nitze's perseverance, which enabled him to surmount successfully obstacles which seemed almost insuperable. His greatest achievement, the cystoscope, was the result of years of effort, and he did not cease trying to improve the instrument until he finally saw the realization of what he had planned for in the beginning. Professor Posner, one of our ablest speakers, in an admirable paper discussed the advantages accruing to medical science through Nitze's invention. He compared the cystoscope with the laryngoscope and the ophthalmoscope, the inventions of Garcia and Helmholtz, but while these latter were only the inventors and had to relinquish to other men the fame of the practical application of their ideas, Nitze himself was able to develop to the full the capacities of his appliances. Professor Kutner, one of Nitze's old pupils, gave an interesting picture of Nitze's labors, and showed that only through his invention had urology been put in a position to become a separate specialty. Finally, Nitze's qualities as a man were eulogized by his friend, Professor Heymann, who said that Nitze was of a very sympathetic disposition and was always ready to help his friends. He was interested in many subjects outside of medicine, especially in sculpture and architecture. A complete series of Nitze's instruments, showing their development from the beginning to the perfected form, was exhibited, as well as a set of the latest models in which his principles were used.

OVARIAN GRAFTING.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In your issue of May 5 there appears an article by Dr. R. T. Morris concerning "A Case of Heteroplastic Ovarian Grafting," in which both ovaries of Mrs. W. were totally removed by the angiotribe, and at a subsequent operation two new ovarian grafts, taken from Mrs. P., were successfully implanted within the abdominal cavity of Mrs. W., the latter eventually becoming pregnant and giving birth to a healthy child. Two considerations pertaining to the subject suggested themselves: first, the origin of sexual

cells, and second, who was the mother of the child? According to Ernst Haeckel ("The Evolution of Man," edition of 1905) both the ovaries and testicles are evolved from the sexual plates, or layer of cells situated on the ventral celoma. The celom pouches arise from behind and subdivide into a posterior and an anterior section. The anterior sections on each half of the body form the two gonocels, or ventral celomas, which by union in the median anterior line, and the absorption of the dividing partition finally develop into the peritoneal cavity. A cluster of cells, or cell plates, on the internal layer of the ventral celoma, on each side, develop into the sexual glands. So that in simple language it may be said that the sexual cells of the ovary are but the specialized cells covering the peritoneal coat of the broad ligament. In lower forms of life these "peritoneal" cells, or primitive sex cells, are given off directly from the primitive peritoneum (or wall of the celoma) long before such a complicated thing as an ovary has been evolved, and these "peritoneal" sex cells are discharged through the common ejection opening or cloaca and, if fertilized, proceed to develop just as the highly evolved ovum does. Now it has happened that certain women, whose ovaries have been removed, have subsequently conceived and borne children. The usual explanation is that a thorough and complete excision of the ovaries was not actually made, and that some minute portion of the ovary had been left, possibly on the stump at the seat of ligation. May it not be that sometimes a compensating proliferation of cells of the peritoneal covering of the broad ligament may have supervened, due to operative irritation, so that one of the primitive peritoneal sex cells, capable of fertilization, might have passed into the Fallopian tube and there matured into an ovum? When one makes a study of comparative embryology, and the early evolution of all the bodily organs, this idea of a compensating reversion of sex-cell proliferation does not appear altogether imaginary.

As to the second question, Who is the mother of the child in a case of heteroplastic ovarian grafting? to the writer there seems but one answer. In the case of a fetus we know that it is evolved from the fusion of two cells, a maternal cell (or ovum) and a paternal cell (or ciliated spermatozoon). The heredity of the mother is passed down through the maternal cell, not through the nourishing pabulum. It is the nucleus, or caryoplasm, which has to do with heredity, while the outerplasm or cytoplasm has to do with adaptation and perception. Now in the case of Mrs. W., if this child which she bore subsequently to the implantation in her abdomen of the ovarian graft from Mrs. P. did actually arise from the graft instead of from the peritoneal cell covering of Mrs. W.'s broad ligament, then it was Mrs. P.'s maternal sex cell which developed parasitically in the body of Mrs. W. The child, then, was formed by the fusion of Mrs. P.'s sex cell and Mr. W.'s sex cell in the body of Mrs. W. There is no doubt, perhaps, that the blood and nourishment of Mrs. W.'s organism did modify the ova developed from Mrs. P.'s graft. But the life was in the cell, and when the cell was transplanted it did not forfeit its ancestry, however much it may have adapted itself to its environment in its new hostess. According to the legal aspect of the case, this child, now living, might be considered Mrs. W.'s child, because she gave birth to it; but in this artificial maternity "birth" is far different from "origin." As a matter of fact, the child was adopted in embryo instead of post-delivery. The line of descent, therefore, is through Mrs. P. In connection with this exceptionally interesting subject the pathology of cancer throws some light. The cancer cell is now believed to be the product of the leucocytes. A cancer growth is a morbid and excessive proliferation of cells which under some stimulus have reverted to their presanguinary life. It appears that the blood was evolved from the primitive fluid of the celom cavities, and the leucocytes descended from the cells of the celom walls. Thus is seen how nearly the white blood corpuscles were originally related to the sex cells. If an unduly stimulated leucocyte may revert to its primitive method of excessive proliferation in a foreign soil, thus giving rise to cancerous tissue, it ought not to be beyond the limit of possibility for its near relative, the sex cell of the peritoneal coat of the broad ligament, to develop by a natural evolutionary process into an ovum, under the stimulus following an operative procedure at the site of the ovary. Embryology teaches us that every cell, or sex cell, of the ovary in every fetus came from the lining of the celum wall, what is later the peritoneal coat. How many of the peritoneal cells in the region of ovary, but outside the ovary, may be in fact dormant sex cells we may not know; but that certain of the lining cells of the broad ligament near the implantation of the ovary may be scattered undeveloped sex cells is a possibility. Possibly the rise of dermoid cysts may be accounted for in this way. There may be also some causative factor in this relation between the leucocyte and the sex cell which would explain the sterility following the injection of male blood in a female abdomen.

Edward Cornelius Perry.

Avon, N. Y.

Progress of Medical Science.

Boston Medical and Surgical Journal, May 10, 1906.

The Treatment of Ununited Fractures of the Neck of the Femur by Operation, with Report of a Case.—Farrar Cobb's case was that of a boy of 18 years, whose accident occurred nine weeks before operation, and is fully described by the author, who refers in commendatory terms to the work of Nicolaysen in this line of operative procedure. He presents the following conclusions: (1) Fractures entirely intracapsular are very rare. (2) When they do occur and are unimpacted, the obtaining of union by any form of fixation apparatus is exceedingly doubtful. (3) The operation of nailing the fracture with or without open incision is to be adopted whenever possible. (4) In the young and middle-aged, when no contraindications to operation are present, such as obesity, general debility, marked arteriosclerosis or complicating disease, the method with open incision is more accurate and preferable. (5) In persons of advanced age and those with definite contraindications to surgical interference, the direct method without incision, as practised by Nicolaysen, should be used in all cases if seen sufficiently early. (6) In employing the method of Nicolaysen, a general anesthetic should be given.

A Dietetic Study.—From personal observation of his own dietary, A. L. Benedict analyzes the proteid, carbohydrate, and fat amounts in the diet of a man living in good circumstances. He believes that the only method of making trustworthy observations along this line is actually to weigh the food taken. He says, however, that a very important basis for clinical dietetic study is the ability to gauge by the eye the amount ingested. For this purpose, food must be prepared in homogeneous form; *e.g.* meat must be hashed and thoroughly mixed. Many ingredients, however, of ordinary diet occur in the form of units which do not vary much from an average. For instance, ordinary lumps of sugar average 6 gm.; small round "Jersey" crackers, 5 gm.; standard soda crackers, 23 gm.; a fair sized lamb chop weighs 60 gm. gross.; the round muscle, 20 gm., and other available muscle, 10 gm. An ordinary cut of prime rib roast of beef with the bone removed weighs about 25 gm., and two of these are equivalent to an ordinary serving of almost any meat. Much larger portions are served *à la carte* at first-rate restaurants. Shredded wheat biscuit, the ordinary serving of other cereals, an ordinary slice of bread and the half of a hard roll amount to 30 gm. each. When it is necessary to keep close account of the nutrition of a patient, it is well to reserve for him a loaf of bread, a special sugar bowl, a package of cereal, etc., and to obtain the amount used in a certain period by subtraction.

New York Medical Journal, May 5, 1906.

The Use of Rubber Gloves in Medical Wards.—T. W. Clarke discusses this matter under the threefold heading of the protection of the patient from the physician, the protection of the physician from the patient, and the protection of the patient from his fellow. The physician should wear gloves for infusions, venesections, intravenous injections, paracenteses and lumbar punctures. Any procedure which will tend to lessen the danger of infection under these circumstances is certainly worthy of being followed. As to the protection of the physician, the gloves should be worn during vaginal and rectal examinations. Interference with the tactile sense is so slight as to be disregarded. Moreover, the disagreeable clinging odor which at times no amount of washing will remove is entirely obviated. As to the protection of one patient from another, the use of gloves by nurses when handling stools of infectious diseases is most commendable; the same precaution is applicable in case of outbreaks of vulvo-vaginitis in the children's wards of hospitals. Of course, it has never been found that a nurse's hands have been the medium of conveyance of this malady, but it seems unlikely to the author that air contagion is the cause of the spread of the infection. In one institution in which the author has served the use of gloves by the nurses in handling typhoid stools has been made obligatory.

What Medical Subjects Can Be Taught Efficiently in the Literary Schools?—F. S. Lee believes that the medical schools of the present day should not be called on to give instruction in general physics, general chemistry, or general biology. Their proper habitat is the college. The office of the latter is to teach general information, while that of the medical school is to impart exact information, information which is abundant, specific, and always at the immediate service of the individual. Anatomy, physiology, physiological chemistry, pathology, bacteriology, and phar-

macology should be considered for purposes of medical instruction as applied sciences. Anatomy cannot be taught in the college as it is taught in the (medical) school. Physiology can be so taught and ought to be, but it should always be taught with its direct bearing on the practice of medicine strongly in view. The same general conditions apply to physiological chemistry. With pathology, bacteriology, and pharmacology, the case appears too obvious to require consideration. The elements of bacteriology can be taught in the college, but nothing more. There is no sense in attempting to have the two classes of institutions complete in any of these directions, but the author does not believe that except in occasional specific instances and for unusually cogent reasons, the schools should allow credit for strictly medical work done in the colleges.

The Causes of Injuries Among the Insane.—J. T. W. Rowe makes a plea for the attendants in insane asylums who are periodically attacked by the yellow journals and accused of every sort of brutality. Such abuse he considers as wholly unmerited. The most frequent instances in which these attacks arise are in cases of brain softening. Fractures and injuries occur among such patients despite every precaution. The reasons are that in cases of dementia paralytica the bones undergo rapid decomposition, the inorganic constituents are reduced, and the organic increased; the ribs, especially, become very brittle, due to great deficiency of osseous tissue; in the bony structure the Haversian canals may be almost obliterated by an oily deposit; in addition to the sudden reckless violence of this class, there is a diminished reflex activity and diminished sensibility in the limbs, with a contributory factor of the inattention of the patient; he makes a false step or lunges abruptly against another patient, due to his ataxia, the nervous current is dull and sluggish; excitomotor acts are tardy, therefore the muscular contractions are too late to guard against the injurious falls and blows. Under these conditions the dullness of common sensation lessens the pain of fractures and masks their presence.

Journal of the American Medical Association, May 12, 1906.

Fluid Extract of Squill.—E. M. Houghton concludes, from a number of experimental tests here detailed, that the acetic acid menstruum adopted in the 1900 edition of the Pharmacopeia, is not so satisfactory as alcohol in making the fluid extract of squill. The therapeutic results, he thinks, will be less marked and more variable than with the alcoholic preparation of the 1890 Pharmacopeia, and there will be not only a difference of degree of effectiveness, but also a different kind of action, as is shown by the comparison of the effects of the two preparations injected into the circulation. He suggests that it would be advisable for physicians to specify the 1890 preparation in their prescriptions when they desire to obtain the usual therapeutic action of squill.

Gastric Hemorrhage from Hepatic Cirrhosis.—W. J. Taylor gives the detailed history of a case of gastric hemorrhage due to atrophic cirrhosis of the liver, in which gastroenterostomy was performed on the diagnosis of gastric or duodenal ulcer. The operation was followed by great relief of the symptoms and apparent recovery, but the hemorrhage recurred ten weeks after the operation and the patient succumbed. The cause of the condition is not clear. The man was 40 years of age, of exemplary habits, never used alcohol, and with no syphilis or acquired or hereditary tendency to tuberculosis or other constitutional disease. Two cases similar in this respect and in their diagnosis are mentioned by Dr. R. B. Preble in his review of the literature (*American Journal of the Medical Sciences,* March, 1900), in which the autopsy showed no ulceration of the stomach or intestine. In this case, however, there was a probable incipient ulcer of the duodenum about an inch and a half from the pylorus, the probable site of the hemorrhage.

Kidney Fixation.—J. H. Carstens concludes that movable kidneys can be permanently fixed by proper technic. Many disturbances of digestion are due to this cause, probably by the effect on the sympathetic system and, possibly, on the solar plexus, and some of these may be relieved by fixation. Many of the nervous symptoms also can be relieved. A correct diagnosis must be made prior to operation, and any reasonable doubt as to the kidney being the cause of the trouble must be removed. Of course operation cannot relieve such organic conditions as gastric cancer, bowel obstructions, etc. He gives a condensed report of twenty-five cases occurring in his practice which he thinks ought to give a fair average of general results. In all cases the kidney remained in place. He has also found that fixing a loose kidney and decapsulating it pretty thoroughly, relieves, even cures, the early stages of Bright's disease. He has never lost a case, and thinks the mortality should be absolutely *nil*. He keeps the patients in bed fifteen or sixteen days and allows them to leave the hospital in three weeks.

Clean Milk.—J. Roby demonstrates from the experience of the Rochester health authorities that a remarkably clean milk can be secured without an expensive plant, and points out the way. The essentials are: First, the protection of the milk from any possible infection by disease, such as scarlet fever, diphtheria or typhoid. Second, cooling the milk and keeping it cold, or at least below 50 degrees. Third, keeping the utensils clean, or, better, sterile. Fourth, milking directly through sterile cheesecloth into a pail with a small (five-inch) opening. Fifth, keeping the milk tightly covered. These five points are absolutely necessary. Unless they are followed, milk with a low bacterial content cannot be produced. With the following also carried out the proportion can be still further reduced so that in well-equipped and managed dairies it can be kept at 1,000 or below: Sixth, discarding the first-draws from every teat. Seventh, keeping the cow absolutely clean. Eighth, keeping the milker's hands and clothes clean. Ninth, keeping the ceiling clean and free from dust; preferably it should be lathed and plastered. Tenth, keeping the barn clean and using shavings instead of straw for bedding. Eleventh, being careful not to stir up the dust before milking. He suggests that cities have a municipal sterilizing plant where the cans and cloth strainers can be sterilized and thence, with everything in place ready for milking directly into the can, be sent out to the farms. After they are filled, all the farmer would have to do would be to seal the can after removing the strainer, put it into an icewater trough, and then send the whole outfit back to the city, where the milk can be bottled or delivered directly. This plan was tested, and bacteriologic examination showed a milk with less than 500 bacteria.

Treatment of Bites of Copperhead Snakes.—C. W. B. Crum has had an average of two cases of bites by copperheads to treat every year for a number of years, and finds the following method to give incomparably better results than any other he has tried: He first freezes the area around the bite with ethyl chloride spray, then incises through the wound, usually making two parallel incisions an inch long through the two fang wounds. He then soaks the parts for a few minutes with a strong permanganate solution and applies dressings wet with this solution. The edge of this dressing is raised up every hour or half-hour and fresh solution applied. The trifling incisions usually heal in a day; an incision in an area poisoned by snake bite will heal with extraordinary rapidity, even if no effort is made at asepsis. He is inclined to attribute some virtue to the ethyl chloride beyond the anesthesia it causes. The extension of the poison seems to be very quickly checked by this treatment. If the patient is seen within an hour after the bite he is usually all right in two or three hours except for a trifling swelling. Internally, he gives a few doses of strychnine, sometimes also, in deference to popular prejudice, alcohol and ammonia. According to his observation, the bite of small snakes is likely to be more dangerous than that of larger ones. Three cases are reported illustrating as many different types of poisoning by copperhead bites.

The Lancet, April 28, 1906.

Obstruction of the Submaxillary Duct.—Three cases are reported by O. Eichholz. In the first instance the obstruction came on suddenly and the mass was expressed, it being of a putty-like odor and offensive. In the second case a salivary calculus had formed around a hair which had penetrated the orifice of Wharton's duct and passed along it for about half an inch. The symptoms of obstruction here also came on suddenly. In the third instance the only symptom was swelling, with some tenderness of the gland. The skin over the latter was painted with glycerine-belladonna and a fomentation applied; and the symptoms quickly abated. No plug or calculus appeared in this case. It is possible that the obstruction may have been spontaneously extended. The blockage may have been the result of inflammation.

Volvulus of the Cecum Treated by Reduction and Appendicostomy.—The patient of C. B. Mannsell was a woman of 77 years, always subject to obstinate constipation. She was seized with violent pain about the navel, and the abdomen speedily became hard and swollen. She was removed to hospital, and, as enemata failed to relieve her, it was decided to operate. At no time had there been any vomiting. When the abdomen was opened a tensely distended cecum and ascending colon were seen filling the lower abdomen and pelvis. These were deflated and withdrawn, when it was found that the cecum and portion of the ascending colon had made a complete turn from below upwards and from right to left. The lower portion of the ileum, having been carried in front of the colon, was tightly wound around the neck of the strangulated large intestine. The twist having been reduced, it was found that the cecum and colon had a well-formed mesentery, thus rendering volvulus a possible and likely accident.

Having closed the incision which had been made for deflation, the operator determined to fix and to drain the cecum by performing the operation of appendicostomy. In this instance he had to ligate and to divide a portion of the mesoappendix, but took care to leave sufficient blood-supply to the portion near the cecum. A stab wound was made at the outer border of the rectus and the appendix was drawn through and fixed by two sutures, its distal end was amputated, and its lumen was dilated with sinus forceps. A gum elastic catheter was then passed through it into the cecum and fixed in position by an encircling ligature. The after-history of the case was uneventful except for some slight suppuration which occurred in the abdominal wound about eight days after operation, evidently due to infection of the incision when the intestine had been opened for deflation.

Acute Meningococcal Septicemia.—F. W. Andrews reports the case of a man of 53 years without exposure so far as was known to any similar case. He was in a moribund condition when first seen by the author, with a profuse hemorrhagic purpura covering the entire body. He died in about twenty-four hours from the onset of his initial symptoms without any definite meningeal symptoms. The condition was evidently one of profound septic poisoning, though its nature could not be made out. About half an hour before death a syringeful of blood was withdrawn from the basilic vein and submitted to the usual examination methods. A large coccus was found, which was identified as that of Weichselbaum. The autopsy revealed no meningeal inflammation, though all the other organs showed evidences of a profound sepsis with hemorrhagic tendencies.

Recent Advances in Surgery of the Blood-Vessels.—The paper of D'Arcy Power opens with a review of the work of Crile of Cleveland on the subjects of surgical shock and collapse. It is familiar to American readers and need not be reproduced here. Power then discusses in turn the ligature of arteries in their continuity, the treatment of aneurysms by other methods than ligature, including the diagnosis by the *x*-ray, injection of gelatin, introduction of foreign bodies into the sac, acupuncture and wiring, electrolysis, and the Moore-Corradi method, which is a combination of wiring and electrolysis. All these questions are considered in the light of results actually obtained by different surgeons. Surgery of the venous system, the author thinks, is still in a very unsatisfactory state.

British Medical Journal, April 28, 1906.

Pneumococcic Arthritis.—G. D. Trevor-Roper reports the following case: A woman, about three months pregnant, was at a working party when she suddenly noticed that her neighbor was blessed with two thumbs on one hand. This, she declared, was a deformity which she had never ever heard of before, and it made a great impression on her. Her child, born six months later, had a very perfect supernumerary thumb on the right hand.

Pneumococcic Arthritis.—G. D. Trevor-Roper reports the case of a woman of 47 years with acute lobar pneumonia with crisis on the seventh day. On the next day there was some pain in the left hip and down the thigh. The same evening there was severe pain in the left shoulder and wrist, and she was quite unable to move the arm; temperature 100°. Next day the right shoulder, elbow, and wrist were painful and swollen; temperature 101.6°. Afterwards the left knee and ankle became affected and extremely painful, but no distinct evidence of fluid could be made out. The temperature, which never rose above 102°, fell to normal on the eighth day after the joint symptoms first appeared, the swelling and pain rapidly subsiding, and the case going on to complete recovery.

The Incubation Period of Malta Fever.—From observations of a case occurring in a British sailor, E. H. Ross is convinced that the period may vary from two to nineteen days. When the disease is naturally contracted the period is from eight to eleven days. In the case above referred to, the mode of inoculation was probably a mosquito bite.

Pleuritic Effusion Treated with Adrenalin by the Preliminary Intraserous Injection Method.—W. Ewart and F. Murray report one case. A boy of ten years was admitted to hospital with a pleuritic effusion of five days' duration. Paracentesis was performed by siphonage, and then air was allowed to enter by thoracic suction. The secondary effusions which ensued were treated by preliminary intraserous injections with a view to eventual paracentesis, but this was not required, as the fluid was completely absorbed. The injection consisted of ten minims of a solution of 1-1000 adrenalin. This was repeated four times in all, at intervals of from two to three days. Eventual recovery ensued. Care was taken to inject into the pleural cavity and not into the lung. After the second injection the accumulation of fluid seemed to diminish and its reabsorption proceeded rapidly. There is no positive proof, however, that these injections had any share in promoting the absorption. The authors are inclined, however, to attach importance to the procedure and think that in the more favorable cases of absorption somewhat larger injections might do away altogether with the necessity of paracentesis.

Bradycardia with Arrhythmia and Epileptiform Seizures.—J. M. Fainy's patient was a woman of 42 years whose pulse beat was only 22 per minute. There was no cyanosis, dyspnea, or hurried respiration. The heart was slightly enlarged and the *x*-ray showed that it lay in a very horizontal position. The auricles could be seen beating between the ventricular pulsations and seemed slightly larger than normal. Two auricular beats could be counted between the beats of the ventricles. The patient was subject also to seizures of an epileptoid nature, during which the face became flushed and her hands shook. The iodide and bromide of potassium were given with a view of lessening these seizures, but they seemed to aggravate the bradycardia and were soon discontinued. Finally the seizures became more prolonged and ended in sudden death. The question arises, says the author, were the earlier fits examples of epilepsia mitior (*petit mal*) occurring in a woman, in whom were present cardiac infrequency and cardiac arrhythmia, simply as a coincidence? or were the cardiac affection and the fits in direct relation to one another as cause and effect, and, if so, did the fits cause the cardiac phenomena, or vice versa? The author is inclined to think that the cardiac arrhythmia was the cause of the seizures, the cerebral anemia from the prolonged cessation periods of cumulation producing the syncopal and convulsive attacks.

Berliner klinische Wochenschrift, April 23, 1906.

The Value of Unstained Blood Preparations for the Practitioner.—Krönig is of the opinion that for the purposes of the practitioner it is preferable to make use of unstained blood preparations for diagnostic purposes. He believes that with a little practice it is possible to distinguish the diagnostic features with perfect satisfaction, while the saving in time and trouble is very great. He believes that many practitioners are deterred from making blood examinations by the complicated technique necessary, and that by examining unstained preparations directly they would be encouraged to study blood conditions more carefully. In courses of instruction he advises drilling the students first in the appearance of the stained smear, and of then demonstrating the blood of similar conditions in the fresh state and from the same patient if possible.

A Case of Cardiac Neurosis and Arteriosclerosis Following Trauma.—Goldscheider reports the case of a man of 26 years who had never been ill and was very slightly alcoholic. There was no history of venereal infection. In 1904 a brick fell on his head and he was unconscious for a time. He was kept under observation in the hospital for some time and was then dismissed, although headache, tremor, and general weakness persisted. About a year later he was seen again and was found to exhibit marked cardiac hypertrophy, rapid heart action, and pronounced thickening of the superficial vessels. The author considers that in this case a condition of arteriosclerosis, cardiac hypertrophy, and arrhythmia and increased pulse rate was the result of the original trauma, probably through the setting up of a vasomotor neurosis and general nervous and psychical irritability which reacted on the circulatory system.

Münchener medizinische Wochenschrift, April 24, 1906.

The Graphic Depiction of the Percussion Sound.—May and Lindenmann, in the course of investigations on the physics of the tympanitic and nontympanitic percussion sounds, have developed a method for securing graphic representations of the phenomena. The principle involved consists in recording on a photographic film fixed on a revolving drum the oscillations of a beam of light reflected from the surface of a delicate membrane which is set in motion by the vibrations produced by the sound to be studied. The membrane found most suitable for this purpose was a soap film. The authors present specimens of the photographic records obtained of normal pulmonary resonance and of abdominal tympanitic resonance, and state that they hope by these means to obtain a better insight into the nature of the sounds produced in this way.

Punctate Red Cells.—Meyer and Speroni, in discussing the nature of the erythrocytes which exhibit the minute basophilic granulations that are ordinarily spoken of as granular degeneration, take sides with those authors who consider that cells of this sort represent a regenerative and not a degenerative process. One of the arguments that has been used by the opponents of this view is that in cer-

tain conditions, notably lead poisoning, punctate cells appear in great numbers, while nucleated red cells are almost or quite entirely absent. The authors believe that such a conclusion is the result of inadequate observation, for if the blood in such a case be examined every day at certain periods nucleated red cells will always be discovered. Evidence in favor of the view that the granulations are regenerative in character, that is, due to the disintegration of the nucleus of normoblasts, is furnished by the observation of the authors that when warm-blooded animals having nucleated red cells, such as fowls, are subjected to poisons like lead which give rise to granular degeneration in the blood of animals whose erythrocytes are normally nonucleated, no basophilic dots appear in their blood cells. On subjecting the blood of fowls to the action of .5 per cent. salt solution in the incubator, at the end of twenty-two to twenty-four hours very marked evidences of karyorhexis are produced resembling the fragmentation of the nucleus seen in connection with basophilic granulation in the blood of anemia and leukemia, but nothing resembling granular degeneration is observed when human corpuscles are caused to degenerate in the same way.

The First Heart Sound.—Geigel says that there are two diastolic heart sounds formed respectively at the aortic and pulmonary valves and two systolic ventricular sounds. In addition there is always to be heard somewhere about the heart a systolic vascular sound which follows the first sound by a very minute interval. Over the aortic area there is usually to be heard the first heart sound together with the following aortic sound, which in some instances may be a short aortic murmur. There is always in the normal heart a point somewhere to be found at which the first sound may be heard split into its two components. The author considers it very unlikely that the first sound at the apex should be divided in any way other than this, as for example, through lack of synchrony in the action of the right and left sides of the heart. In the case of the divided second sound the conditions are very different, however.

Deutsche medizinische Wochenschrift, April 26, 1906.

Therapeutic Pneumothorax.—Brauer recounts at considerable length his observations on a case of pulmonary tuberculosis in which artificial pneumothorax was induced and the pleural cavity was inflated with nitrogen. The patient was a girl of 18 years having a very extensive lesion with cavity formation involving the entire left lung. Four injections of nitrogen were made at intervals of several weeks, the effect being each time very marked in causing reduction of temperature. No undesirable symptoms attended the collapse of the lung, and the author considers the effect on the temperature more pronounced than that to be secured by any other means. The technique of carrying out the procedure is described very fully. The first injection is the most difficult one. The skin is incised under local anesthesia and the intercostal muscle is divided by blunt dissection until the costal pleura is reached. This is then perforated with a blunt trocar and cannula, through which the nitrogen is allowed to flow in as the lung collapses. Considerable judgment is necessary in selecting the site for the puncture in order to avoid striking adhesions. The effect of the pulmonary collapse is to effect condensation of the lung tissue so that it no longer consists of numerous tense cavities, filled with infectious material and favoring progression of the process, but is squeezed out like a sponge, the softened areas being evacuated. The rest secured and the effect on the blood and lymphatic circulation also contribute to the favorable result.

The Gastric Juice in Chlorosis.—Arneth presents a table showing the results obtained in the examination of the blood and gastric juice in twenty-three cases of chlorosis treated in von Leube's clinic at Würtzburg. From these figures he shows why it is that such discordant conclusions have been published in regard to the behavior of the gastric secretion in this disease. The results of the analysis of the test meal appear to vary considerably in different stages of the malady, so that according to the period of treatment at which Arneth's cases were examined very different conclusions regarding the proportionate distribution of cases with very high, moderately high, or approximately normal values for the total acidity might be drawn. Arneth himself is of the opinion that in the milder and moderately severe cases of pure chlorosis there is usually a condition of hyperacidity, but that in general the acid values are in the neighborhood of the normal limit. The presence of marked hyperacidity is the rule for cases of great severity, but subacid values never occur. The treatment employed in these cases did not differ in any essential feature from that usually resorted to. The iron given was administered in the form of a pill composed of 7.5 grams of reduced iron made into 90 pills with equal parts of glycerine and gelatin. One or two of these pills are given three times a day, after meals.

The Action of Iodine on the Arterionecrosis Produced by Adrenalin.—Koranyi describes experiments made on twenty three rabbits, in the course of which twelve of the number were given subcutaneous injections of adrenalin and the remaining eleven received adrenalin and also an iodine preparation. The animals were kept under similar conditions, and one of each group was killed at definite intervals. The result showed well-marked arterial degeneration with plaque formation in the animals that had been treated with adrenalin alone, while those that had received iodine in addition presented normal aortas in almost every instance. It therefore appears that the arterial changes produced by adrenalin may be avoided by the simultaneous injection of iodine.

French and Italian Journals.

Mixed Tumors of the Breast.—P. Lecène concludes that there exist in the mammary glands, as in the peribuccal salivary glands, tumors characterized histologically by a special structure. Tissues are found here which do not form a part of the normal structure of the adult mammary gland. They may be osteo-, chondro-, or myxo-, sarcomata, pure or associated with epithelial formations (adenoma, or more rarely atypical epithelioma); they may be sarcomata, containing cystic cavities lined with stratified pavement epithelium with the structure of epidermis. These tumors may be called mixed tumors, according to Wilms, that is to say teratoid tumors developed from intraglandular embryonic inclusions (ectodermic or mesenchymatous débris according to the case). Again, very rare are those tumors which resemble clinically the common encapsulated tumors of the breast (adenofibroma, cystic adenosarcoma). In evolution, physical signs, and prognostic significance, the resemblance is striking. Careful histological examination of the tumor is necessary in all cases to make the diagnosis.—*Révue de Chirurgie,* March 10, 1906.

A Case of Subacute Meningitis of Saturnine Origin Ending in Recovery.—Oettinger and Malloizel report this case. The patient, a man thirty-four years old, a plumber, had been exposed to lead intoxication. Rather quickly there developed cerebral manifestations with mental depression and confusion, cephalalgia, vomiting, constipation, and slowing of the pulse. These symptoms were like those accompanying a lesion of the cerebrospinal meninges. Emaciation, anemia, and functional insufficiency of the liver made the patient very cachectic. Gradually these phenomena became less severe and finally almost completely disappeared. Such occurrences are not very rare in lead poisoning. The symptomatology in this case was clearly meningitic.—*La Tribune Medicale,* March 10, 1906.

Alimentary Levulosuria in Infectious Diseases.—S. Rebaudi tells us that the reaction showing levulosuria is the most delicate and exquisite that we know for demonstrating even slight functional disturbances of the hepatic cells. In febrile and afebrile infectious diseases there is always a functional alteration of the hepatic cells more or less severe according to the intensity and duration of the disease or the special conditions of the soil on which the germs grow. These functional alterations of the liver cells as soon as the infectious process is past gradually disappear, according as the gravity and duration of the infective process and the special conditions of the individual have diminished the vitality, or according to the condition in which the liver was when attacked by the infection. Bacteriological infections may bring out latent liver disesases.—*Clinica Medica Italiana,* November, 1905.

Influence of Hereditary Syphilis on the Heart.—De Chiara insists on the importance of the infective factor as a cause of the maladies of the heart in congenital cases. Such factors are rheumatism and hereditary syphilis. He describes a family in which one child showed the typical symptoms of mitral stenosis. The father was affected with syphilis, and there were luetic manifestations in all the members of the family. In the child described there had never been any other sort of infection up to the time when she was examined, which was at the age of twelve years. One year after the heart symptoms were recognized the child had chorea, and a year later she died suddenly. The author believes the heart lesion to have been the result of hereditary syphilis, since it appeared before the chorea. He advocated mercurial treatment of the pregnant mother throughout pregnancy in cases in which the father is syphilitic as a prophylactic measure to be used for the benefit of the child.—*Rivista di Clinica Pediatrica,* January, 1906.

Book Reviews.

The Medical Diseases of Egypt. By F. M. Sandwith, M.D., F.R.C.P., Part I. London: Henry Kimpton, 1905.

The writer, who has practised his profession in Egypt for a period of more than twenty-one years, has undertaken to present an account of the peculiarities of the diseases found in this country, without claiming for his work, however, the character of a treatise. The history and geographical distribution of each disease are fully considered, but the discussion is not limited to the so-called tropical diseases only, the infections, the exanthemata, the continued fevers, plague, ankylostomiasis, etc., being also taken up. The book is intended by the author for three classes of readers: the Egyptian student of medicine, the newly-settled foreign doctor who is suddenly charged with the responsibilities of many things unknown, and the physicians of other countries who may be interested in these types of illness. As the work is essentially an amplification of lectures to students, the colloquial style has been retained in many places, and the only fault to be found with the book is a consequent lack of system. Otherwise it constitutes very interesting reading and will undoubtedly prove of value to those for whom it is intended. Another favorable departure in book making may also be here recorded—the paper is of a very light weight, and this contributes to the easy handling of the volume—a great desideratum and worthy of imitation.

Nasal Sinus Surgery with Operations on the Nose and Throat. By Beaman Douglass, M.D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital; illustrated with sixty-seven full-page half-tone and colored plates, including nearly one hundred figures. Philadelphia: The F. A. Davis Company, 1906.

The relatively prominent part sinus disease has come to play in modern rhinology is evidenced by the title of this book. Formerly the various works issued on this subject devoted most of their space to general nose and throat operations, while their statements of sinus disease were compressed into one short chapter. The present volume opens with a general anatomical review of the nose; then follow chapters on respectively the frontal, ethmoidal, maxillary, and sphenoidal sinuses, deflections of the nasal septum, operations for nasal deformities and paraffin injections, external operations for the relief of deformities, turbinectomy, tonsils, adenoids and uvula, exostoses and synechiæ, laryngotomy and tracheotomy. The anatomical relations suggested by these headings are exhaustively discussed and modern methods of surgical relief explained in detail. Concerning the now popular operation of submucous resection for deflected nasal septum, we note the author's statement that the objections to it are the length of time required to accomplish it and the fact that perforations often result from sloughing or from instrumentation. While an occasional sacrifice of clearness of expression is noted, the general appearance of the work is most commendable, and it is one that can be cordially recommended to students and practitioners.

Die Krankheiten des Beckenbindegewebes. Unter Mitwirkung von J. A. Amann, München, O. Busse, Posen, und Ph. Jung, Greifswald. Herausgegeben von A. Martin, Greifswald. Berlin: S. Karger, 1906.

The present constitutes the third and concluding volume of Martin's elaborate and extensive work on the diseases of the female adnexa, the first installment of which appeared over ten years ago. The first portion of the book deals with the anatomy and physiology, the second with the pathology of the pelvic cellular tissue. The various chapters contain, in addition to the regular material, numerous references to the personal researches of the associated authors, many of which are of great interest and value. Thus mention may be made of the injection experiments of Jung in which he showed that the subserous parauterine, vesical, and rectal spaces are not always separated by connective tissue septa, but very often communicate with each other. Considerable importance also attaches to the statement of Busse, p. 168 *et seq.*, that pelvic peritonitis may be produced by lesions in organs higher up, such as the stomach and gall-bladder, which find their way downward without noticeably involving the intervening segments of peritoneum. Neoplasms of this region are fully considered in the concluding chapter, which has been written by Amann. Many excellent illustrations are presented. There is no book in the English language which can be compared with the present volume in scope.

The Strange Story of the Quillmores. By A. L. Chatterton. New York: Stitt Publishing Company, 1905.

This is a well-written story of a mysterious happening in an Indiana town. The story need not be recounted here, for it can be learned in the reading; but the manner of its telling is good; it is not "literature," but it is entertaining and presents an entertaining picture of life in a dull town—life more interesting in the telling than in the living. Some of the characters are well drawn, especially that of Uncle I', short for Irenæus, who followed the callings of keeper of the country store, undertaker, and postmaster, and that of Doc. Gus, the kindly country doctor, trained to self-sacrifice in the pursuit of his humanitarian calling and hard-headed withal, though deceived in common with his fellow-townsmen by appearances and led to do injustice in thought, if not in deed, to the two persons about whom the tale hinges. Another finely depicted character is that of the priest, who was in the secret, but prevented by the rule of his church from violating the confidences of the confessional. The book will not be one of the "best sellers," but it is as good as some that are, and its reading will fill a leisure evening pleasantly.

The Food Factor in Disease, Being an Investigation into the Humoral Causation, Meaning, Mechanism, and Rational Treatment, Preventive and Curative, of the Paroxysmal Neuroses (Migraine, Asthma, Angina Pectoris, Epilepsy, etc.), Bilious Attacks, Gout, Catarrhal and Other Affections, High Blood-Pressure, Circulatory, Renal, and Other Degenerations. By Francis Hare, M.D., late Consulting Physician to the Brisbane General Hospital; Visiting Physician to the Diamantina Hospital for Chronic Diseases, Brisbane; Inspector-General of Hospitals for Queensland. London, New York, and Bombay: Longmans, Green & Company, 1905.

The argument of this interesting treatise is that many of the ills of mankind, those especially which are mentioned in the subtitle of the book, are dependent upon an accumulation of carbonaceous materials in the blood and tissues of the body—a condition termed by the author "hyperpyremia." The writer's views are already familiar to readers of the Medical Record, wherein he has presented them in several well-reasoned articles, but in the present work he has expounded them at length, starting with an exposition of the theory and then making particular application of it to its causation of the various affections mentioned. To those who have followed Haig in his denunciation of the proteid elements of food, and have been half-persuaded that health is to be preserved or restored only by abstinence from these elements, the doctrine of Hare that carbon rather than nitrogen is the poison, comes as a shock and an upsetting of dietetic faith. Both cannot be right, else we must starve to death. Which is right, if either, must be left to the future to determine. The arguments of both are seemingly sound and well-nigh convincing, but perhaps neither is wholly right or wholly wrong. We suspect the evil lies in the consumption of too much food of both kinds, nitrogenous and carbonaceous. Man is rightly omnivorous, but he is wrongly multivorous; it is not so much from what he eats, but from how much he eats, that his ills arise. Dr. Hare's book is of great size, comprising two thick octavo volumes, and the reading of it grows rather tiresome after one has gone through a few hundred pages and finds the same ideas repeated over and over again in practically the same words. His theory is, as we have already said, that the obnoxious elements of the food are the carbonaceous—the starches, sugars, and fats—and that little or no harm can come from the consumption of proteid—the nitrogenous element. The arguments put forth in support of these statements are strong, and the reasoning is cogent; but "the proof of the pudding is in the eating," and a few practical demonstrations are worth a cloud of theories and unproved assertions. Most practitioners will admit, we believe, that a conscientious trial of the no-meat, no-fish, no-tea regimen has not always been followed by the brilliant results that are claimed for it by Haig and his followers. Neither is an exclusive or nearly exclusive nitrogenous diet regarded by the majority of medical men as either safe or curative. Hare regards gout, epilepsy, hemorrhages, pyrexia, and many other disturbances of the economy as efforts on the part of nature to effect a purification of the blood surcharged with carbonaceous material, hence these are salutary in their intent; but, like many of nature's efforts, they constitute a rather clumsy means of bringing about the healing process, and the remedy may in the end prove to be worse than the disease. Hence the task of the therapeutist is to restrict the carbonaceous intake or to prevent both the "carbonization" of the blood, or "hyperpyremia," and the attempts of nature to relieve it. Among the existing causes of these "decarbonizing" attacks are many factors, prominent among which is eyestrain, and the author quotes with approval several of the statements of Gould regarding the evil results of uncorrected astigmatism. We wish Dr. Hare had condensed his work into smaller compass, for he would thus have had many more readers and could have preached to a wider circle. As it is, numbers will doubtless be turned away from a careful study of his theory by the apparent formidableness of the task.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, held March 26, 1906.

Dr. Floyd M. Crandall in the Chair.

A Case of Rhinoscleroma.—Dr. William S. Gottheil presented this case. He said that when Hebra, in 1870, described a case of rhinoscleroma, he regarded the lesion, from its hardness and insensitiveness, as a chancre; but its persistency and unchangeableness, the non-appearance of other symptoms of syphilis, and the total inefficacy of antiluetic treatment soon made him change his opinion. A little later Kaposi made a histological study of a case, and concluded that the tumor was sarcomatous. Mikulicz, in 1876, discovered the peculiar cells that bear his name. It was Frisch, however, in 1882, who described the rhinoscleroma bacillus, an organism hardly distinguishable from the ordinary pneumococcus, which was generally recognized as the cause of the disease. The malady was quite rare; Wolkowitsch, in 1889, could find only 86 cases, 52 of which occurred in Western Russia and Eastern Austria. Since the immigration from Southeastern Europe had set in an occasional case was seen here. The lesion was a chronic tumor of the connective tissue type caused by the growth of the specific bacteria in the tissues. In the first cases observed the nose was especially affected; hence the name. With the development of rhinolaryngology in the 80's cases in which the palate, pharynx, and larynx were chiefly or even exclusively affected were recorded; and it was the opinion of some observers that the affection usually began in these structures, rather than in the nose itself. Scleroma had, therefore, been proposed as a more fitting designation; but the old name was still generally employed.

The patient, Mrs. R. H., aged 29, Russian, was sent to him by Dr. J. Frankel, of this city, July 17, 1905. The tumor had been growing for four years; it appeared first in the nares, and later spread into the mouth. Increase in size had been steady, though slow, ever since; besides the deformity, the condition of her throat interfered seriously with deglutition, and the complete stenosis of the nasal passages caused great discomfort. Her general health was good; she had several living children, and was then nursing a three-months infant. There were two large tumor masses occupying the external and lower borders of the nares, the columella, and the palate bone, causing marked projection of the upper lip and great dislocation upward of the entire nose. The tumor mass was hard and wooden, absolutely insensitive, and slightly reddened and marked with dilated vessels on its surface. Inspection of the mouth showed that the entire hard palate was infiltrated and thickened; the uvula was gone, and the soft palate shriveled up into a cartilaginous mass. The fauces were deformed with cicatricial bands, and both they and the posterior pharynx were ulcerated in places. The nares were completely occluded throughout their entire length on both sides, posterior rhinoscopy showing only the tumor masses projecting into the pharyngeal cavity. The larynx was free. She had had a good deal of treatment of various kinds, including arsenic, antiluetic medication, and parenchymatous injections of unknown nature. Her main difficulty being the nasal stenosis, he succeeded finally in passing a fine probe on each side, and attempted dilatation with small hard rubber dilators on several occasions. In spite of the utmost care and delicacy in the manipulations, violent and almost uncontrollable hemorrhage was always set up; on one occasion she had to remain at his office with the anterior nares and the upper pharynx tightly plugged for four hours before he could send her home. This was not a feature usual to these growths, and undoubtedly pointed to the presence in some degree of the hemorrhagic diathesis. It caused him to give up all further attempts at instrumental dilatation, and rendered hope of operative relief very faint. He was therefore confined to the use of topical applications for the pharyngeal and nasal symptoms. There being no radical treatment for this condition known, he turned to the *x*-ray. Being by no means an enthusiast for this remedy, he promised the patient nothing. From October 30 to date she had had twenty-six sessions of ten minutes duration at intervals of two or three days, with a medium tube placed as close to the nose as possible. Every four or five sessions she would get a mild but well-marked reaction; treatment would then be suspended for a week or so, until the inflammation subsided. To his astonishment and gratification there had been a marked change in the external tumors. They had diminished greatly in size, being one half what they were at first; both the patient and her friends noticed the change. On the other hand there had been no improvement in the palate infiltration, the nasal stenosis, or the condition of the throat. He attempted to apply the ray intrapharyngeally, and would continue to do so; but as the condition there was one of cicatricial band formation and ulceration, and effective application of the ray to the body cavities was difficult and unsatisfactory, it was very doubtful whether any amelioration would result. He added that, in spite of the patient's statement to the contrary, the cicatricial and ulcerative lesions of the throat were of a later stage of the disease than the tumor formations of the nose; the disease probably began in the palate, and spread anteriorly and posteriorly. In connection with this he showed a photograph of a case of fifteen years' duration that was in his Lebanon Hospital service some time ago. The ulceration and cicatricial contraction had caused a loss of tissue in the lip and anterior palate closely resembling the deformity of hare-lip.

Report of a Case of Complete Inversion of the Uterus.—Dr. J. Seymour Emans reported this case (see page 795).

A New Instrument for Measuring all the Diameters of the Pelvis in the Living Woman.—Dr. Sidney D. Jacobson presented this instrument (see Medical Record, March 31, page 489).

The Clinical Manifestations of the Toxemia of Pregnancy.—Dr. J. Clifton Edgar read this paper. He said that his object was merely to make a preliminary statement of the results of his study of this subject during the past year. The belief was slowly but surely gaining ground that while it was undoubtedly true that various toxemias might occur in pregnancy, still a special autotoxic state of pregnancy existed, or the pregnant state predisposed or favored a condition of toxemia peculiar to pregnant women. This toxemia might be defined as a state of the blood due to faulty metabolism, and *possibly* arising from hepatic insufficiency. It showed itself most commonly in trivial ailments, but exceptionally by serious, severe, and even pernicious affections, as acute yellow atrophy of the liver, pernicious vomiting and eclampsia, conditions which were now believed to be closely related. We were to-day practically ignorant of the origin of the poisonous material or materials causing pregnancy toxemia. There was a growing belief among those who had given the subject the most study that these substances were metabolic in origin; that there was a direct connection between these metabolic changes and the pregnant condition itself, and that these toxic substances in the blood were more or less identical in pernicious pregnancy, vomiting and eclampsia alike, and that they caused in some cases first lesions in the liver, and subsequently in the kidneys, the kidney changes being secondary in character. The time would probably come, if it was not already here, when we would be able to detect an autotoxic state by the detection of marked changes in metabolism from a chemical examination of the urine, before the presence of albumen and casts pointed to the

secondary changes in the kidneys. Within the past two years we had had another clinical index of the autotoxic state of pregnancy proposed by Dr. Ewing of the Cornell University Medical College. This clinical index was based upon the supposition that even mild cases of pregnancy toxemia caused errors in metabolism possibly due to lesions in the liver cells, and as a result various unoxidized compounds were formed in place of nitrogen, which were in themselves poisonous in character, and were found in the urine in various percentages of the total nitrogen as urea nitrogen, ammonia nitrogen, amino acid nitrogen, uric acid nitrogen, creatin nitrogen, creatinin nitrogen, etc. As a danger signal the most important seemed to be the ammonia nitrogen and the amino acid or undetermined nitrogen. He did not believe that as yet sufficient material had been collected to permit us to formulate from the percentages of total nitrogen excreted as urea nitrogen, ammonia nitrogen, etc., any rule to guide us in the determination of the severity of the pregnancy toxemia. These relations varied in the normal individual and were dependent upon the intake of nitrogen, and many other sources of error were possible. In order to reach a definite conclusion, it was necessary to tabulate a large number of urinalyses, both of those who did and those who did not show clinical symptoms of toxemia. For nearly a year he had had examinations made in both toxic and non-toxic cases in his private practice, and of the suspected cases in two hospital services. While he hesitated to formulate rules for diagnosing an impending or existing pregnancy toxemia, he would state that in most of the cases examined in which the clinical picture of a toxic condition was present, such as headache, excessive vomiting, slight jaundice, mental and physical torpor, high arterial tension, itching of the skin, etc., the complete chemical examination of a twenty-four hour specimen of urine showed errors in metabolism. Sixty-two chemical analyses were made in twenty-four patients. The analyses included, in addition to the total nitrogen and the nitrogen percentages or coefficients, the reaction, specific gravity, tests for albumen, sugar, indican, urobilin and casts, and in most of the specimens for acetone and acetoacetic acid. The character of the urine indicating normal metabolism depended upon the relation of the nitrogen of the nitrogenous compounds of urine to the total nitrogen. Thus, broadly speaking, when the total nitrogen ranged from three to fifteen grams per day the normal extremes of the percentages of total nitrogen excreted as urea nitrogen, ammonia nitrogen, creatinin nitrogen, uric acid nitrogen, and undetermined nitrogen were as follows: Percentage of total nitrogen excreted as urea nitrogen, 61 to 88 per cent.; percentage of total nitrogen excreted as ammonia nitrogen, 13.6 to 2.9 per cent.; percentage of total nitrogen excreted as creatinin nitrogen, 17.2 to 2.7 per cent.; percentage of total nitrogen excreted as uric acid nitrogen, 2.5 to 0.7 per cent.; percentage of total nitrogen excreted as undetermined nitrogen, 11.1 to 40 per cent. Abnormal metabolism was indicated by a urine which deviated from the generally accepted normal standard for the given quantity of total nitrogen excreted in the twenty-four hours. The twenty-four cases were readily divided into four classes, as follows: 1. Non-toxic pregnancies, consisting of those in which both the clinical symptoms and the chemical analyses were in accord with what could be considered a normal standard. 2. Toxemic vomiting, in which class were included cases of persistent pregnancy vomiting, due to some poison of unknown origin and accompanied by symptoms of toxemia. In four of the six cases in this class the percentage of total nitrogen excreted as ammonia nitrogen ranged high, reaching 48.4 per cent. in one case. Of sixteen analyses albumin appeared as a trace four times and casts only twice. 3. Preeclamptic toxemia, in which class were the cases in which the clinical picture of pregnancy toxemia was present, but persistent vomiting was not a symptom, although appearing intermittently in most of them. Of the nineteen urinalyses the percentage of total nitrogen excreted as ammonia nitrogen only reached 10 in one instance. The percentage of nitrogen excreted as undetermined nitrogen ranged high throughout the series, and in twelve urinalyses of the first three cases albumin only appeared as a trace once, and in no instance were casts found. In four of the cases in this series the kidneys seemed to be at fault. 4. Eclamptic toxemia, in which class he reported three cases, in which eight urinalyses were made. Two classes of eclamptic toxemia were recognized, an eclampsia of nephritic origin or renal insufficiency, and an eclampsia resulting from a neglected toxemia of the kind peculiar to pregnancy. A case illustrative of each class was cited.

The Chemistry of the Toxemia of Pregnancy.—Dr. C. G. L. Wolf presented this communication with a lantern-slide demonstration

The Medical and Surgical Treatment of the Toxemia of Pregnancy.—Dr. George L. Broadhead presented this paper. After reviewing the recent ideas in regard to the etiology of this condition he spoke of the great practical value of urinalyses in this class of cases. For convenience all cases of toxemia were divided into three classes: (1), toxemia with persistent vomiting; (2), toxemia without persistent vomiting, and without convulsions; and (3), toxemia with convulsions, or eclampsia. The subject of treatment was divided into (1) gynecological, (2) hygienic and dietetic, (3) medicinal, and (4) obstetrical. The gynecological treatment consisted in the correction of some abnormal condition of the genitals. In regard to hygiene and diet it was necessary to have cheerful surroundings, freedom from worry, and such hygienic measures as facilitated elimination of the poison. In severe cases rectal enemata were resorted to. The following formula gave good results: The whites of two eggs, whiskey or brandy ℥ss, a pinch of salt, and peptonized milk to make ℥vi. In addition to enemata a saline infusion of one pint should be given each day. In speaking of medicinal treatment, he reviewed the measures usually employed for the relief of the vomiting of pregnancy. The bromides, with or without chloral, given per rectum had been of advantage at times. Morphine should be reserved for very severe cases. Calomel was superior to any other drug in its action upon the liver and bowels, and should be used frequently in the toxemia of pregnancy. Prolonged irrigation of the colon with physiological salt solution was of great benefit; it should be followed by the retention of a quart. The heart action should be sustained by the use of stimulants. The obstetrical treatment consisted in the dilatation of the cervix, and second, the emptying of the uterus. In regard to the latter procedure he thought that if it was to be followed by good results it must be done early. In presenting the second division of the subject, toxemia of pregnancy without persistent vomiting and without convulsions, he thought the chief treatment must be eliminative. The diet should be modified by taking away the red meats and reducing the ingestion of nitrogenous foods to the minimum. In severe cases the diet should be chiefly milk. The kidneys might best be stimulated by copious draughts of water. The bowels should be kept open by the use of cascara, podophyllin, aloes, the laxative mineral waters, or calomel in small doses, followed by a saline. In the severe cases calomel with compound jalap powder, or in the form of compound cathartic pills, acted well. Colonic injections and intravenous infusions should be given in severe cases. Venesection had its place in certain cases. If medicinal treatment failed, labor should be induced, and it had been his experience that labor should not be prolonged in this class of patients. In considering toxemia with convulsions or eclampsia, he concluded that during the eclamptic seizure chloroform should be administered and oxygen, if possible. The patient should be protected from injuring herself as far as possible. If the pulse was full and strong with tension the fluid extract of veratrum viride ♏x-xx should be given hypodermically, and repeated in doses ♏v every half hour until the pulse was reduced to 60. In case of collapse, whiskey, morphine, and atropine hypodermically

should be used. If the pulse was weak and feeble we should rely chiefly on chloral and bromides by the rectum in doses 3ss-3i. Where the pulse was strong we should use veratrum viride as indicated, combined with chloral by the rectum. If the patient was unconscious the bowels should be moved by croton oil ♏i-ii given with olive oil 3i on the back of the tongue. If this was not effective a high enema of sulphate of magnesium and castor oil should be used. The colon should be irrigated with one gallon of hot saline solution, and several quarts should be left to be absorbed. If the patient was conscious 3ii magnesium sulphate should be given every fifteen minutes until one ounce had been given. Intravenous infusion might be reserved for very severe cases. Venesection, when labor had not yet begun, might be used to advantage in robust patients with a full pulse, twelve to sixteen ounces of blood being removed. To decrease arterial tension, and as a heart stimulant, diuretic, and diaphoretic, nitroglycerin was of great value, while caffeine and strophanthus were second. If labor had not commenced a dilating bag should be introduced, and when the cervix was softened and well dilated delivery should be accomplished by forceps or version. The bags might be used to hasten labor if it had already begun. If the cervix could not be dilated by ordinary methods cesarean section should be resorted to; but unless the operator was perfectly able to perform these operations he had better rely upon medical treatment alone. The one fact to be kept in mind at all times was that in elimination lay the hope of the patient's salvation.

Dr. Egbert Grandin opened the discussion on these several papers and said that the keynote of the conclusions reached regarding the management of the toxemias of pregnancy was to be found in prophylaxis; treat the case before the toxemia developed. But, unfortunately, in these days obstetrics was not recognized as a branch of medicine remunerative enough to warrant the general practitioner giving the pregnant woman the care she should have. The prophylactic treatment of toxemia of pregnancy was too often neglected. If the intestinal tract of the pregnant woman was kept free, if the kidneys were sufficient, she would not suffer from the toxemias of pregnancy. The average medical man was unable to give the proper amount of time for the proper care of these cases; if he examined the urine for albumin he thought he was doing his duty. Not only should the condition of the kidneys be learned, but the condition of the liver as well. The laity should, in his opinion, be taught that the obstetrician was entitled to as remunerative a fee for the work he should do as the gynecologist secured for doing the work the obstetrician left undone. When the toxemia was imminent, with the pulse rapid, with some temperature, with vomiting, etc., the average man waited and the patient died. No woman should be allowed to die from the vomiting of pregnancy. The late Professor Lusk stated that those who died, died because they were compelled to wait too long. These cases should be tamponed, and, after waiting twenty-four hours, the uterus should be emptied with the hand, or with the curette if necessary. In the treatment of toxemia, when eclampsia was imminent, the medical man who folded his hands and waited was scarcely entitled to his title. In such a case the thing to do was to empty the uterus. The treatment of toxemia of pregnancy was eliminative. Calomel was too slow in its action, and Dr. Grandin preferred elaterium in big doses. He did not depend upon veratrum viride; he had seen eclampsia with a pulse of 60; therefore, what good would veratrum viride do under such conditions? Empty the uterus. If the pulse was tense, he relied upon glonoin, and in large and often repeated doses. The effect of nitroglycerin was evanescent and must be repeated often if the internal congestion was to be relieved. The colon should be irrigated, and with plenty of fluid. In these cases there was the element of spasm to be dealt with, and he did not know what it was due to. But the best results seemed to him to come from the use of hyoscine hydrobromate in big doses given hypodermically. Give until the pupils were dilated. This relaxed the spasm of kidneys and intestinal canal as no other drug would. Morphine he believed to be the invention of the devil in these cases. Venesection was recommended when the pulse was full and bounding. If the patient was bleeding from the uterus he believed it should not be interfered with; let her bleed. If an anesthetic was to be used, give chloroform, and not ether. The vaginal cesarean section had a new field in these cases.

Dr. S. Marx considered the clinical aspect of toxemia of pregnancy and said that, from the standpoint of the clinician, we should remember that we were speaking of gentlemen in general practice, and not of the wonderful laboratories, and that we must depend upon the simpler tests. There was no better simple test, one which would place a man on guard, than a study of the quantity of urine plus the specific gravity. When in doubt, have the case examined by experts. He divided the cases into two classes: first, those with true kidney lesions or conditions, and, secondly, the intoxications depending upon intestinal or liver conditions. If one waited for the presence of albumin, urea, or casts, often, when found, the patient would be beyond hope or dead. The toxemia due to liver or intestinal conditions was evidenced by estimating the amount of urea or nitrogen derived from urea. When the nitrogen partition was below 60 uremic convulsions were likely to occur. The patient was in danger, too, when acetonuria appeared Regarding treatment, not much was to be said in regard to the medical treatment; the safety of any patient who was threatened with eclampsia rested in immediately emptying the uterus. No other form of treatment should be entertained for a moment, such as the use of veratrum viride, chloral, bromides, etc., when the symptoms were on the increase, as manifested by the general symptoms and changes in the urine, which should be examined day by day. The next most important treatment was by bleeding. If the woman was beginning to twist, or to convulse, he said he preferred to bleed the woman, a distinct indication in his opinion. The surgical treatment, however, was the most important form. Empty the uterus. For dilating purposes he believed the hand to be the best instrument, although other instruments might be used, because sometimes it was impossible to empty the uterus with the hands alone. The vaginal cesarean section was an operation of election under certain conditions. The Bossi dilator was a brutal instrument and should never be used.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held February 20, 1906.

Dr. Arnold Sturmdorf, Chairman.

Presentation of Specimens.—Dr. George Gray Ward, Jr., showed a small metal appliance which he had removed from the uterus of a woman 22 years old. She had long suffered from dysmenorrhea, and was referred to a New York physician, apparently in good standing, who had told her that in order to relieve her symptoms it would be necessary to insert into the uterus an instrument imported from France which would cost her $50. This was done, and she was instructed to return in six months. Following the insertion of this appliance, she suffered excruciating pain, especially at each menstrual epoch, until she finally applied for relief. An examination revealed a marked anteflexion, with a good deal of endometritis and discharge. She was admitted to the Post-Graduate Hospital, and when Dr. Ward curetted her he found this instrument, which was deeply imbedded in the uterine tissues. It was apparently made of two different kinds of metal wires, fitted together, and each terminating in a ball point. The impression that it was intended to convey evidently was that it had some magnetic influence.

Treatment of Uterine Retrodisplacements.—The

Chairman, Dr. Sturmdorf, said that recorded observations on uterine retrodisplacements antedated the writings of Hippocrates, and, although one of the most ancient and clinically familiar of gynecologic topics, its etiology, pathological significance and correction still presented obscure and much-disputed elements. The early writers attributed the gravest significance to the condition, and laid proportionate stress upon the necessity for its correction. Whenever views supposed to be false were authoritatively repudiated the disciples of the new conceptions usually rushed to the opposite extreme. Thus came a period during which it was claimed that retrodisplacement, as such, was entirely unproductive of symptoms or consequences unless complicated by uterine or adnexal disease, and it was to the correction of such complications that all therapeutic efforts were directed. To-day we recognized that while many cases of uncomplicated retrodisplacements were unproductive of disturbance, there were many more that called for correction. Such correction should be based upon a clear conception of the nature of normal uterine support, and the elements involved in the disturbance of normal support. Unfortunately, there was no unanimity of opinion as to the relative importance of the various supporting elements involved in maintaining the normal anteverted position of the uterus, and it naturally followed that many of the operative measures in vogue, especially the so-called fixation methods, only succeeded in substituting one uterine malposition for another. It should be borne in mind that the free mobility of the uterus was essential to its own structural and functional integrity, as well as to that of its contiguous viscera, and any method immobilizing the uterus could not be accepted as rational or curative. It was not a question of correcting the displacement, but of curing the patient. Operative differentiation between ventrofixation and so-called suspension was purely visionary; no one could predetermine the amount of reactionary agglutination that would occur between visceral and parietal peritoneum in a given case; we had all seen a thin filamentous attachment follow a broad sutural coaptation, while on the other hand extensive agglutination might result from the merest contact. The extraabdominal attacks on the round ligaments had been followed in a number of reported cases by mishaps and failures; furthermore, it was claimed that while the round ligaments held the uterus in anteversion, they could not elevate it into its normal plane, yet numerous were the recorded and unrecorded successes following that method of operation. The intraabdominal and vaginal methods of shortening and fixing the round ligaments, the vaginofixation, the shortening of the uterosacral ligaments, like the classic pessary, massage, the tampon, and postural treatment, all had their field of usefulness, their advocates, and their adversaries. These methods could not be all wrong nor all right, for each counted its successes and its failures, and it became evident that each of these procedures must be adapted to certain forms or phases of the condition under consideration. It was with a view to the elucidation of that point that the present discussion was introduced.

Dr. Egbert H. Grandin said that by logical sequence the treatment of uterine displacements had resolved itself practically into a surgical one. With the development of abdominal surgery came the new pathology and the modern treatment, which aimed at a cure rather than mere palliation. It had been learned that the mere fact of version did not cause symptoms, but that another factor, downward sagging, was the essential element. It had been found that it was not cellulitis, but peritonitis, which was the complication. Thus, of necessity, all but those who would not see, recognized the futility of the pessary, tampon, etc. In dealing with cases of movable, uncomplicated uterine displacement the patients should always be given the choice between palliation and cure; if they preferred the pessary, with all its annoyances, it was their right, since any operative measure carried with it a certain risk. In discussing the operative treatment of these cases, Dr. Grandin said it was necessary at once to rule out any procedure which resulted in fixation of the uterus, for it did not advantage the subject in the least to substitute one pathological position for another. He considered fixation justifiable only in women with prolapse after the child-bearing period. There remained, therefore, three methods of approach: through the inguinal canals, through the vaginal vault, and through the abdomen. The inguinal canal route he had long ago rejected because it subjected the woman to the risk of double inguinal hernia, and also because, while such an operation might draw the uterus forward, it did not lift it upward—a *sine qua non*. Furthermore, he had seen a number of instances in which operation through the inguinal route had resulted in the uterus being placed so closely against the pubes that the bladder could not fill upwards, bladder symptoms being substituted for back and for bearing-down symptoms. The speaker said that fixation by dissection through the vagina never had logical grounds for existence, and he mentioned it only for renewed condemnation, nor could he accept infolding or shortening of the round ligaments through the vagina, because it required considerable mutilation of the vaginal vault for performance, because he did not think the uterus was lifted up thereby, and because the technique might be followed by fixation. Coming to the abdominal route, Dr. Grandin said that formerly suspension was practised by the posterior or the anterior fundal wall, but it had been found that such a procedure was apt to be a cause of dystocia in the event of subsequent pregnancy. Those who were expert might shorten the posterior ligaments of the uterus, although it appeared to the speaker that while this method would maintain the uterus forward, it would not keep it at a higher level. His own method, preferably, was to suspend the uterus by the round ligaments to the parietal peritoneum, without, however, buttonholing the fascia. This kept the organ forward and upward; it did not interfere with the normal sphere of motion, nor did it cause dystocia at the ensuing labor. In cases of complicated uterine displacement the problem was a complex one, as one had to deal not alone with backward displacement, but also with peritoneal bands binding the uterus backward and downward, and, in addition, frequently with tubal and ovarian disease. Also, in many cases, the intestines, omentum, or appendix were adherent to the uterus or the broad ligaments, and in some instances no one could tell the extent or the nature of the complication. This emphasized the fact that the abdominal route should be that of election in the cases under consideration.

Dr. J. Riddle Goffe said that in order to discuss the subject in a broad and comprehensive way, it would be necessary to review somewhat the dynamics of the female pelvis, and especially the forces that were at work in maintaining the uterus in its normal position. From that we could learn what would remove it from its normal position, and what tissues should be utilized to restore it when it had become displaced. He was a believer in the view that the uterus was supported absolutely and entirely by its ligaments. Opposed to this theory was the idea that the perineum supported the uterus; but this seemed to be disproved by the fact that when the perineum was torn through into the rectum and absolutely destroyed, so far as any probability of support was concerned, the uterus still remained in place. That was the experience of all observers. In such cases what held the uterus in position? Naturally its ligaments. If the uterus is compared with other organs in the body, weight for weight, it is found to have more ligaments than any other organ. These ligaments, we were told, act as guy-ropes, but the speaker said he did not believe that six or eight different guy-ropes were necessary simply to regulate the oscillations of the uterus. On the contrary, he thought they were there for purposes of support, and that they actually did support the uterus. In cases in which the perineum was not absolutely destroyed.

but torn through to the rectum, the idea of restoring the perineum would be to prevent a retrodisplacement and descent of the uterus. The explanation of this is that the condition was complicated by a retrocele; we had to deal with a pulling force on the uterus which was not there before, and when this dragging force had become sufficient to overcome the resisting power of the ligaments, then the uterus descended, and finally retroverted. Dr. Goffe said he did not assume that all the ligaments of the uterus exerted an equal force or resisting power to the descent of the organ. He regarded the uterosacral ligament as the principal sustaining power, and as long as that maintained its tone and proper length it was impossible for the uterus to descend or become retroverted. The first step in the process was always a relaxation of the uterosacral ligament. The round ligaments he believed were the guy-ropes, acting to maintain or limit the excursions of the uterus in the filling and emptying of the bladder. The broad ligaments were there very largely to act as viaducts for the great blood-vessels that nourished the uterus, and he knew of no better illustration of the economy of nature in adapting means to needs than we had in the broad ligaments, sustaining and giving passageway to the great blood-vessels, and lengthening as the demands of pregnancy were made upon them. In the uterosacral ligament we had a muscular structure, which, as a rule, was sufficiently powerful to lift the cervix high in the hollow of the sacrum, which was its normal position. Dr. Goffe said, to his mind, the chief cause of retrodisplacements of the uterus was lack of involution of the ligaments after parturition. These ligaments were muscular in structure, becoming hypertrophied during parturition, and when the uterus involuted after parturition it was just as important for the ligaments to involute as it was for the uterus itself. The treatment for this condition, as it was in other troubles to which flesh was heir, was prophylactic, and should be carried out directly after parturition, while involution was going on. It consisted, essentially, of stimulating the circulation by lifting the uterus up in the pelvis, so that the circulation be kept to as high a degree of perfection as possible. It was at this stage only that the pessary could be regarded as a means of cure. Dr. F. Davenport of Boston, who had carefully investigated this subject, had made the statement that most of these cases were cured by the prompt insertion of a pessary after parturition, in order to hold the uterus high in the pelvis, thereby stimulating circulation and aiding involution. In chronic cases the pessary had to be worn continuously; here it did not effect a cure, but simply acted as a crutch did for a person with a short leg. Coming to the surgical treatment of retrodisplacements, Dr. Goffe said that as he maintained that as inefficiency of the uterosacral ligament was the chief cause of their occurrence, it was only logical to look upon its utilization as the best method for their correction. While this method was not applicable to all cases, it was in the majority. The ligament could be shortened either through the vagina or the abdomen with very satisfactory results. The speaker said that in some cases in which it was difficult to reach the uterosacral ligament he had utilized instead the round ligaments, but the support thus given to the uterus would not be permanent unless at the same time it relieved the strain on the uterosacral ligament, and allowed the latter to recover its tone. In shortening the round ligaments, Dr. Goffe said he preferred to operate through the anterior vaginal vault, and he had found that many patients would consent to such an operation who would refuse to submit to the abdominal operation.

Dr. S. Marx said that if the gynecologist could view these cases from the standpoint of the obstetrician he would doubtless change his opinion regarding the advisability of performing some of the operations that had been discussed for the relief of uterine retrodisplacements during the child-bearing period. The gynecologist, after operating on these women, perhaps kept them under observation for a few weeks and then lost sight of them. He was satisfied as long as his patient made a good recovery from the operation, and with the apparent restoration of the abdominal relations. It was left to the obstetrician to undo a good part of the work done by the gynecologist. The work of the gynecologist and the obstetrician, Dr. Marx said, should be more closely affiliated. At present there was entirely too much operative work done in connection with uncomplicated retrodisplacements of the uterus, and as a result of this so-called surgical correction some of the worst cases of dystocia had resulted. The speaker said he agreed with Dr. Goffe that most of the early cases of uterine retrodisplacement could be cured by the temporary use of the pessary and tampon. Among the operative procedures for the correction of this condition that were apt to have a deleterious influence in case of subsequent pregnancy, the speaker particularly condemned the vaginal method of fixation of the uterus. He recalled one such case in which an operation on the round ligaments had been done by the vaginal route, with resulting distortion of the cervix, and at a subsequent pregnancy the forceps brought away not only the fetus, but also portions of the vagina, cervix, and uterus. In another case, in which a fixation operation had been done through the anterior fornix, the woman subsequently became pregnant, and at the time of delivery an obstetrical operation was necessary, from which she barely escaped with her life. The operation for the correction of uterine retrodisplacements through two openings in the abdomen, as advocated by Goldspahn of Chicago, the speaker said he regarded as scientifically incorrect and absolutely unnecessary. The methods he favored personally were the various suspension operations by the abdominal route. No single operation was suitable to all cases. In many cases the displaced ligaments had become thin and elongated, and were no longer strong enough to support the uterus, and under such conditions he resorted to anterior suspension. When he found the ligaments still thick and muscular, he contented himself with a simple reduplication of the ligaments, *plus* peritoneal suspension. By doing this one did not create a fixation operation, nor was the capacity of the bladder limited. The speaker mentioned three cases in which he was obliged to do a cesarean section after an abdominal fixation had been done through the aponeurosis of the abdomen by excellent men, and yet in all three instances it was absolutely and utterly impossible to deliver through the vagina. Abroad the fixation operation from above had been generally discarded, simply because of the fearful dystocia it had given rise to. His own experience with the after-effects of that operation had convinced him that it should never be done; and while an entirely satisfactory operation for the correction of uterine retrodisplacements had not yet been devised, he believed that suspension by the broad ligaments, or, if that could not be done, anterior suspension by the intraabdominal route offered the best and safest expedients.

Dr. Hiram N. Vineberg said that after listening to the rather dogmatic statements of those who had preceded him in the discussion, he was inclined to take a middle ground. He did not think the gynecologist, in the treatment of any particular condition, should be wedded to any one system or method, and cases of uterine retrodisplacement were not infrequently observed which should be left alone entirely. For example, in women with nursing children in whom the uterus was small, perhaps two-thirds its normal size. Such cases were simply instances of lactation atrophy, and they usually got along perfectly well without having the position of the uterus changed. The same was true of another class of women, either married or unmarried, with a small and partially retroverted uterus—probably a congenital condition. Dr. Vineberg said he did not entirely agree with Dr. Goffe as to the functions of the uterine ligaments. He had time and again seen cases of completely retroflexed uteri in which the uterosacral ligaments were found to be in an entirely normal condition. Take, for example, those

cases which were the result of subinvolution. A month or six weeks after confinement the uterus, instead of being reduced to its normal size, still remained large and subinvoluted, but in spite of this it might remain in good position for six months or a year; then, when changes in the uterine tissues had occurred, retroversion would follow. In these cases the normal position of the uterus was maintained on account of the tissues of the uterus itself, and the speaker said he did not believe there was any particular ligament or set of ligaments that kept the organ in its normal relations. Certainly the round ligaments had nothing whatever to do with holding it in position. In some cases the uterus would remain in position after perineal rupture; in others it would not. It would depend whether this pelvic fascia of the cellular tissue surrounding the cervix had been torn away from their attachments by the fetal head crowding all the pelvic tissues in front of it. Dr. Vineberg said he did not quite agree with Dr. Marx that there was such a wide breach between the work of the obstetrician and that of the gynecologist. Most of the latter practised more or less obstetrics, and kept their cases under observation. He had operated on between fifty and sixty cases by vaginal fixation methods, and while, among those who had subsequently become pregnant, at least five or six had suffered from early miscarriage, there were quite a number that went on to a complete and uneventful pregnancy. He had heard of no instances of dystocia in any of his cases, although he had frequently asked his colleagues to inform him if they met with any. Certain cases, he thought, could be best treated by the vaginal route; others by the abdominal. In dealing with patients who had passed the child-bearing period, or who were not likely to conceive, and in whom the retrodisplacement was complicated by a large rectocele or cystocele, he had obtained his best results by doing a regular vaginal fixation. During the child-bearing period, on the contrary, he had entirely discarded the vaginal fixation operation, substituting instead suture of the round ligaments directly to the vaginal wall—an operation he had devised several years ago. This procedure could be carried out only in a limited number of cases, and when it was done any abnormal condition of the adnexa could be attended to just as well through the vaginal vault as it could be through the abdomen, even when there were adhesions of the sigmoid. The gynecologist, he thought, should be able to work from below if it was necessary. Coming to the abdominal route of treating retrodisplacements, Dr. Vineberg said his favorite procedure was to suture the round ligaments to the abdominal wall. By that method he could depend upon securing over 95 per cent. of permanent cures; he might add say almost 100 per cent. of anatomical cures. While he had had relapses after the vaginal operation and after Alexander's operation, he could only recall one or two cases in which failure had followed suturing the round ligaments to the abdominal wall. At least eight of the cases in which he had done that operation had become pregnant, and the progress of their pregnancies and their labors were normal in every respect. In some of his cases the patients went through two normal pregnancies and the uterus remained in good forward position. Of all the round ligament operations done through an abdominal incision the method he practised was the simplest; was attended with the least traumatism.

Dr. Leroy Broun said the uterus possessed two sets of ligaments, the true and the false. The latter were made up of folds of the peritoneum, and their duties, as supports of the uterus, were secondary to those of the true ligaments, which contained not only muscular tissues, but also dense, connective tissue. The true ligaments were the uterosacral, the uteropelvic, and the round and the ovarian ligaments. Dismissing the ovarian ligaments from consideration, the three others sprang from the uterus; they were composed of tissues of the same character as that of the uterus itself, and each one was attached to some fixed point—the uterosacral to the sides of the sacrum, the uteropelvic at the base of the broad ligament to the pelvic fascia overlying the internal obturator muscle, and the round ligament over an angle as it passes through the internal abdominal ring. The uterosacral ligaments were retractors, pulling the cervix backward and upward, while the uteropelvic ligaments helped to support the organ in an upright position. The round ligament had no influence upon the position of the uterus while that organ was in a quiescent state, since it is a lax cord while it is in this normal position, but it restrained the motions of the fundus with the filling and emptying of the bladder. The ideal treatment of uterine retrodisplacements, Dr. Broun said, would be not only to shorten the uterosacral ligament, which pulled the cervix backward, but also to take up the slack in the round ligament, which helped to restrain the excursions of the fundus of the uterus. Shortening of the uterosacral ligament alone had never given him very satisfactory results. The operation of shortening the round ligament through the external abdominal ring was very simple; it had entailed no death rate in his hands, and no hernia should follow. In doing this procedure care should always be taken to see that the fundus was well up, and that there were no intestines in front of it. The result of the operation was uniformly excellent, not only anatomically, but also clinically. The Alexander operation was applicable only to those cases in which the uterus was freely movable, and where there was no disease of the adnexa or appendix. The fundus of the uterus being large did not interfere with the excellence of the clinical results following this operation. Dr. Broun agreed with some of the speakers that it was a comfort to look into the abdominal cavity and see that the pelvic organs and appendix were in a healthy state; he, however, maintained that in uncomplicated retrodisplaced uteri with the symptoms of backache and bearing-down pains we were not justified in subjecting the patient to an abdominal section, when a simple procedure such as Alexander's operation would relieve all symptoms, and could at all times be relied on to give an admirably anatomical result in maintaining the uterus in an anterior position. He further called attention to the fact that there had never been reported any complications in subsequent pregnancies following Alexander's operation attributable to the operation.

Dr. Austin Flint, Jr., said that a uterine retrodisplacement could usually be traced to subinvolution of the uterus and its supports. When in that condition any unusual strain upon it might tilt the organ backward. One of the most common causes was straining at stool. Dr. Flint said that his experience with the pessary in these cases, used soon after labor, had been excellent. Before the sixth week the tissues were not quite firm enough to hold the pessary, but after that the insertion of the pessary, combined with a certain amount of postural treatment, would effect a cure in from 50 to 75 per cent. of cases. The form of pessary he preferred was a simple round ring. The postural treatment to prevent posterior displacement was commenced about three or four weeks after confinement, and consisted in having the patients turn on their abdomens morning and night, in order to give the large, subinvoluted uterus a chance to fall forward. Avoidance of straining at stool was also insisted upon, and tampons should be used much more frequently after confinement than they were at present. Nothing would drain a uterus more certainly after parturition than the glycerine tampon, and even in cases of long standing its use would minimize the degree of operation that might subsequently become necessary. Surgical treatment was the only curative method in the chronic cases, and of the various operations that had been advocated, that of Alexander was one of the most satisfactory in the simple, uncomplicated forms of retrodisplacement. It was not a difficult operation, and its results were uniformly good. In complicated cases the abdomen should be opened.

Dr. James D. Voorhees, in speaking of the preventive treatment of uterine retrodisplacements, said he tried to educate the patient to sleep on the stomach, commencing about four or five days after confinement, and also to take the knee-chest position for five or ten minutes each morning and evening. A large percentage of these cases could be cured by the proper application of a well-fitted pessary. Many women, Dr. Voorhees said, developed a retrodisplacement before becoming pregnant from overindulgence in athletic sports. In the radical treatment of this condition there were two operations that could be undertaken by the gynecologist with impunity, so far as their effect of future pregnancy and labor was concerned: One was Alexander's operation, and the other was a true ventral suspension, such as the Gilliam operation. He recalled a number of cases of uneventful pregnancies at the Sloane Maternity in women who had been operated on by the Alexander method or by ventral suspension. In one case the woman was successfully delivered of twins. It was after vaginal or ventral fixation that trouble was likely to occur. Rühl has collected nine cesarean sections after vaginal fixation. Dr. Voorhees recalled a number of ventral fixation cases where a miscarriage or premature delivery resulted. When labor started in the pains were apt to be irregular, the cervix failed to dilate properly, and many such women had to be delivered by forceps or version on account of uterine inertia. The first case of cesarean section ever done at the Sloane Maternity was on a young woman upon whom a ventral fixation for uterine retrodisplacement had been performed before marriage. Dickinson, Noble, and others had reported similar cases when cesarean section was necessary after ventral fixation. This major operation was necessary because the anterior uterine wall was bound down, and in the enlargement of the uterus during pregnancy it formed a hard, muscular tumor about the size of the child's head which blocked the pelvic brain. Another possible danger connected with the fixation methods was severe post-partum hemorrhage on account of the uterine inertia. Slow involution of the uterus was also likely to follow.

Dr. Augustin H. Goelet said that posterior uterine displacements were to be divided into three classes, namely, reducible retroversions and retroflexions, and fixed displacements of both kinds. The treatment, to be most effective, should be begun very shortly after labor or abortion, when the uterus and its supports were in a condition that would permit restoration to their normal condition. Non-operative treatment was applicable mainly to cases of freely movable retroflexed uteri. The retroverted uterus was seldom amenable to non-operative treatment, especially if the condition had existed for any considerable length of time. If the treatment was instituted sufficiently early after labor or abortion many of these cases would never require operation, and this should be impressed upon the family physician or accoucheur. In the application of a pessary to a retroverted uterus the fact should be borne in mind that the bar of the pessary presses against the uterosacral ligaments and tends to stretch them still further, hence preventing their retraction. The pessary was incapable of curing the displacement unless the underlying cause of the condition was corrected (namely, the pathological changes that the uterus and its supports had undergone), and for that purpose he had found negative electrolysis a very effective agent, applied through the canal of the uterus to the walls of the organ and its supports. Dr. Goelet said that movable retroflexions were almost always curable by means of a properly adjusted pessary and negative electrolysis. Movable retroversions were sometimes amenable to cure also by the same means, but fixed posterior displacements of both kinds demanded operation.

Dr. George H. Balleray emphasized the value of conservative treatment in these cases, and expressed the opinion that in uncomplicated cases of uterine retrodisplacement, whether chronic or otherwise, 25 per cent. could be cured by the application of a proper pessary. In speaking of the forces that maintained the uterus in its normal position, Dr. Balleray said he thought some support came from the perineum, and another factor was the retentive power of the abdomen. A frequent cause of uterine displacements was the wearing of corsets and tight skirts, which certainly tended to crowd the organ into an abnormal position.

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Burdett's Hospitals and Charities, 1906 Year Book of Philanthropy, and the Hospital Annual. By Sir Henry Burdett, K.C.B. 12mo, 1,055 pages, muslin. The Scientific Press, London, England. Price, 16, net.

Chemistry of the Proteids. By Gustav Mann, M.D. 8vo, 606 pages, muslin. Macmillan & Co., New York. Price, $3.25.

Reference Handbook of the Diseases of Children. By Prof. Dr. Ferdinand Fruhwald. Edited, with additions, by Dr. Thompson S. Wescott. 8vo, 533 pages, illustrated, muslin. The W. B. Saunders Company, Philadelphia. Price, cloth, $4.50; half morocco, $5.50, net.

Manuel Pratique pour le Choix des Verres de Lunettes et l'Examen de la Vision. Par le Docteur Scrini et le Docteur Fortin. 12mo, illustrated, 233 pages, flexible muslin. Vigot Frères, Paris, France. Price, 4 francs.

The Examination of the Function of the Intestines by the Means of the Test Diet. By Prof. Dr. Adolf Schmidt; translated by Charles D. Aaron, M.D. 8vo, 91 pages, illustrated, muslin. F. A. Davis Company, Philadelphia. Price, $1, net.

Affektivität, Suggestibilität, Paranoia. By Prof. E. Bleuler. 8vo, 144 pages, paper. Carl Marhold, Halle a. S. Price, 3 Mark.

The Medical Diseases of Infancy and Childhood. By Alfred Cleveland Cotton, A.M., M.D. 8vo, 670 pages, illustrated, muslin. J. B. Lippincott Company, Philadelphia.

The Treatment of Gonorrhea in the Male. By Charles Leedham-Green, M.B., F.R.C.S. 8vo, 151 pages, illustrated, muslin. William Wood & Co., New York. Price, $2, net.

Gynecological Diagnosis. By Arthur E. Giles, M.D., B.Sc., London, F.R.C. S.Ed., M.R.C.P., London. 8vo, 212 pages, illustrated, muslin. William Wood & Co., New York. Price, $2.50, net.

Nineteenth Annual Report of the State Board of Ohio for the Year 1904. 8vo, 618 pages, paper. The Springfield Publishing Company, Springfield.

Psychotherapeutische Briefe. Von Prof. Dr. H. Oppenheim. 8vo, 44 pages, paper. S. Karger, Berlin.

Clinical Applied Anatomy. By Charles R. Box, M.D., B.S., B.Sc., London; M.R.C.P., London; F.R.C.S., England; and W. McAdam Eccles, M.S., London; F.R.C.S., England. 8vo, 471 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $4.

Recent Advances in Physiology and Biochemistry. Edited by Leonard Hill, M.B., F.R.S. 8vo, 740 pages, illustrated, muslin. Longmans, Green & Co., New York. Price, $5, net.

Nature and Health. By Edward Curtis, A.M., M.D. 12mo, 313 pages, muslin. Henry Holt & Co., New York.

Chemistry of the Albumens. By B. S. Schryver, D.Sc., London; Ph.D., Leipzig. 8vo, 102 pages, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $2.

The World's Anatomists. By G. W. H. Kemper, M.D. 32mo, 79 pages, illustrated, paper. P. Blakiston's Son & Co., Philadelphia.

Third Treatise on the Effects of Borax and Boric Acid on the Human System. (With Diagrams.) By Dr. Oscar Liebreich. 4to, 70 pages, paper. P. Blakiston's Son & Co., Philadelphia. Price, $1.75, net.

Sex and Character. By Otto Weininger. Translation from the Sixth German Edition. 8vo, 356 pages, muslin. G. P. Putnam's Sons, New York. Price, $3, net.

Transactions of the American Gynecological Society for the Year 1905. Volume XXX. 8vo, 518 pages, illustrated, muslin. Wm. J. Dornan, Philadelphia.

Studies from the Rockefeller Institute for Medical Research. Vol. IV. 1905 Reprints. 8vo, illustrated, paper.

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery.	Montgomery	June 1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	July 2.
Arkansas*	J. P. Runyan, Little Rock	Little Rock	July 10.
California*	Chas. L. Tisdale, 530 California Street, San Francisco	San Francisco	August 21
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July 3.
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July 10
Delaware	P. W. Tomlinson, Wilmington	Dover	June 19.
Dis. of Col'bia	W. C. Woodward, Washington.	Washington	July 12.
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	October 17.
Georgia	E. R. Anthony, Griffin	Atlanta	October 9.
Idaho	J. L. Conant, Jr., Genesee	Lewiston	October 2.
Illinois	J. A. Egan, Springfield	Chicago	May 23.
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis.	May 22.
Iowa	J. F. Kennedy, Des Moines.	Des Moines.	June —
Kansas	T. E. Raines, Concordia	Kansas City	June 12.
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October 23
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	
Maine	Wm. J. Maybury, Saco	Augusta	July 10.
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 20.
Massachusetts*	E. B. Harvey, State House, Boston	Boston	July 10.
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June 12.
Minnesota	O. E. Linjer, 24 South Fourth Street Minneapolis	St. Paul	June 5.
Mississippi	J. F. Hunter, Jackson	Jackson	October 9.
Missouri	J. A. B. Adcock, Warrensburg		
Montana*	Wm. C. Riddell, Helena	Helena	October 2.
Nebraska	Geo. H. Brash, Beatrice	Lincoln	May 29.
Nevada	S. L. Lee, Carson City	Carson City	August 6.
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July 6.
New Jersey	E. L. B. Godfrey, Camden	Trenton	June 19.
New Mexico	B. D. Black, Las Vegas	Santa Fe	June 4.
New York	C. P. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo,	May 22.
N. Carolina*	Geo. W. Pressly, Charlotte	Charlotte	May 23.
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July 3.
Ohio	Geo. H. Matson, Columbus	Cincinnati, Cleveland, Columbus,	June 12.
Oklahoma	J. W. Baker, Enid	Guthrie	June 27.
Oregon*	B. E. Miller, Portland	Portland	July 11.
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburg,	June 19
Rhode Island	G. T. Swarts, Providence	Providence	July 5.
S. Carolina	W. M. Lester, Columbia	Columbia	June 12.
S. Dakota	H. E. McNutt, Aberdeen	Watertown	July 11.
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May, 1907.
Texas	T. T. Jackson, San Antonia	Dallas	June 12.
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July 2.
Vermont	W. Scott Nay, Underhill	Burlington	July 10.
Virginia	R. S. Martin, Stuart	Richmond	June 19.
Washington*	C. W. Sharples, Seattle	Tacoma	July 3.
W. Virginia*	H. A. Barbee, Point Pleasant	Charleston	July 10.
Wisconsin	J. V. Stevens, Jefferson	Madison	July 10.
Wyoming	S. B. Miller, Laramie	Cheyenne	June 6.

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Minnesota reciprocates, under certain conditions, with the following States: Illinois, Iowa, Kansas, Maine, Maryland, Michigan, Missouri, Nebraska, Nevada, New Jersey, Ohio, South Carolina, South Dakota, Wisconsin, Wyoming.

New York.—The University Regents on April 26 made the following appointments to the New York State Board of Medical Examiners: From the State Medical Society Dr. William W. Potter of Buffalo, Dr. William S. Ely of Rochester, and Dr. Maurice J. Lewi of New York, all reappointed, and Dr. Arthur W. Booth of Elmira, to fill the unexpired term of Dr. George R. Fowler, deceased; from the Homeopathic Medical Society, Dr. J. M. Lee of Rochester, Dr. J. W. Candee of Syracuse, and Dr. G. E. Gorham of Albany, all reappointed; from the State Eclectic Society, Dr. L. H. Smith of Buffalo, Dr. G. W. Sutton of Bath, and Dr. M. H. Nichols of Worcester, all reappointed. Miss Anna L. Alline of New York City was appointed a member of the State Board of Nurses' Examiners.

The American Confederation of Reciprocating, Examining, and Licensing Medical Boards met at Columbus, Ohio, on April 25. The following States are members of the Confederation: Michigan, Wisconsin, Indiana, Iowa, Kansas, Kentucky, Nebraska, Maryland, Georgia, Illinois, Ohio, North Dakota, Nevada, and Oklahoma.

Wyoming reciprocates, under certain conditions, with Colorado, Georgia, Illinois, Iowa, Kansas, Maine, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Carolina, Vermont, and Wisconsin.

Ohio reciprocates, under certain conditions, with Illinois, Indiana, Maine, Maryland, Michigan, Minnesota, Nebraska, New Jersey, and Wisconsin.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 12, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	340	153
Diphtheria	387	34
Measles	1068	32
Scarlet Fever	225	28
Smallpox	3	2
Varicella	90	.....
Typhoid Fever	27	9
Whooping Cough	56	4
Cerebrospinal Meningitis	32	32
Malarial Fever	.....	.....
Totals	2,228	294

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending May 12, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	Apr. 21–28	4	..
District of Columbia, Washington	Apr. 21–May 5	4	..
Georgia, Augusta	Apr. 2–9	5	..
	Apr. 23–May 7	4	..
Indiana, Indianapolis	Apr. 1–8	5	..
	Apr. 29–May 6	2	..
Louisiana, New Orleans	Apr. 21–May 5	26	..
Massachusetts, Boston	Apr. 28–May 5	1	..
Mississippi, Natchez	Apr. 29–May 6	3	..
Missouri, St. Louis	Apr. 28–May 5	1	..
Nebraska, Omaha	Apr. 28–May 5	2	..
North Carolina, General	Mar. 1–31	198	..
North Dakota, General	Mar. 1–31	3	..
Ohio, Cincinnati	Apr. 27–May 4	10	1
Oklahoma Ty., Oklahoma City	Apr. 21–May 5	31	..
South Carolina, Greenville	Apr. 21–28	1	..
Tennessee, Knoxville	Apr. 28–May 5	1	..
Utah, Ogden	Apr. 1–30	4	..
Virginia, Petersburg	Mar. 26–Apr. 26	6	..
Roanoke	Apr. 1–30	16	..
Wisconsin, Appleton	Apr. 28–May 5	1	..
Greenbay	Apr 28–May 5	1	1
La Crosse	Apr 28–May 5	1	..
Marinette	Apr. 21–28	2	..

SMALLPOX—INSULAR.

Philippine Islands, Manila	Mar. 10–17	2	2

SMALLPOX—FOREIGN.

Africa, Monrovia	Mar. 1–31	3	..
Austria, Trieste	Mar. 31–Apr. 7	1	..
Canada, Toronto	Apr. 21–28	1	..
China, Honkong	Mar. 17–24	19	5
Shanghai	Mar. 24–31	..	Present.
Germany, Bremen	Mar. 31–Apr. 21	2	1
Gibraltar	Apr. 15–22	3	..
Great Britain, Bristol	Apr. 14–21	2	..
New Castle on Tyne	Apr. 14–21	3	..
Greece, Athens	Apr. 14–21	..	3
Patras	Mar. 20–27	2	2
India, Bombay	Apr. 3–10	..	23
Calcutta	Mar. 24–31	..	224
Karachi	Apr. 1–8	34	17
Madras	Mar. 31–Apr. 6	..	46
Rangoon	Mar. 24–31	..	62
Italy, General	Mar. 22–Apr. 19	176	..
Mexico, Vera Cruz	Apr. 21–28	2	..
Netherlands, The, Rotterdam	Apr. 14–21	1	..
Spain, Barcelona	Apr. 10–20	..	7
Seville	Mar. 1–31	..	15

YELLOW FEVER.

Brazil, Rio de Janeiro	Mar. 18–Apr. 15	11	7
Honduras, Chaloma	Apr. 21	..	1

CHOLERA—INSULAR.

Philippine Islands, Provinces	Mar 10–17	116	101

CHOLERA—FOREIGN.

India, Bombay	Apr. 3–10	..	35
Calcutta	Mar. 24–31	..	31
Madras	Mar. 31–Apr. 6	..	1
Rangoon	Mar. 24–31	..	3

PLAGUE—INSULAR.

Philippine Islands, Manila	Mar. 10–17	1	1

PLAGUE—FOREIGN.

Australia, Freemantle	Mar. 3–24	3	
Geraldton	Mar. 3–24	2	1
Sydney	Mar. 10–17	7	..
Brazil, Rio de Janeiro	Apr. 1–15	3	1
India, Bombay	Apr. 3–10	..	782
Calcutta	Mar. 24–31	..	232
Karachi	Apr. 1–8	150	126
Rangoon	Mar. 24–31	..	86

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 21.
Whole No. 1855.

New York, May 26, 1906.

$5.00 Per Annum.
Single Copies, 10c

Original Articles.

HEART FAILURE AS THE RESULT OF DEFICIENT FOOD.

By ALEXANDER HAIG, M.D.,

LONDON, ENGLAND.

I often have the opportunity, as a teacher of diet, of observing the results of the diets I have myself prescribed, of those prescribed by others, and finally of quantities of food which I regard as insufficient. So common is the latter error that in the last few years I have seen many instances in which deficient nourishment had led directly or indirectly to more or less marked heart failure. It is known that a well-nourished patient may starve for thirty, forty, or even sixty days without serious signs of collapse if due care is exercised; the physiology of this apparently being that the essential structures—the muscles of the heart and cells of the brain—are nourished at the expense of the other structures from which a definite daily quantity is taken to provide their supplies of albumin. This may be called acute starvation, and if its duration is brief, it does little harm, because the heart muscle and brain cells are sufficiently provided for meanwhile. But if a condition of slow, steady, and constant deficiency of food is substituted, there comes a time when not only do the less important tissues suffer, but the heart muscle and brain cells begin to suffer with them to some extent. No doubt before this occurs many other tissues of the body, especially the muscles, have been largely drawn upon to provide the necessary nourishment. But after this has lasted for weeks, months, or it may be a year or more, there comes a time when the muscle of the heart participates in the general malnutrition and anemia, and this (as any physiologist may easily understand) is, or may be, a rather serious condition, because the actual continuation of life depends from moment to moment upon the entire functional integrity of that organ. I see not infrequently people who have from various causes—misunderstanding, wrong information, distaste for new foods, and so on—broken through my rules of quantity or dieted themselves in ignorance of the rudimentary principles of nutrition, and it thus comes about that I have observed some very marked cases of cardiac failure as the result of the debility and anemia produced by prolonged underfeeding. Knowing the opinion is gaining ground that it is desirable to live on a smaller quantity of albumin than has hitherto been generally acknowledged as sufficient, I feel it my duty to draw attention to these experiences because I believe that (owing to what I consider erroneous teaching) people may be led to underfeed themselves, and thus enter the danger zone where their hearts may either fail directly or do so when exposed to special strain or stress.

First, then, as to the signs of heart failure. There are so many instruments for measuring blood pressure and other circulation conditions that these signs are perfectly definite and distinct, and those who know how to look for them can scarcely miss them. In my previous writings I have been careful to point out that a distinct ratio exists between the capillary circulation as measured on the skin at the heart level on the front of the chest and the blood pressure; that given the capillary circulation rate in half seconds and the fact that the heart is normal in strength, it is possible to tell with very great accuracy what the blood pressure is, but that when the heart is weak this ratio is definitely and distinctly broken through. It would lead me too far to give full particulars here, but I may mention one or two of the common ratios and show how heart failure alters them. The capillary reflux on the front of the chest is commonly found to be six half seconds, and with a normal heart the blood pressure will be 120 mm. of mercury. If the capillary reflux is seven half seconds the blood pressure will probably be 130 or slightly more, and if the capillary reflux is eight half seconds it will probably be 140 or even 150. Now if the heart fails, you get a capillary reflux of seven, eight, or more, with a blood pressure of only 110 or 120, or at the most 130, and this is a very marked and easily obtainable sign of failure. The other signs are those long known, namely increased action of the heart, showing anything from 5, 10, 15, or even 20 or 30 beats extra in a minute, and some decided increase of the cardiac dullness as measured on the front of the chest, with more or less displacement of the apex beat to the left. There is also a prolongation or may be a reduplication of the first sound over the septum between the ventricles and to the right of the apex beat. I will now shortly mention one or two cases.

A man between 30 and 40 who had been strong and athletic, had adopted an altered diet for a year or two without sufficient care about quantities, being under the impression that if he ate to the limit of appetite he would probably take enough. This is an absolutely unfounded assumption; a man who has been accustomed to a diet of small bulk, such as meat, cannot all at once take the increased bulk of breadstuffs, rice, etc., necessary for his nutrition. After a year or more of this defective nourishment he one day exerted himself more than usual in lifting a heavy weight. He was seized with a sudden pain in the epigastrium and with more or less serious and prolonged collapse, from which, however, he gradually recovered. When I saw him a few days later he had all the signs I have mentioned: there was distinct quickening of the pulse, the capillary reflux pointed to the probability of a blood pressure of 140, but the blood pressure was only 100 to 110. His contention was that though for some months he had been underfeeding, he ought still to be able to perform feats of strength, but this was evidently not the opinion of nature. He was put on

an ample diet, while fluids were reduced to a minimum so as to diminish the driving work of the heart. Rest was advised and a slow increase of exertion, and it suffices to say that in the course of a few months he recovered and had good normal (or almost normal) blood pressure in relation to the capillary reflux. But there must be, I think, some doubt whether a heart which has been strained like this is ever quite as good as it was before.

Another case is that of an anemic woman who had altered her diet without sufficient supervision, and, owing to general delicacy of health and distaste for food decidedly underfed herself. On more than one occasion she had feelings of impending collapse. While in this condition and still defectively nourished, she became pregnant, and then during pregnancy she very unwisely undertook considerable exertion in house hunting and furnishing. Here again the result was strain on the heart, and throughout the later stages of the pregnancy there were very decided signs of this in more or less marked dropsy. No doubt pregnancy is always a strain on the heart, but what I wish to point out is that in this case the heart would probably not have failed even though severe exertion had been added on to the condition of pregnancy, if she had not been defectively nourished for some years.

A third case was that of a man who had placed himself on an approximately uric-acid-free diet without definite medical advice. He suffered slightly from rheumatism and deliberately underfed himself that the rheumatic poisons might, as he thought, be the more quickly eliminated. Here again all went fairly well for about a year or eighteen months, but at the end of that time he had marked signs of collapse after taking some depressing drugs and became extremely nervous, suffering also from insomnia. He then came to me and I found the following conditions: The pulse was 96, on some occasions being as low as 88 and on others as high as 100. The capillary reflux on the chest was 7 to 8 half seconds and yet the blood pressure was only 110 to 120. The first sound of the heart was prolonged and at times reduplicated, and the area of the heart dullness was slightly increased. The treatment here was the same as in previous cases, the three chief indications being to diminish the work of the heart, to increase its nourishment, and for a time the administration of a tonic.

If a patient in this condition has suffered from migraine the headache disappears while the heart is weak, for there is no longer power to keep up the necessary pressure; but it returns as the heart recovers itself. An interesting instance of this was a doctor who went some years ago to the Lahmann Institute, near Dresden, to try and get relief from headache. He was entirely successful in his quest, as the headaches took their departure in one or two weeks, but he got in their place very marked signs of heart failure, for which I had to treat him with considerable care a little later. In this case the blood pressure was only 90 to 100, with capillary reflux of 6 or 7. Later on, with the same capillary reflux, it rose as he got stronger to 120 and later even to 130 or 140. The pulse at first was 72, but it dropped one beat in every 5 or 7, and if these were added the rate would be above normal. From his history it appeared that during the "cure" he had lived largely on salads, which by their bulk prevented him from taking sufficient of the more nourishing foods; and it is evident that by so doing he merely exchanged a slight illness for a more severe one, as high blood pressure headache is rarely dangerous to life while heart failure is so.

So far as I know, these patients eventually recovered, but the signs were for a time sufficiently threatening to cause considerable anxiety to their friends and to their doctors. In another case I have seen more or less decided irregularity of the heart arrising under similar conditions of defective nutrition, but here the problem was complicated by the presence of some excess of uric acid in the blood, which, with a slight debility of the heart muscle, accounted for irregular action. I myself used to suffer from irregular action of the heart in bygone years when I had excess of uric acid in the blood, but in that case there was little or no quickening of the pulse, rather some slowing, and no marked difference between the blood pressure to be expected and the blood pressure I found. In one such case where the chief characteristic was irregularity of the heart action, the capillary reflux on the chest was 6 to 7 half seconds and the blood pressure 140, and though in this case anemia and defective nourishment had probably something to do with the matter there was no definite sign of heart failure, for the blood pressure was about normal in relation to the capillary circulation.

More or less alteration of the first sound of the heart is a common symptom in all cases of raised blood pressure, especially where the heart is beginning to fail; and where it is failing owing to defective nutrition we may find a very decided reduplication of the first sound over the septum of the ventricles.

These cases all occurred in people who had not underfed themselves from want of food but from misunderstanding, or ignorance of physiological facts, or, in some cases, mere indifference and inattention to details, as in the case of the busy man who is unable to give the necessary time to insure the right quantities of food.

Debility from underfeeding may come on so insidiously that it is often far advanced before it is in any way recognized by the sufferer. It is only when he compares himself as he was at some definite date—for instance, the ride of yesterday with the ride of last month and the relative fatigue—that he realizes he is probably not so strong as formerly. This condition is insidious also because, with the decline of strength, there is very often a decline of appetite, which leads to a further loss of both, and when in this condition and weaker than he suspects the sufferer undertakes some unwarranted or violent exertion, such as running for a train or lifting a heavy weight, there may follow a more or less decided collapse. A result somewhat similar to this is not infrequently produced by those who treat gout by low diet together with an excess of fluids, for the purpose of washing out urates from the body, and it is still more likely to occur if while attempting to flood out the poison, they do not stop its introduction in flesh, tea, coffee, etc., for the uric acid which causes the resistance in the circulation is thus constantly poured into the system, while the excess of fluid maintains a very high blood pressure and increases the work of the heart and its tendency to dilate.

There is also a problem of some interest in relation to a portion of our population—I refer to the condition of the poorest classes and the chronically unemployed—for if people who are well provided

with food occasionally suffer from heart failure from defective nutrition, how much more must those suffer who for weeks and months in the winter are on the verge of starvation, though not actually starving. This consideration explains, I think, a fact of some interest with regard to these people, since it is said by observers that after a certain length of time they "lose heart" and are then and afterwards practically unemployable, becoming chronic loafers, beggars, or thieves, or absolutely starving. I believe the condition of these men is probably akin to that which I have described as occurring in the cases which come under my notice, and that when they "lose heart" it means that the heart muscle is at last sharing with the other muscles in the general malnutrition. As the result of this the heart probably fails and dilates and is perhaps never again able to keep up the same blood pressure, to produce the same muscular nutrition, and the former strength of muscle and nerve or of will-power. No doubt if such a man were carefully dieted and rested for months, he would, as in the cases I have mentioned, return to his normal or approximately normal condition. These poor people, however, practically never have this chance, the most they can hope is that as spring comes round a small increase of work may lift them a short distance above the verge of starvation, and their hearts therefore never have an opportunity of completely recovering. Thus these men are permanently debilitated, lethargic, deficient in muscle and mind, and are just the people to be driven to the use of stimulants whenever they can lay hands on them. For debility and underfeeding, especially on wrong foods, create a craving for stimulants to replace even momentarily the feelings of strength. It is small wonder that in winter the public houses are full of those on the verge of starvation, though drink of course ultimately makes things worse and can but increase the debility and malnutrition.

It behoves us as physiologists to point out to the governments of our respective countries that when men and women remain for months at this starvation level, physiological change may occur debarring them from any further fitness for useful work, and that in permitting a section of our population to drop into these conditions we are condemning them to a moral and physical shipwreck of which they can neither avert the inception nor escape the consequences.

Another sign of deficient nourishment is anemia. The ordinary blood color of meat-eaters who drink tea and coffee is about .8 to .85,* while those who have lived for some years on correct diet obtain a blood color of 1.0 to 1.10 and upwards. Yet another danger signal is more or less subnormal temperature. The fire cannot burn up because there is a deficiency of fuel and consequently not enough to maintain the temperature of the body, which is generally from a degree to a degree and a half below normal. Underfed persons commonly have all these signs and symptoms together, and the patients who present themselves with failing hearts and abnormally low blood pressure, are also more or less markedly anemic with a chronically subnormal temperature. There are consequently plenty of signs of the condition under discussion, and it is unnecessary to fall into the error of mistaking it for a normal one. For these reasons I consider it dangerous for anyone to produce less than three grains of urea per pound of body weight per day, or to take less than the albumin requisite for this production, namely, nine grains per pound daily. Sooner or later all who attempt a lower standard develop anemia, debility, subnormal temperature, and, in some cases, added to these, various degrees of heart failure and collapse. The body weight to be used in this calculation is that of the original structure of bone and muscle; therefore, if several stones weight of adipose tissue has been added to this it should be deducted before multiplication by nine. Those who lead a decidedly active life may, however, require a little more than nine grains per pound per day, and they will generally find their appetite leads them to take a somewhat larger amount. On the other hand, the very sedentary, whose existence consists of some fifteen hours' daily resting, and who take only a gentle saunter once or twice a day, may require less than this quantity. But none, active or sedentary, should display constantly anemia, subnormal temperature, unduly quick pulse, and a wrong relation between capillary reflux and blood pressure, and all who on any diet become progressively paler and weaker with subnormal temperature, *even though there is no loss of weight,* are underfeeding and risking heart failure and a condition of debility from which it may be difficult to rescue them.

They are also (as I have elsewhere* pointed out) exposed to considerable danger of microbic invasion and therefore to boils or carbuncles, catarrh, influenza, tubercle, or diphtheria, and have no reserves of strength and endurance for times of stress or strain should these unfortunately come upon them.

In practice I give all adults who consult me nine grains of albumin per day for each pound of body weight, and though this is only a rough guide, it is decidedly better than none. But because it is a rough guide I watch also the temperature of the body, the condition of the blood, the ratio of the capillary reflux to blood pressure, and the other circulation signs above mentioned, and I look upon these taken together as safe and certain guides to a condition of satisfactory nourishment and nutrition.

Far be it from me to assert that there are no exceptions and that no one can live on less than nine grains of albumin per pound daily, but those who do so must demonstrate that all these conditions remain normal, week after week, month after month, and year after year, or they will fail to persuade me that they are not underfeeding and courting danger.

* Medical Record, August 26, 1905.

* It is necessary to add .3 to my old figures to make them comparable to present standards, thus .5 becomes .8. The present standard is about .15 below the color of normal blood and the other .15 is accounted for by my having worked with a color standard this much too dark.

To Remove Foreign Bodies such as calculi impacted in the urethra Schroeter advises the following procedure. If any urine can be made to dribble out past the obstruction the meatus is compressed with the fingers and the patient is directed to continue his efforts until the portion of the canal distal to the obstruction is well dilated; the fingers are then suddenly removed, and in many cases the foreign body will be expelled with the emerging stream. If no urine can be forced past the obstruction a ligature is placed about the penis on the vesical side of the obstacle to prevent its retreat toward the bladder, and the necessary dilation of the anterior urethra is effected by injecting water into it with a syringe; the expulsion is then carried out suddenly as before.—*Centralblatt für Chirurgie.*

SYPHILITIC LESIONS OF THE JOINTS IN HEREDITARY AND ACQUIRED INFECTIONS.*

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Syphilitic affections of the joints present many and varied peculiarities in their evolution, course, extent, and ultimate results. In the early stage of hereditary syphilis the gravamen of attack does not, as a rule, expend itself on the joints, but upon the shafts of the bone, and their terminal portions or epiphyses. In the growing bone the length is accomplished by true increase in size of the shaft or diaphysis into the cartilaginous layer which exists at its end between the terminal portion or the epiphysis. This part is called the diaphyso-epiphyseal junction, and it is here that in hereditary syphilis the morbid process is developed in any of the long bones. In the early days this lesion, known as osteochondritis, is the predominating morbid osseous change. As a rule there is no synchronous or complicating joint involvement, except in the parts where the epiphysis is very narrow and the synovial membrane very near or contiguous to the seat of inflammation. As a rule, therefore, we do not find articular lesions in recent hereditary syphilis. As the disease grows older we lose the early osteochondritic changes and observe features in the course of syphilitic osseous lesions which resemble those of the acquired infection. Then we encounter periostitis, osteitis, inflammatory and gummatous, with more or less typical synovitis.

In the acquired infection we find early and late joint inflammation or synovitis, which may be mild and transitory or severe and chronic. In the two cases which I now detail the condition of the knee-joint in early secondary and intermediary syphilis is well shown, and I think they can be accepted as typical in nature and course. The knowledge offered by these cases makes the subsequent development of more accentuated syphilitic joint lesions very easily understood.

Female, aged 22, never having had rheumatism or gonorrhea, nor had her family suffered from rheumatism, had the initial lesion of syphilis several years before, which was followed in a little more than a month by a roseola and a general papular syphilide, and severe rheumatoid pains. These manifestations yielded to treatment in about a month, and she had no other symptoms, to her knowledge, until two years after, when she complained at first of pains along the subcutaneous surface of the tibiæ, the pain being more severe in the left tibia. At the same time also she had pains in the vicinity of the larger joints. There was no febrile movement, and the pains were very much worse at night. In a short time she noticed that the pain became excessively severe in the left knee, and that, although it was somewhat painful during the day, it became of an excruciating character at night. When she moved the leg she said that the pain was not increased, nor did slight concussions, which brought the articular surfaces in forcible contact, cause any unusual uneasiness. At the same time she noticed that the tibia of the left side was more tender to slight than to firm pressure. The knee-joint gradually and slowly enlarged, the process being, however, unaccompanied by any appreciable heat. This effusion lasted several months, and then somewhat subsided, and finally was not to be noticed. The pain remained in the joint for some time, when it again slowly enlarged. The swelling was of an intermittent character, and within a month it could be observed, according to the statement of the patient, that the circumference of the knee varied within considerable limits. The swelling sometimes became acute, then again it would follow a chronic course. When the knee became acutely swollen, she observed distinctly that it was much more tumefied on each side corresponding to the inner and outer borders of the rectus tendon and corresponding borders of the ligamentum patellæ. During the whole time, which was in all six months, she was not confined to bed, but could walk with more or less difficulty, and did not use any local applications, but took some medicine internally.

When she came under my observation she complained of rheumatoid pains in the tibia and a swelling and pain in her left knee. Upon examination I found that there was considerable effusion into the joint, but with no tendency to flexion, however slight. The articular surfaces could be crowded together without pain, and when pressure was made upon the outer surface of the heads of the femur and tibia, a very slight pain was felt. Spontaneous pain was felt during the day, but worse at night. I could not discover, even though I carefully sought for it, any evidence of thickening of the synovial membrane described by Richet, though I thought that although there was no marked tendency to gummy deposits, the chronic course of the lesion might have produced that result; still it is very difficult, in the tumefied state of a joint, to determine this fact, and the thickening would necessarily have to be very considerable in order to be discovered through the integument. Taking into consideration the history of the case, I concluded that it was that form of white swelling described by Richet and Follin, as produced by syphilis, and placed the girl immediately upon antisyphilitic treatment, giving her twenty grains of the iodide of potassium, with the eighth of a grain of the bichloride of mercury three times a day. She used daily inunction of strong mercurial ointment. The immediate result was to alleviate the rheumatoid pains and allow the patient to sleep comfortably at night. Very gradually the swelling subsided, and in three months after, the knee had resumed its natural size, and locomotion, which had been slightly interfered with, was again perfect. During the whole time she had simply used internal and local treatment, and did not, although advised to do so, spare the knee at all. She remained free from any syphilitic symptom for fully three years, when she again had rheumatoid pains through the body, and in the fibrous tissue, with others of an osteocopic character along the tibia, which was slightly swollen upon its internal surface. She was again placed upon the same treatment as before, and very soon lost her pains, and the node upon the tibia subsided. She had also had fugitive pains in the knee and hip, but neither joint was at all impaired.

The lesion in the knee-joint of this patient was evidently in the synovial membrane, as evidenced by the effusion and pain; and from its distinct

* Read before theAcademy of Medicine, New York, in the Section on Orthopedic Surgery, January 19, 1906.

syphilitic history there could be no doubt that its origin was in syphilis. This lesion occurs late in the secondary or any time in the tertiary period, and is due to inflammation or gummy deposits, or both, beginning in the vessels in the synovial connective tissue. This deposit may be very copious, as shown by Richet, Follin, and Lancereaux, and then it will so much thicken the synovial membrane that the fact is readily perceived upon clinical examination. When the deposit occurs in the ligamentous fringes of synovial membrane of this joint, its integrity might be compromised if a proper treatment were not instituted. Follin refers to a case in which the deposit was so copious that it was mistaken for one of fungous disease of the joint, and a surgeon proposed an operation; but as an antisyphilitic treatment was adopted, the lesion in the joint was cured. There can be no doubt that, although in the tertiary period the lesion is a deposit of gummy material, the same effusion may be due to the simple inflammatory action of the syphilitic virus in the later portions of the secondary period, producing an effusion into a joint, in the same manner as it does in the synovial sheaths of tendons. This simple inflammatory action of the syphilitic virus, unattended with gummy deposit, probably also accounts for the rheumatoid pains, they being produced by inflammation of the fibrous structures of joints, muscles, or bones. Then in cases of the tertiary or gummy period we have a regular deposit; as a result of either the membrane may be thickened. The lesions are in the main readily amenable to treatment. The same lesion is said by Richet to coexist sometimes with an osteitis, but in the majority of cases there is no lesion of the bone near the joint, although it may coexist with periosteal thickening elsewhere, as it did in this case, and in others with true nodes. The symptoms of my case are similar to those considered by Richet and Follin, as diagnostic, viz., slow and intermittent effusion, dull pain, not increased upon pressure, but worse at night, and not materially increased upon locomotion, with absence of any change in the integument, and any preternatural heat. In cases observed by Richet, Follin, and Lancereaux, the lesion has always attacked the knee-joint. Other minor joints also are not infrequently attacked.

Case II.—A man, aged 36, had the initial lesion of syphilis many years before, which in due time was followed by regular secondary lesions. These latter persisted for about one year, when they disappeared and he had a respite for several years. In the interval he does not know that he had any cutaneous eruption, and did not suffer from pains. Later he was attacked by rheumatoid nocturnal pains in various parts of the body, which were very persistent. He had also mucous patches upon the lips, which yielded to treatment. Later he was again attacked by the pains, which finally located themselves in the shafts of both tibiæ. The patient described his suffering as being boring and terrific, especially at night. He came under my observation at this juncture, and was then suffering from pains of an osteocopic character in the tibiæ, upon which I discovered several large, hard nodes. At this time the pains had fixed themselves in these bones, and were not of the fugitive rheumatoid character. Besides these nodes I found that the right knee-joint was very much swollen, and there was evidence of considerable fluid in the joint. He stated that the knee had swelled gradually within two months, and that his attention was first called to it by the pain, and in a week or two he discovered that it was slightly swollen. There was then an entire absence of heat, and after remaining slightly swollen it gradually swelled again a little more, then remained a short time in that condition, and then swelled again; and when first seen by me the swelling was very extensive. Firm pressure upon the articular surfaces in any direction did not produce acute pain, but still gave rise to an uneasy sensation. Though the joint was so much tumefied, the patient, who was engaged in mercantile pursuits, went to his business daily, and hobbled around with the aid of a stick. The pain was of a dull character during the day, and was not much, if at all, aggravated by walking, but became intense at night. Careful palpation plainly showed that the synovial membrane was much thickened; this could be well noticed over the four cushions, or those more prominent portions of the tumor on either side of the rectus tendon above, and on either side of the ligamentum patellæ below. The knee was very slightly flexed. Besides the articular and osseous lesions he had an extensive and well-marked palmar psoriasis and a large mucous patch upon the left labial commissure. He had been taking, as I ascertained by seeing the prescription, five grains of the iodide of potassium, with about the thirty-fifth of a grain of the bichloride of mercury. I increased the dose of the iodide to thirty grains, and the mercury to one-sixth of a grain, thrice daily. He also kept a plaster of strong mercurial ointment on the parts continuously. The mucous patch was penciled with nitrate of silver, and the nodes rubbed every night with an ointment of iodide of potassium. The patient experienced immediate relief of his pains by taking the medicine, but fully four months elapsed before the knee-joint became much reduced in size. The nodes gradually subsided. The palmar psoriasis was especially inveterate, but finally yielded to the mixed treatment which I had placed him upon, and also to the topical use of an ointment of nitrate of mercury of one-half the officinal strength, with which was combined oil of cade in the proportions of two drachms of the latter to one ounce of the former. The patient, when I saw him last, was much improved, and he then passed from my observation for two or three years, when I found that his knee was in its normal condition, and had been so for nearly a year, and that he attributed it to the persistent use of the medicine which I had prescribed and of which he told me he had taken increased doses, so that he took about forty grains of the iodide and one-fourth of a grain of the bichloride three times daily. He had not had any syphilitic manifestations in the meantime. He never had pains of rheumatic character until after he contracted syphilis, and his family never was troubled either with rheumatism or gout, nor had he suffered from gonorrhea for many years prior to the appearance of the synovitis in the knee.

In this case the usual clinical history of syphilitic synovitis is well shown. The lesions in the bones and joints were more profound than in the first case, and it is probable that there was gummy deposit in the subsynovial connective tissue, but the synovial ligaments of the joints were probably not much infiltrated. The early and active antisyphilitic treatment probably modified the course of the lesion very much for

the better. The appearance of mucous patches in the tenth year of syphilis is interesting, as showing the inveterate character of these contagious lesions.

While in hereditary syphilis tuberculosis complications are very frequent in the bones, viscera, and the cerebrospinal axis, in the acquired disease this morbid symbiosis is far less frequent, and it is less prone to complicate syphilitic joint and bone structure early in their morbid course. As the disease becomes chronic, particularly when the health of the patient is deteriorated, the tuberculosis bacillus may appear on the scene and produce a mixed and virulent complication.

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SYPHILITIC ARTHRITIS.*

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In presenting the subject of syphilitic arthritis before you this evening, it was with the intention of showing:

1. That no doubt many of the cases of acute arthritis in congenital and acquired syphilis, occurring in what is known as the early second stage, are treated as simple rheumatism.

2. The failure properly to diagnose the true pathology of the lesion as syphilitic and treating it as such, may result in a later secondary invasion of the tubercle bacilli or other bacteria, with their comitant sequelæ.

3. That late secondary and tertiary arthritis may be polyarticular and bilateral.

In reviewing the literature of the past twenty years of American medicine, I am convinced that syphilitic arthritis has not received the consideration to which it is entitled, if the observations and statistics of the most eminent Continental observers are to be accepted as accurate, nor does there seem to be such relative proportion of cases as one would expect, if we accept (with allowance) the estimate of cases of new infection accredited by leading syphilologists of this city.

It is claimed by Sturgis, and indorsed by Bulkley and others, that we have 50,000 cases of new infection in the city of New York alone. Admitting that there is a relatively small percentage of offspring from these cases, if their sequalæ correspond to those on the Continent, what are these syphilitic arthritis cases that do occur treated for? It is claimed by Fournier that 39 per cent. of all cases of congenital syphilis have arthritis, and by E. von Hippel that 56 per cent. of all cases of congenital syphilis have arthritis. It is estimated by Schuller that 7 per cent. of all joint diseases in children are syphilitic.

In the late congenital joint manifestation and in the arthritis of late secondary and tertiary origin, we have another form of joint disturbance which is quite frequent in occurrence, but not often diagnosed, and bad results frequently attend the failure correctly to determine the nature of the process, which is often unsuccessfully treated for tuberculous arthritis.

Our actual knowledge of syphilis dates from the time of Columbus, to whose followers is credited the blame of introducing the disease into Europe, where it spread with great rapidity and virulence through the various European countries.

*Read before the Orthopedic Section at the Academy of Medicine, January 19, 1906.

Previous to this, and in the early writings, is abundant evidence of the existence of syphilis.

In an article by Parrott in the *Revue Scientifique* 1882, the author produces some incontrovertible facts in support of the antiquity of syphilis. Baldwin and Tarney ("Syphilis in Dentistry," page 16) say that upon the teeth the imprints of congenital syphilis are tenacious and characteristic. They often preserve their original appearance, not only during the life of the individual, but after death. No other disease, says Parrott, can produce them so that their existence justifies us in affirming that the subject, if affected with such remains, was a syphilitic. He then speaks of the lower jaw of a young Frank of the Merovingians found in a sepulchre at Brenor. The teeth clearly showed lesions such as are produced by hereditary syphilis, and hence this disease existed in France before the seventh century.

In the celebrated medical treatise, "Wei King," compiled by the Chinese Emperor Hoang-Ti, at a time which corresponds to 2637 B.C., there are descriptions of a disease which exactly corresponds to what we know as syphilis, and this treatise speaks of it as a very ancient disease, ancient 4,540 years ago.

The Vedas, the Bible of India, is a collection of writings, religious, literary, and scientific, the latter part being called Ayurveda. The beginning of the period of which the Ayurveda treats is lost in the immensity of time, but it is believed to end about 1000 B.C., or 2,900 years ago. It has many passages which treat of certain diseases whose identity with modern syphilis it were folly to deny.

The works of Hippocrates, written either by himself or his pupils, were composed about the middle of the fifth century B.C., for the Father of Medicine practised at Cos in the year 460 B.C. In Hippocrates' works there cannot be found any exact description of syphilis in the strict acceptance of the term, but there are hosts of allusions which cannot refer to anything else.

Galen, the Greek physician who was born at Pergamos A.D. 131, refers many times to lesions which cannot but spell syphilis, and especially does he speak of peculiar pains of the periosteum which were so deep and constant that the patient believed the bones themselves were the seat of the pains, which were undoubtedly syphilitic.

Pliny wrote upon diseases of the Romans which must be diagnosed as tertiary lesions of syphilis. The Bible is full of fairly accurate descriptions of syphilis.

As a result of venereal affection, joint lesions were known by Petrus Maetyr in 1488. The condition was also referred to by Alphonsus Feirus in 1537 and in the seventeenth century by Maiqugie and Fabie.

It is about fifty years ago that Richet ("Sur les Tumeurs Blanches") gave the first clear account of arthritis as a complication of syphilis. Later Oedmanson established the fact that a papillary synovitis with defects in the cartilage of a joint was of syphilitic origin. This fact was substantiated by Fruger, Falkson, Landner, Schüller, and others.

The varieties of congenital arthritis may be grouped under the following classes: (1) Simple synovial (which is most common). (2) Arthritis associated with syphilitic epiphycitis. (3) Gummatous synovitis. (4) Osteitis with synovitis. (5) Deforming arthritis.

The diagnosis of congenital syphilis mostly depends upon the following:

(1) Finding of the Spirochæta pallida.

(2) The parental history. In entertaining the history of patients, we must question the truthfulness, as there is often a great desire to hide early indiscretions, and we must bear in mind that many acquire syphilis innocently. According to

Fig. 1.—Case No. 6.

Buckley, in his private practice 50 per cent. are innocently infected; according to Fournier, 25 per cent.

(3) The skin gives us evidence, either from the scars of eruption, or the peculiar white, waxy color so characteristic of syphilis. In the lower half of the face there exists peculiar linear or streaked scars, or more properly pseudo scars, radiatory from the mouth and lips and extending over the upper lip, chin, and cheek, and give the face an expression of old age.

(4) In the eye we have an interstitial keratitis, the most frequent symptom of congenital syphilis associated with arthritis, between the ages of six and sixteen years. We may have a history of iritis which generally precedes, or is associated with early acute congenital syphilis, between the second and sixteenth months. In a report by E. von Hippel (*Münichener medizinische Wochenschrift*, 1903). out of thirty-two cases of congenital syphilis, the joint affection precedes keratitis. About half of these cases occurred between the sixth and tenth year. The fact that almost always the joint trouble precedes the keratitis is of great importance, inasmuch as by that we are deprived of a reliable sign in making a diagnosis. Edmund Fournier (*Annales de Derm. et Syph.*, 1904, p. 152) and some other French writers lay great stress on the findings in the fundus of the eye as an aid in the diagnosis of hereditary syphilis. Antonelli speaks of vascular changes and alterations of pigment which could only be the stigmata of hereditary syphilis.

(5) In the teeth we have certain notched defects of the inner upper incisors (*Selix Bel Klin. Woch.*, February 24, 1896). I have not used the term "Hutchinson teeth," as authors differ in their description of them.

(6) Labyrinthine, or central deafness, due to lesions of the auditory nerve, is found in children between ten and fifteen years, in congenital syphilis, which is the age of most frequent joint involvement.

(7) Ulcerative destruction of the soft palate should be regarded as syphilitic, and will aid in confirming a diagnosis of syphilitic arthritis.

(8) Enlargement of the spleen is also frequent in congenital syphilis.

(9) Syphilitic epiphysitis is characteristic of congenital syphilis, as has been described by Barlow, Fournier, Parrott, and Taylor. As to its pathology, we find at the juncture of the epiphysis and diaphysis an increased number of proliferating cartilage cells and retarded ossification of already calcified tissue, producing an area of irregular thickening, on section we find a reddish-yellow zone of degenerating cartilage cells running across the epiphysial cartilage. The vascular supply is either arrested or interfered with, and in consequence a low form of inflammation is set

Fig. 2.—Case No. 6.

up, and a layer of necrotic tissue formed. When the destruction of tissue is sufficiently great, it is at this point that separation between the epiphysis and diaphysis takes place.

(10) General lymphadenitis should excite suspicion of syphilis.

(11) Sclerotic atrophy of the testicles occurs in hereditary syphilis.

(12) We can confirm our doubtful diagnosis by a course of antisyphilitic treatment.

There is a class of cases that I wish to call attention to in congenital syphilis, similar to those described by Fournier (83), von Hippel (42), Hutchinson (20), Chilton (11), G. H. Dunlop, and others.

The first case I present then was a history of syphilis in the patient, together with other symptoms which can be accepted as syphilitic.

Case I.—Female, three and one-half years, has had a knee flexed and swollen, with a discharging sinus on the outer aspect of the left knee. The pus contained tubercle bacilli, according to examination previously made at a general hospital, corroborated by the Board of Health. The ankle on the same side was swollen and tender. Knowing the previous history of the parents, the child was placed on antisyphilitic medicine. The ankle

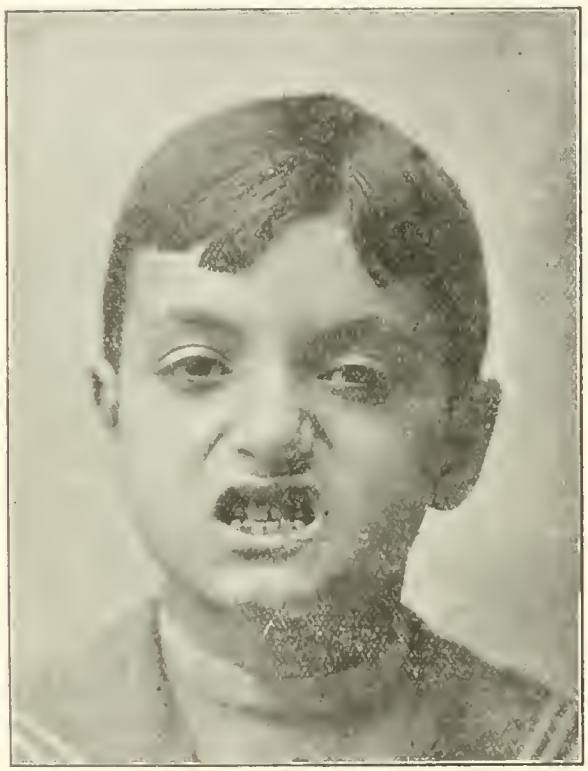

Fig. 3.—Case No. 7.

cleared up and the knee got well after one year, in straight position ankylosed. The mother was confined four and one-half years previously. The care of the first child and of the mother was turned over by me to Dr. S. Twinch. The child died in three weeks of acute syphilis. This is the first case that corroborated an opinion I had entertained for some time previous of tuberculous invasion of a syphilitic joint. It is generally regarded that syphilis and tuberculosis are antagonistic. But in my opinion there is no reason why active tubercle bacilli should not supplant attenuated *Spirachætæ pallidæ*.

Case II.—H. B., female, age five and one-half years. Patient had been operated upon for tuberculous glands, so-called, during my absence on my summer vacation, and on my return in September she was brought to me for what had been called a white swelling of the left knee. The child looked frail, skin white and waxy, had a synovitis of the left knee, slightly painful, with night pain occasionally. Knee slightly flexed, and swollen three-fourths of an inch larger than the right. Being familiar with the syhpilitic history of the father, I treated the patient with mercurials. The synovitis and swelling disappeared in two weeks.

The diagnosis was based on the father's history, the appearance of the child, and the improvement in the arthritis and adenitis under antisyphilitic treatment.

Case III.—Female. A sister of the previous patient was taken with an attack of arthritis in both knees. The family, living in Harlem, called in a physician at night, who diagnosed it rheumatism, and antirheumatic treatment was continued for three days, when the father, suspecting the cause, requested me to call. Under inunctions of 50 per cent. mercurial ointment, with 1-100 grain bichloride of mercury, every four hours internally for three days, the symptoms all disappeared; the joints were painful, the temperature varied between 99° and 102.5°.

Case IV.—S. E., female, age four and one-half years. Patient when presented had a swollen knee, slightly tender, that had been noticed three days previously. On rising, the child complained of tenderness, and the range of motion was limited to about 20°. The general appearance of the child, the loss of nearly all first teeth, the appearance of the eyes, together with profuse nasal discharge, prompted me to add mercurial treatment to the fixation in plaster. On April 14, 1905, I showed the patient at the Eastern Medical Society, when the synovitis of the knee was about well, but on the body was to be seen a papular eruption that had just begun to fade. The brother had been a patient at Bellevue and wore a jacket three years. I am of the opinion that in his case there was a syphilitic focus, which became tuberculous infected.

Case V.—Z., female, ten years old. Patient consulted me regarding a mass of broken-down cervical glands, which were opened and drained. She gave a history of two attacks of rheumatism while a resident of Buffalo. The left knee was swollen, the temperature was 101.5°, pulse 104. The father's syphilitic history caused me to treat the patient with mercurials, and she was salivated in forty-eight hours with 1-10 grain calomel, 3 grains bismuth subgallate, together with mercurial inunctions. The joint symptoms immediately cleared up. The diagnosis was based on the appearance of the skin, teeth, and general lymphadanitis, and the father's infection. Promptly responded to treatment.

Case VI.—Female, aged 14. Patient sent from the St. Elizabeth Home. Left knee flexed and swollen, not very tender, no family history. Had been operated upon for glands in the neck, which showed a long scar. Skin lesion about the nose and appearance of teeth caused me to make a diagnosis of syphilis. The knee was ankylosed with a long plaster splint from ankle to groin, made removable. Manual inunctions were given over knee and internal medication given. Cured in four weeks. Knee is perfect in outline and function. The diagnosis was based on the presence of scars on the face, the teeth, the eyes, and the presence of coryza. Prompt cure on antisyphilitic treatment.

Case VII.—Joe S., male. Came with mother to consult me, as mother wished to avoid an operation which had been advised by another doctor for a supposed tuberculous abscess of right

hip. A large mass extended half way down to the knee, soft, but not fluctuating. From the appearance of teeth, and mother's history, I concluded to try mercurial inunctions and internal mixed treatments. To my surprise the mass disappeared. Patient had worn a splint two years.

Fig. 4.—Case No. 10.

There is no shortening and he is now wearing a convalescing splint.

Case VIII.—Ada R., female, aged 13. Patient had been treated some time for swollen knee. I was consulted in May, 1904. Knee much swollen, red, but had an unusual range of motion for the amount of swelling; it was put in a removable cast for two months. A few weeks later it discharged pus from three openings. The swelling decreased about two inches and a decided thickening could be felt in the end of the femur and synovial membrane. Patient shown at the March meeting, 1905, of the Orthopedic Section; also at the Eastern Medical Society, April 14, 1905. The diagnosis was based on the family history. Treatment has also cured the condition of the knee, and there is little interference with joint function. Patient is still wearing splint.

Case IX.—Charles S., male, aged 6 years. Patient consulted me after the diagnosis of Pott's disease had been made at the Catholic Protectory and confirmed at one of the orthopedic hospitals in this city. Knowing the history of the mother, I placed the child on antisyphilitic treatment. The jacket was worn until last September, in all three years. Normal function of spine; no deformity. There still remains the enlargement of all inguinal and cervical glands.

Case X.—A., aged 10 years. Patient had an attack of fever, temperature 101.6°, with swelling of right knee. I knew the father's history, who was a syphilitic. I salivated the patient in three days by calomel and inunctions. The diagnosis was based on the father's history and the teeth. Patient's knee is now normal.

Case XI.—S., female, aged 22. May, 1896. Contracted syphilis from the father of cases II and III by lip infection. I was called to see her May, 1896, for supposed tonsillitis. The appearance of her throat, together with initial lesion on lip and enlarged cervical glands, made me sure of a diagnosis of syphilis, which so offended the patient that I advised her removal to Roosevelt Hospital. There the initial lesions and the right cervical glands were removed and antisyphilitic treatment was begun. Patient on leaving hospital discontinued treatment, and on May, 1898, she was taken with an attack of arthritis involving both knees and the right ankle. This, under mixed treatment, disappeared in seven days. The patient has had no recurrence of her arthritis, but she has continued with the treatment.

Case XII.—H. G., male. Case of recurring syphilis, involvements of wrist, treated by Dr. Taylor and later by myself. Patient has had relapses. Has history of locomoter ataxia, with frequent gastric crises. The ataxic gait has not increased for three years.

Case XIII.—Patient married, no children. Developed tender spot in spine. Wore jacket several years. Had three serious operations for pus in the abdominal cavity. This was due to necrosis and possible breaking down of the abdominal glands. The deep inguinal and iliac, the retroperitoneal prevertebral glands; as a rule these deep glands are involved in the latter period of syphilis and bear the same relation to visceral syphilis that the superficial ganglia do to the affection on the skin and mucous membrane. No knuckle has appeared. Drainage, mixed treatment, and electricity used. Sinus has closed and patient is able to go about and is well. It is said to be pathognomonic of spine syphilis that angular deformity does not occur, unless we

Fig. 5.—Case No. 14.

have tuberculous invasion. (Froechlich *Presse Médicale*, 1904, No. 46.)

Case XIV.—H. G., male, aged 23 years. Gives a history of acquired syphilis three years ago, at present has gummatous thickening of synovial sac and at the end of the right femur there is a

bony exostosis. Thickening about left ankle. The patient has improved under mixed treatment.

Case XV.—Male. Consulted Dr. Constable, of this city, for swelling on left side of neck. Dr. Constable had a pathologist make an examination of section removed from mass in neck, who made diagnosis of malignant growth; on this, the extirpation of lower jaw was advised. Patient then came under my observation. Had had an undoubted chancre of the lower lip. Under mixed treatment the growth disappeared. Patient did not live in the city and did not keep up treatment. On May 2, 1892, I was called to see the patient, who was in bed with a sore throat; he also had acute synovitis of the left ankle and knee, but they gave scarcely any pain. His mouth was filled with mucous patches. Temperature, 102.2°; pulse irregular. He said that he felt distressed in the region of the pericardium. After careful examination, I made a diagnosis of syphilitic pericarditis and myocarditis; cautioned him to keep quiet. I secured a nurse to take care of him, and prescribed inunctions and calomel. He improved rapidly and felt much better after 48 hours. On the night of the third day, while the nurse and his wife were looking out the window, he got out of bed and lighted the gas. The next day I called about noon and found him much improved in appearance, the condition of his mouth and throat and the synovitis of his knee, but cautioned him again about keeping quiet, as his pulse was still irregular and of poor character. Shortly after I left, the nurse went to the drug store, he suddenly sat up in bed and dropped dead. The mouth and throat had an appearance that is only produced by syphilitic mucous patches.

Case XVI.—Male, aged 43. Was seen by me first January 3, 1893. Had been treated for rheumatism of right knee and cellulitis of the leg. It was clearly syphilitic. He had lost all his teeth from his previous course of mercurial treatment. Although his synovitis cleared up, his ulcer from the broken down gumma did not heal until March 11, 1894. On September 23, 1894, owing to a cold, followed by a severe chill, his left leg and knee swelled and a large area of tissue broke down, extending from the ankle nearly to the knee. Under inunctions and internal medication, the synovitis cleared up in three weeks, but an ulcer as large as my hand remained, the tissue of his leg refused to granulate in. Iodoform and balsam of Peru and other stimulating applications failed to excite new granulation, but instead seemed to destroy tissue. After several consultations with Dr. Edward L. Keyes, to determine a means of encouraging granulation, a zinc vat was made, so that when the patient was in the sitting position, it would reach to the popliteal space. In this the patient placed both legs, and for nine hours a day retained them in water kept at a temperature between 101° and 103° F., by a gas stove. No one but a stoical German could have had the patience to continue this treatment for weeks; after the lapse of ten months continued persistent treatment to July 30, 1895, the ulcer healed, after which it was impossible to induce the patient to keep up medication. On November 15, 1898, I was again called for a synovitis of the right shoulder, with a cellulitis of the arm and shoulder. On the 18th, patient developed cerebral symptoms; on the 20th, Dr. Keyes again saw the case, with me in consultation, and confirmed my diagnosis of syphilitic meningitis. Patient died November 21, 1898.

As to the time of the appearance of congenital syphilis in the syphilitic parents bearing apparently healthy children, Fournier (*Journal de Médecine et de Chirugie Pratiques*) states that of 282 such cases, 251 occurred between the third and twenty-eighth years. In congenital syphilis the most frequent lesions are in the eye, while in the acquired form the most frequent lesions are in the skin.

In acquired syphilitics we may class the lesions as follows:

1. Arthralgia. This is not an arthritis, but pains about the joint.

2. Synovitis. This, with the accompanying pain, tenderness, and swelling, together with a high temperature, gives it the appearance of rheumatism, but there is no acid sweating or cardiac complications. It is described by Fournier, Finger, and Sherren.

3. Gummatous disease may appear first as a simple synovitis, later an irregular thickening of the synovial membrane may be felt, due to gummy deposits. In this form the pain is severe at night and the disease may be regarded as tuberculous.

4. We may have arthritis from extension of disease and thickening of the articular ends of the bones from the cartilage.

5. We may have it by extension of the gummatous process into the joints.

In the presence of *Spirochæta pallida* we have found an aid to the diagnosis of syphilis in the first and second stages that should aid us greatly in future diagnosis.

We are able to differentiate it from tuberculous arthritis, for which it is frequently mistaken, by the absence of pain, by the fact that it is often bilateral in its occurrence, and by the small amount of functional disturbance. When we find other evidence of syphilis, we should always give the patient a course of antisyphilitic treatment.

C. F. Painter, Hutchings, G. H. Dunlop, and others have reported the finding of tuberculous invasions of syphilitic joints. It is after a mixed infection that the joint inflammation fails to yield to mixed treatments.

It will be found that the synovitis, like other syphilitic manifestations, yield promptly to mixed treatment. I have used the bichloride 1-100 grain, with 2 grains of bismuth subgallate, in children; and 1-4 grain proiodide, with reduced iron 1 grain internally, combined with inunctions of 50 per cent. mercurial ointment and 50 per cent. crede ointment over the joint. We should lock up the joint in a plaster splint to rest the inflamed foci during treatment.

If the estimate of the relative frequency of arthritis in hereditary syphilis as given by Fournier, E. Von Hippel, the Hutchinsons, Chilton, G. H. Dunlop, and others is correct, we may ask: Do we have a similar proportion of such cases in New York, and if so, what are they treated as? In articles on rheumatism and arthritis in children they are not even mentioned in the differential diagnosis.

Failure to recognize the syphilitic origin of arthritis exposes the patient to the danger of secondary invasion of pathogenic organisms.

In conclusion I wish to say that if syphilitic arthritis is promptly diagnosed and properly

treated, a complete cure is easily effected, while if left untreated or improperly treated, incurable changes may result, or secondary invasion of other bacteria may occur.

CONSERVATISM IN THE TREATMENT OF SENILE HYPERTROPHY OF THE PROSTATE.*

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In considering the subject of conservatism, or, more correctly speaking, catheterism, in the treatment of senile hypertrophy of the prostate gland, I do not wish to be understood as being too ardent an advocate of the employment of the catheter to the exclusion of radical treatment properly applied, *i.e.* at the right time, but more to lay stress upon the idea that if this side of the question were more fully considered, I think operation would be less frequent, and we would perhaps see fewer of the cases which may be rightly said to be unimproved, still with frequent micturition or still using the catheter, or with incontinence or dribbling from a fistula, or even passing fecal matter through the urethra—probably a worse condition than before operation.

That the improved modern technique in prostatectomy has greatly enhanced the outlook for this class of patients cannot be denied, and to it a large number now in good health undoubtedly owe their lives; but this does not alter the fact that the reverse is sometimes the case, or that the study of the other side of the quesion has not likewise produced good results. Nor can it be denied either that the skill of operators varies as individuals, or that the individual operator varies in his results as he advances in experience, for it is evident that our second half-dozen prostatectomies are done somewhat differently from the first, and the third again somewhat differently from the second.

The great drawback to catheterism is its improper and difficult application. Among the working classes it is very evident that aseptic catheter life is, as a rule, impossible, and even among the well-to-do we readily recognize how difficult it sometimes is to have it properly carried out. Still, when possible, the difficulties at the beginning are usually surmountable, and as Escat says (in a recent report to the French Urological Association), "it is at least a method sufficient to assure patients of a tolerable life, compatible with their age." The bladder, and secondarily the kidneys, gradually become accustomed to its encroachments, often with a steadily diminishing risk of infection, though when badly used it becomes powerless to relieve the patient from the troubles from which he is suffering.

With these patients of the poorer walks of life, where their surrounding conditions make surgical cleanliness impossible (providing the symptoms and findings require it), operation must be considered much earlier than would otherwise be the case, by whichever method or route we deem best, while perhaps the bladder is still clean, when the conditions of course would be most favorable, or, if not clean, after a course of bladder irrigations and urinary antiseptics. But should the patient be of the well-to-do class, or should he be cleanly in his habits and intelligent, catheter life may be possible, and is permissible, but both sides of the question should be presented. He should not only be made thoroughly aware of the chances of infection of both bladder and kidneys, and should be given to understand that the use of the catheter will be continuous (excepting in certain cases), but also the dangers of operation—other factors, kidneys, and general condition, being equal—should be thoroughly explained. And still further, the chances of "failure to benefit the condition" should be gone into, for undoubtedly there are failures, or comparative failures, more, perhaps, than are generally admitted, and if they were always reported as such, considerable information would be gained. I have at present under observation a patient from whom I removed the lateral and median lobes some three years since, all of moderate size, though the median was proportionately much larger than the others. The immediate recovery was rapid, but although there are no more attacks of retention and there is no more residual urine, there are periods of incontinence at night, and micturition, although not so frequent as before, is still ten to eleven times in twenty-four hours. (I do not speak of the causes of these complications, but simply of their existence.)

Again, a patient of eighty-one years, who had had complete retention for ten years, and who had carefully and successfully catheterized himself during this period, whose general condition was excellent for a man of his years, but whose trouble had been aggravated by the formation of calculi, which upon instrumental examination, by cystoscope, and by the *x*-ray plate, proved to be of good size. The question was between removal of the stones, either by litholapaxy (which in his case would have been difficult on account of the enlarged prostate) or by lithotomy and removal of the prostate together with the stones, which latter course I thought indicated, as it was a septic bladder with chronic retention, while the general condition was good. I did a perineal operation. The result was good primarily, his recovery was rapid, and catheter life was discontinued, but, due probably to thinness of the bladder wall immediately behind the prostate where the stones lay, together with his age and poorly resisting tissues, a rectovesical fistula resulted, though at the time of the operation I could discover no injury to the rectal wall. Through this fistula fecal matter passed into the bladder, and from the bladder through the urethra.

Again, in another case, with moderate enlargement combined with calculi, in which prostate and stones were removed at the same time, there are still prolonged attacks of cystitis, with frequent and painful urination, although thorough examination fails to give evidence of any more calculi.

These can scarcely be considered as exceptional cases, and perhaps most operators can cite similar ones; and failures, as we know, are more instructive than are successes.

A class not infrequently operated upon, wrongly so I think, includes those with large, overdistended, atonic bladders, which have lost their power of contraction, a condition best ascertained, though not perfectly so, by observing the force of the stream through the catheter as it falls perpendicularly. These so-called large "silent bladders" do not often recover their tone, and after operation as a rule require catheterization as before. I have at present two patients belonging to this category. One is an excellent surgical risk, sixty-eight years of age, with kidneys which functionate well, with at present practically no obstruction at the neck of the bladder (a Nélaton being used), where the base, however, is depressed and a large pouch exists behind the bar, which is present, and where, although the lateral lobes are reduced to one-half their former size (one

*Read at a meeting of the Alumni Association of the New York Hospital.

side much more than the other) from decongestion due to regular catheterization, he is still unable to void one drop of urine without the aid of the catheter. Should his prostate be removed, or should a Bottini or Chetwood operation be performed, his bladder would still, I think, be unable to contract, he would still either be obliged to use a catheter or would suffer from incontinence, for it is rare that these cases of long standing recover their muscular contractility. The second case—a somewhat similar one—is that of a man who, though he is able partially to empty his bladder, never has less than twenty ounces of residual urine, and when I first examined him, I risked drawing off thirty-seven ounces. His prostate was large, the obstruction was great, and in all probability could have easily been removed, but the contractile power of the bladder was mostly gone, and although he might perhaps have recovered it to a slight degree, he too, I think, would have been left worse off than before, had he survived operation.

Somewhat similar to these, as regards the eventual outlook for muscular power, are the little irritable bladders with chronic cystitis, the small trabeculated and sacculated bladders, with partial retention, the "sclerotic bladders." In these, too, it is very questionable whether prostatectomy or prostatotomy would be of value, as the muscular layer has almost, if not entirely, disappeared, and has been replaced by the bands of connective tissue which we so easily see with the cystoscope.

Another important class contains those in whom we find a moderate enlargement, combined with a slight increase in the frequency of micturition, with a moderate amount of residual urine, one to two ounces, or perhaps more. These patients are in the first stage, or beginning of the second, in which condition they may remain for years, without ever reaching the stage of retention; for, as we know, there are but few old men who are not troubled with some increased frequency at night, and with some little inconvenience in completely emptying the bladder in the morning. With them it is generally agreed that not only is operation contraindicated, but likewise the catheter, for, as Thorndike says, "they can usually be made comfortable for months, and perhaps years, with proper attention to hygiene and urinary antisepsis." But when the obstruction has progressed farther, and the residual urine has increased from four to six ounces, it is evident that other means must be thought of—either catheterism, or operation if the case is not suitable for the catheter.

The old and weak frequently consult us, and often in such condition that they are physically beyond the point where we would care to risk operation (*i.e.* poor surgical risks). When the catheter is properly applied, these patients can frequently, and perhaps in the large majority of cases, be made comfortable, "sufficiently so to assure them of a tolerable life compatible with their age."

It must be admitted, however, that in many cases, catheterism, if persisted in, will undoubtedly lead to a fatal issue, much sooner than if radical operation were performed, *i.e.* in septic and poisoned cases, and yet there are so many types, and so many phases in the different types, that it is impossible to give an absolute rule, but each must be studied by itself, that we may decide when catheterism is permissible and indicated and when it is contraindicated.

As a rule the symptoms as presented to us are so characteristic, that a diagnosis can often be made from the history alone; on the other hand, as we know, there is not an inconsiderable number whose troubles come on very gradually or who, either from apathy or disinclination to treatment, do not seek relief until some severe disturbance in their general condition (the gastrointestinal troubles of the third stage) appear, when our attention may be entirely diverted from the local condition. Although this may not be of frequent occurrence, it occurs, nevertheless, and suggests a more intimate acquaintance with exact symptoms, especially as referable to the three stages, the boundaries of which it is well to bear in mind, and greatly in accordance with which our treatment is directed, for although treatment in general is symptomatic, we seek not only immediate relief, but must look also at the eventful outcome and chances for permanent relief.

The first stage, the prodromal, premonitory, or developmental period, is characterized by the fact that the bladder is still able to empty itself, but the patients complain of frequent desire to urinate (often urgent), with, later, difficult micturition and not infrequently polyuria (most marked during the night), while the power of expulsion may become lessened, with consequent absence of force in the stream, which often even then falls perpendicularly from the meatus. These symptoms are explained by the condition of *hyperemia* which exists in the prostate and submucous tissue.

In all forms the prostatic, periprostatic, vesical, and rectal plexuses are filled with blood, and any increase in this leads to an exacerbation of symptoms and *vice versa;* hence the trouble is apt to be more marked at night, or in those leading a sedentary life, and where constipation is a prominent feature. Tuffier claims that not only are all subjective symptoms referable to it, but in the large majority of the cases also the palpable enlargement per rectum, and this at least seems partly true in that class of cases in which, after systematic catheterization, the volume of the gland is reduced by what the French term "decongestion." "This condition of congestion and edema also explains the irritation, resulting in spasm of the sphincter and retention, when, the longer the retention the greater the congestion and edema, and the tighter the closure of the opening, which, if allowed to continue too long, not infrequently leads to paresis of the bladder from overdistention, which immediately places the patient in the second stage, although when properly cared for the first stage may last for months." (von Fritsch.)

It is thus evident that treatment should be directed toward relief of this congestion, and that our efforts should be directed toward bringing this about. All habits, mode of living, diet, and exposure which tend to cause it should be discontinued, and this alone will not infrequently put the patient in his normal condition.

Internal remedies, with the exception of cathartics to empty the rectum or urinary antiseptics, are probably worse than useless—an occasional sedative perhaps excepted; but of the two antiseptics most in vogue, urotropin and salol, I much prefer the latter (either alone or in combination with the former), with either a clean or an infected bladder, as in both types it usually tends to relieve irritation, often to a very marked extent.

A form of treatment to which I think too little attention has been paid, to be recommended, however, only in the glandular variety of enlargement and more particluarly in the early stages, is massage, or pressure on the prostate, to endeavor to lessen congestion, to empty the follicles which are often still at fault, as the remains of an old prostatitis, and, if not too late, to stimulate muscular con-

traction. In the fibrous forms, however, this is not only of no use, but often adds to the irritation. Again, the passage of a large-sized steel sound, if possible, not only often acts in the same way, but also enlarges the bladder opening itself.

How abdominal massage can lessen the local congestion, excepting by stimulating the general abdominal circulation, or by increasing peristalsis, and so emptying the rectum, it seems difficult to explain, but it is a fact nevertheless that it is of considerable value in lessening painful and frequent micturition.

With the advent of retention, however, the catheter is bound to come into play, perhaps temporarily, perhaps permanently, unless radical treatment is decided upon; and, on account of the dangers and risks involved in its use—infection, false passages, hemorrhages, etc.—and from the fact that the surgeon in consequence must assume considerable responsibility, argument is made in favor of the so-called "prophylactic operation." We know, however, that patients are submitted to the catheter for years and die eventually of some disease having no connection whatever with the genitourinary organs; and, as we have seen, a large number of old men of the first stage never reach the point where they are obliged to use the catheter, but where regulation in their methods of living and hygiene relieves local congestion and places them again in a comfortable condition. Certainly with them a prophylactic prostatectomy would be manifestly improper. But sometimes this is not the case, and following an acute congestion there may be an acute retention. Clean catheterism can place these patients again in the first period, after which it may be abandoned, and they may be left to their ordinary vocations, the wiser for their experience. I do not think it, therefore, justifiable that any operation (prostatectomy or prostatotomy) should be performed at this period, at least, the premonitory, as it would be for the relief of a condition which may never come or for accidents which may never happen.

In acute complete retention, catheterization is often an extremely difficult undertaking, requiring great care, both in the choice of instruments and in their introduction. For the latter, considerable information may be gained, not only by the usual rectal examination, but by exploration of the urethra either with the silk bougie à boule, as von Fritsch recommends, or, better, with the same instrument arranged as a fine instillator (the instillator of Guion), through which a weak solution of cocaine or cocaine and adrenalin can be injected—often with great advantage—into the prostatic portion, to promote the "decongestion" and shrinking of the superficial parts, which often facilitates the passage of the catheter afterward.

Should it be impossible to pass the catheter, our best immediate resource is aspiration, but not too long delayed, while waiting for the occasionally favorable action of hot sitz baths or the impossible action of drugs, for if the distention becomes too severe and too great, partial paralysis of the bladder muscle is apt to occur, which may never again recover its tone.

With the advent of bladder insufficiency and residual urine, the second stage is reached. This may develop slowly, or be the result of an acute retention, but as soon as the insufficiency causes residual urine of from three to four or six ounces, after the milder means have been used and have failed, the catheter is indicated; sometimes we may then be rewarded by a return to the first period, and when not, we can at any rate avoid the third.

Acute retention may occur at any period of the "prostatic age," with or without previous symptoms, or simply as one of a number of recurrent attacks added to a chronic incomplete retention, and when the latter, it must be classed with the chronic cases.

Shall we remove the prostate at this period?

Catheterism, though impossible in a large number of cases, may in others definitely reestablish the urinary function for many years, no matter what the volume of the prostate, and with it, even at advanced age, micturition will be reestablished in a comparatively few weeks, if the retention has not been allowed to exist too long, causing extreme dilatation, with consequent paralysis or partial paralysis of the detrusor muscle. Neither the age of the patient nor size of the prostate indicates whether we are starting with a chronic retention or not, though in this light a small prostate can be regarded as more favorable than a large one.

Impossible catheterism is exceptionally an indication for operation, but if the prostate is infected, (*i.e.* if an abscess has formed), if the previous micturition has been unendurable, with a rebellious cystitis, and these cases are rare, operation must be considered. (von Fritsch.)

Prostatectomy has given good results, as we know, but we take the chances of complications and death, especially so after a partial operation; is it fair to take these chances? I hardly think so; at least, catheterism should be given a chance of doing all that it can before radical intervention is decided upon.

Suprapubic cystotomy has been tried, and with advantage in those cases in which catheterization is difficult or impossible, or on account of the dangers of false passages, hemorrhage, and infection, but if the bladder is clean to begin with, it often becomes infected before the fistula heals, which usually happens when the tension and swelling of the prostate are reduced, and the urine resumes its natural passage. Poncet, whose statistics on this subject are, I think, the largest (though not absolutely conclusive), gives 37 out of 39 aseptic cases as healed, but among 29 patients with acute infection, 16 died, and among 46 with chronic infection, 13 died; while among 34 in which urination through the urethra was not regained, the fistula was permanent. Although other operators show a better mortality percentage, I do not think it a warrantable procedure, except as a preliminary drainage for prostatectomy, either from above or from below, or in very elderly and feeble individuals, or when the bladder is paralyzed, and systematic catheterization is too difficult or is impossible for any reason.

The period of incontinence from continuous distention, the third stage, is the most important and the most dangerous one we have to deal with, with its harmful consequences upon the kidney, with sometimes almost constant strangury, increased at times by enormous polyuria from backward pressure, irritation, and hyperemia of the kidney substance; and when this causes absorption by the blood of toxic substances, with also the well-known picture of intermittent fever, gastrointestinal troubles, and cachexia, which Guion says is due to both a urotoxemia and a urosepsis. Should this not have gone too far, should the changes in the kidneys not be too far advanced, catheterization is often able to place patients back again in the second stage. But with the first few attempts especially, particular care must be observed, as they are old men with lowered vitality, in whom too rough or too prolonged urethral manipulation is liable to be followed by an increase of septic symptoms; while at the same

time the precautionary measure of but partially emptying the bladder, or, better still, of gradually refilling it with a weak silver or boric acid solution, should not be disregarded, for not only is there danger from hemorrhage and shock, but also, should we not be dealing with a septic case, these bladders, when emptied entirely, creating a so-called vacuum, are much more prone to infection than when partially filled, perhaps on account of the thinness of the walls and lessened resistance from inside, permitting an easier entrance of germs.

In uninfected cases, at first at least, the risk of infection should be reduced to its minimum by the least number of catheterizations possible; then after a time the bladder becomes acclimatized, so to speak, and the danger is less, while at the same time, the congestion and edema having become less, the residual urine is not so great and the necessity for frequent interference is less urgent. However, notwithstanding careful and methodical treatment, the enlargement may not decrease, or it may steadily increase, with or without infection, notably in the fibrous or scirrhous form; hence sometimes a chronic incomplete retention will become complete.

In chronic retention the differentiation between infected and uninfected cases is most important.

If the case is aseptic, I think catheterism is as a rule preferable to operation, for although patients are especially vulnerable at this period, we can often get over the crisis without infection; though it is but right, also, that the question of prostatectomy should be considered; and it is just here that the difference of opinion is most marked as to which is the more justifiable course. It must be admitted that the lesions and local troubles due to distention do not contraindicate prostatectomy, and that the operation protects the urinary apparatus from further absorption besides avoiding septic infection, acute pyelonephritis, and acute prostatitis, but whichever way we decide, aseptic catheterism at any rate often places the patients in good condition, either preparatory to operation or not, though we must also remember that we run the danger of infecting a clean bladder, in case we do decide to operate. Age, social condition, vesical contractility, general condition, and state of the kidneys, must necessarily enter largely into our making a decision.

If the retention is incomplete (100 to 300 c.c.), the case is usually less grave, the urinary intoxication is less; and since there is no marked distention of the bladder, there is none of the kidneys, and the chances for either catheterism or operation are better.

If the case is septic, and especially if it has been so for a long time, clean catheterism seems often powerless to eradicate the general and local effects of previous careless treatment or long-standing infection from any source; and although the catheter, and especially the retained catheter for a short time, should and does relieve the symptoms (retention, infection, pain, cystitis, and hematuria) in many cases, there are also many where it fails, and then operation is not only justifiable, but it is our safest and best recourse, providing age, general condition, and kidneys permit. It also cures the retention, pain, and infection, besides the sometimes persistent hematuria, and in this hemorrhagic form, especially when the kidneys are but slightly affected, Albarran claims that the best results are obtained. In acute renal infection, the immediate risks contraindicate an urgent operation, but in general the rule is good that "where conditions of resistance are sufficient, prostatectomy is indicated."

The size of the prostate itself really gives us but little information as to whether we should operate or not, for some patients urinate well when it can be called enormous (although this is exceptional), while others very poorly when it is small; and while a large gland may be considered more favorable for operative success, the small one may mean that we have a poorly contracting bladder.

During both the second and third stages, or, in general, the older a patient becomes the less frequently he has recourse to the surgeon, but the infection may advance step by step, when suddenly some accident occurs, catheter and antiseptics are not well borne, some damage is done, and we are obliged to operate; at the same time, the greater the urotoxemia and urosepsis, the less easy it should be to decide upon or continue catheterism, for in very pronounced cases of this character it may rapidly bring on fatal ending.

A mild grade of inflammation is not of great importance, or, as Tilden Brown says, may be of an advantage, as it renders the bladder less sensitive, "so that the little slips that occur in the technique are not liable to be followed by the more serious results of infection that come to a bladder unaccustomed to rough handling."

Rovsing, in his discussion at the recent International Congress of Surgeons, insisted that catheterization should *always* be given a thorough trial first, that even when hypertrophied the prostate is a useful and important organ, and should not be sacrificed without compelling reasons, while the question as to whether to condemn the patient to catheter life or to remove the necessity for it by operation he thinks should be decided by the condition of the bladder muscle, which, if completely paralyzed, indicates the catheter, but if still functionally sufficient, operation. He is convinced that prostatectomy is done too frequently, and that too little attention is paid to the seriousness of the operation.

Not taking into account those who have an inherent tendency toward conservatism in general, or those who, on the contrary, prefer operating when possible, I think as we advance in our knowledge of this trouble, and are able to weigh results—and not the mortality—of radical treatment (as we are apt to do), compared to the conservative side of the question—it is apparent that the latter is often considerably neglected, and that many cases have been operated upon when results have not justified the means, for it is the condition of the patient after operation which must be looked upon as the result, and not the fact whether he lives or not.

But when the crucial period is present, when it is evident that the milder means are no longer sufficient to maintain the health and comfort of the patient, when operation is demanded, the findings in the case must guide us as to choice in procedures, remembering that it is an operation not to be too lightly urged, nor at the same time put off too long, as the mortality is largely dependent upon the condition of the patient (the state of the kidneys and general condition being the principal guides). Uremia we know is the most frequent cause of death, about equally so after all operations, according to Watson's statistics, but although most important, the condition of the kidneys is the most difficult to fix. Slight renal lesions are not a contraindication to prostatectomy, but (as Albarran says) "they are even benefited by it, and even with very marked lesions, good results have been obtained."

It is an easy matter to quote statistics, to prove that the combined mortality of the different operative procedures has been reduced to 5 or 7 per cent., and we can all show patients who, after prostatec-

tomy, now lead a comfortable life, as compared with a miserable existence before; but those facts do not fully answer the question whether it is so frequently necessary or not; besides, figures could also be quoted to prove the value of conservatism.

It has been said that "the ideal operation would be one which completely removes the obstruction, and at the same time does not kill the patient." To this might be added "or when it does not leave the patient as badly or worse off than before." Excepting by extremists, I think it is now recognized that no one method is best, or applicable in all instances; that when the middle lobe is mostly at fault and is unduly enlarged upward, even though the lateral lobes are well involved, the suprapubic route is the one of choice, and that when the lateral lobes are chiefly involved, they are more easily reached from the perineum; while when we have simply a bar or a contracture at the neck, with the bladder base below the urethral opening, the obstruction is perhaps best relieved with the galvanocautery, either by the Bottini method or better still by what is now known as Chetwood's modification, by means of which the part to be operated upon is under direct control of the finger, and in which the perineal opening gives an opportunity for direct drainage.

To sum up:

1. Catheterism, properly applied and at the right time, renders unnecessary many operations, without which patients would have been as well, if not better off.

2. Modern technique and advance in the knowledge of prostatectomy make operation now justifiable which previously would not have been, with the former statistics and results to guide us.

3. In moderately enlarged prostates, with slightly increased frequency in micturition and a moderate residuum, no local treatment is necessary, excepting it be massage, and then only in the glandular form.

4. In patients of the poorer classes, or where aseptic catheterism is practically impossible, operation must be considered much earlier than where this is not the case.

5. Prophylactic or preventative prostatectomy cannot be recommended, as it may be a useless operation, looking toward an infirmity which may never arise.

6. In the second stage, with a residuum of four ounces or over, after milder means have failed, the catheter is indicated; then sometimes patients will return to the first period, or if not, we can at any rate avoid the third. With large residuum and sclerotic prostate, it may be advisable to operate.

7. In acute retentions we must get all we can from the catheter before intervention, as catheterism, though impossible in a number of cases, can in others definitely reestablish the urinary function for many years, no matter what the state of the prostate.

8. In the third stage, if not too far advanced, catheterism may place the patient in the second stage again. But if impossible or inadvisable for any reason, operate, if kidneys and general condition warrant it.

9. In the large non-contractile so-called "silent bladders," as also in the very small trabeculated and sacculated bladders with chronic cystitis (the sclerotic type), prostatectomy or prostatotomy is not as a rule warranted, as the patients are usually left as badly and sometimes worse off than before.

10. In chronic retentions, if the case is aseptic, catheterism is often preferable, as we can frequently get over the vulnerable period without infection, though at the same time the outlook after prostatectomy (as also its risks and complications) should also be laid before the patient. But if the case is septic, and has been so for some time, clean catheterism seems powerless to eradicate its effects, operation is indicated.

36 West Thirty-ninth Street.

GONOCOCCAL INFECTION IN WOMAN.*

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Far more than the laity realizes, it is to the credit of medicine that its aim is the prevention of disease. In so far as the family, and this is at the basis of the State, is benefited, just so far the income of the physician is depreciated. An unselfish aim, surely, and yet a most noble one! Look backward, those of you who are able, and accompany the surgeon in his hospital rounds. If he sees not laudable pus he is puzzled; he expects hospital gangrene, and he is not surprised at the development of septicemia or, worse still, pyemia. Wander to the obstetric ward and see the constant elevation of temperature significant of what was termed milk fever. Scan the statistics of those days and you find a mortality rate of 25 to 40 per cent. following the performance of that physiological act—the bringing forth of a child. Diphtheria is a scourge, yellow fever is incurable, measles and scarlet fever are rampant, and the physician of the day we are envisaging must have felt with my revered teacher, Oliver Wendell Holmes, that there were many pursuits full of more certainty as regards result than medicine. The scene shifts to the present, and if the surgeon on his rounds finds pus he questions himself and his assistants. The puerperal mortality has been reduced to within a fraction of 1 per cent. Through the use of antitoxin diphtheria has become almost a benign disease. Resort to segregation limits the spread of scarlet fever and measles. Yellow fever is almost unknown in localities where formerly it was endemic. All these results we owe to our present knowledge of the causal factors of these diseases, and to the stringent application of the old adage, "An ounce of prevention is worth a pound of cure." In view of all accomplished, is it not surprising that a disease which, all things considered, is responsible for more suffering, if not for more deaths, than any of those casually mentioned, should, in these enlightened times, be viewed with apathy and be tolerated in a civilized community? Not so many years ago it was ordered by the Board of Health of this city that tuberculosis should be made a disease returnable even as were measles and scarlet fever. You all remember that this was received rather unfavorably by many in the profession, and yet it must be granted that the wisdom of such decree has been amply borne out by the fruits. There is a disease in this community which bodes greater ill to the family and to the State than even tuberculosis (the white plague), and yet, in public its name is shunned and in executive circles it is even as though it did not exist. This disease is gonorrhea, and it becomes my province to show to-night just what the gonococcus means to the family and therefore to the State. It may be I shall speak emphatically, possibly dogmatically, but if so it is from strong conviction, the result of seeing scores of homes wrecked by this germ, the result of contact with scores of women weeping for the children they could not have—not knowing why, the result of the

*Read before the New York Academy of Medicine, April 5, 1906.

knowledge that fully 60 per cent. of my operative work among women would not exist were it not for this germ.

To the late Emil Noeggerath of this city belongs the credit of first directing the attention of the profession to the destructive effects on the organism of the gonococcus. When his paper on latent gonorrhea was read and published his views were received with skepticism and considered as vagaries. A few years later Neisser differentiated the coccus which bears his name, and to-day, thirty years after Noeggerath, the profession is a unit in accepting his views. It may be maintained that there is no germ of more malevolent nature or harder to kill. It spreads to every organ of the body, affecting in particular mucous surfaces and, like the polar bear, hibernates so to speak, awakening and becoming active after years of slumber. Even the virulent streptococcus is kinder, for if it does not kill, it disappears from the organism. In woman, owing to the peculiar anatomical structure of the uterus, it lies dormant under the mucous membrane to become active under sexual congestion, possibly, or during the puerperium. Once the germ has extended above the internal os I think I may state, without fear of contradiction, it cannot be eradicated and thence it is a simple step through mucous continuity to fallopian tube, to ovary, to pelvic peritoneum. There result endometrial inflammation, salpingitis, oöphoritis, pelvic peritonitis, with their sequelæ—sterility and the operating room.

To bring the matter home to you: It has been estimated that about 75 per cent. of males have had gonorrhea once at least, and fully 30 per cent. carry the latent germ to the nuptial couch. About 45 per cent. of sterile marriages are due to the gonococcus. About 60 per cent. of pelvic inflammatory disease requiring operative interference is due to the gonococcus. Lastly, about 30 per cent. of blindness is traceable to this arch enemy of mankind. These statistics are the mean obtained from the reports made by many observers. Is it a wonder, therefore, that the gonococcus holds rank scarcely second to the tubercle germ? And yet, witness the activity characteristic of the crusade against the latter and the criminal apathy displayed where the former is concerned. The saddest part of the rôle played by the gonococcus is that it affects the innocent—the woman and the child. What is the reason for this apathy?

At the outset, gonorrhea in its true significance is not familiar to the laity. It is looked upon as a simple matter, such as a catarrh of the nose would be. It is the fashion for the young man to boast of the number of times he has had it. The very name is tabooed in public speech. It hides under the term "secret" disease. The physician aids the laity in concealment since he is not compelled to report it to boards of health, as he is such an insignificant affair in comparison as measles. In short, the disease is tolerated only because of ignorance on the part of the laity of its import. Let a vessel bearing cholera anchor off this port, let a few cases of yellow fever or of smallpox develop in this community, and great is the alarm. And yet in this community a fouler, a deadlier, a more insidious disease exists, which rarely kills of itself, but maims the innocent, and the public is indifferent. And how is this disease spread? Your answer is through prostitution largely, and I am in agreement with you, only I wish you to remember that it is *man* the prostitute rather than *woman* the prostitute who spreads it. Spasmodically, well meaning reformers start a crusade against prostitution, with the result that the women are driven from pillar to post or sent to reformatories, while the man is set free to walk at will and to infect other women too often in our very homes after marrying the daughters they swear to protect and proceed to inoculate. The code of morals is different for man and for woman. It should be the same.

Other reformers write letters on race suicide, dwelling only on that phase of the question which relates to methods resorted to for the prevention of conception, in forgetfulness and in ignorance of the fact that the true meaning of race suicide is that woman cannot conceive because she has been inoculated with the gonococcus by man, who is only too ready to point his finger at her and say, as old Adam did, "It is thy fault"! Thus then we, of necessity, reach the conclusion that, if we would annihilate the gonococcus, it must be through the force of education even as this same force has led to the elimination of smallpox or of diphtheria. No parent would tolerate the presence of a man in his family who had either of these diseases, and yet, through ignorance, he is daily allowing his daughter to mate with the gonorrheic. Educate the fathers and mothers, therefore, as to the exact meaning of gonorrhea, and they, in turn, will educate their sons and their daughters. I lay stress on the daughter because she becomes the chief sufferer from inoculation, and it is her right to know that she should protect herself against the gonorrheic as well as against the alcoholic. Further still, interest the employers of labor in the crusade against this coccus, for a large number of victims come from these sources—the factory and the department store, girls who have had no home training and therefore could not be warned at the mother's knee. Further still, let the lesson taught in the home be dwelt upon in the school—that is to say, let the educators appreciate the meaning of gonorrhea to womankind and the race and let the girl as well as the boy be taught. Further still, clergymen of all denominations must be similarly instructed, for often their words carry weight where those of others fail. Thus, in time, public opinion will make itself heard, and never yet did public opinion fail in securing the right. As a result, the so-called professional secret, which prevents the physician from reporting cases of gonorrhea, will be abolished and thus again Boards of Health will be obliged to place gonorrhea in the class where it unquestionably belongs—that of acute infectious diseases.

Not in my day and not in yours shall we witness this consummation which all medical men hope for, but we are not rash in predicting it for the future when we recall how public opinion has backed up the medical man in his dealing with lesser pests. And never let us forget that it is man who must be watched as well as woman. He seeks her, not she him. He is the initial agent of infection. The average man, when he realizes that which the gonococcus means to himself and to the woman he marries, is going to look at the disease in its true light and have himself certified to before he marries. The professional libertine, the man who will not learn and cannot be taught, the law will look after just as soon as public opinion makes itself felt; in any event the fathers and the mothers of the land will demand a certificate of absence of disease before they allow their daughters to be defiled. And yet again, the woman herself will count as a factor. It is not conceivable that, knowing the consequences of mating with a foul man, she herself should not demand the certificate.

Thus hurriedly, I have endeavored to point out

the sociological import of the gonococcus and to trace, in a rough way, the lines along which we may hope to reach its extermination. To some of you these views may seem Utopian, but even so to all of you it must be apparent that along either these or other lines something leading to the protection of womanhood and of maternity must be done. This Academy of Medicine has ever figured in the foreground when questions of public health or policy have been under discussion, and I know that, when the time seems opportune for radical dealing with the question of the gonococcus, so vital to the welfare of the family and of the State, it will not be found wanting in the full weight of its authority in the education of the public.

116 West Seventy-sixth Street.

GIGLI'S OPERATION, WITH REPORT OF A CASE FROM PRIVATE PRACTICE.

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It is no exaggeration to say that Gigli's operation of lateral section for dilating the bony canal of the pelvis represents the most valuable contribution to obstetrical surgery. To judge from many favorable reports, it seems to be gradually supplanting its rival, symphyseotomy, which has never become popular on account of its various anatomical and clinical disadvantages. So far, all reports of pubic section have originated from hospitals, but the importance and value of an operation, especially in obstetrics, are not so much determined by the favorable results obtained in clinics as by the success achieved by the practitioner at the bedside. This is one of the reasons which have induced me to relate briefly the history of a confinement, which was brought to a happy conclusion for mother and child by the performance of pubiotomy.

The case refers to a primipara, twenty-seven years of age, who by her healthy appearance and fine physique did not excite suspicion of any abnormal condition. No history of rickets could be obtained, nor were any signs of this disease present. The distance between the anterior-superior spines measured 27 cm., between the crests 29 cm.; the length of the diagonal conjugate was 10 cm., of the true conjugate 8 cm. The symphisis was thick, high, and steep, and the inner surface of the lateral walls of the small pelvis could be palpated without difficulty. The type was that of a generally contracted pelvis.

Labor began on the evening of Saturday, February 10. Physical examination showed that the cervix was only partly obliterated, but easily passable. The head was at the brim of the pelvis and movable, the occiput being turned to the right side. The large fontanelle could be felt high up, near the median line, and the sagittal suture nearer to the promontory; the left side of the pelvis was not completely filled out. On Monday morning the state of affairs had not changed materially, in spite of regular and strong labor pains. The head was not engaged, though more firmly pressed into the pelvic entrance. The os was now dilated to the size of a quarter. Meanwhile the waters had escaped. In the afternoon, at 3 o'clock, forty hours after labor began, immediately before operation, the condition was as follows: The os, dilated to the size of a silver dollar, was high up and directed toward the hollow of the sacrum; from its anterior circumference the lower segment of the anterior uterine wall was stretched across the pelvic cavity, toward the symphysis, but neither overexpanded nor edematous. The left side of the pelvis was only partly filled out; the head, though more firmly engaged at the pelvic brim, had not materially progressed in its descent. Condition of mother and child was good. The labor pains continued to be extremely strong, and the mother insisted upon the termination of the labor and declared that she would under no circumstances pass through a third night of such excessive suffering. I performed Gigli's modified pubiotomy, after having informed the patient that the operation would be only a preliminary step and that the spontaneous expulsion would be left to nature. Apart from the insufficient expansion of the os, which would have made an immediate delivery impossible, I thought it wise to guard against the reproaches of the mother if she discovered that the child was not yet born.

I made a cross-incision on the right side, corresponding to the location of the occiput, directly down to the pubic spine, lengthening it inward, to admit the index finger of the left hand, with which I tunneled my way along the posterior surface of the body of the pubes, as far down as the lower border of the descending ramus. The second incision was made on the outer surface of the labium majus at about the level of the glans clitoridis. The thumb of the left hand was introduced and pushed forward against the border of the descending ramus. As I had no other instrument on hand, I used a properly curved, flexible uterine sound, which I introduced from above under guidance of the index finger, left *in situ*, and then pushed through under the border of the descending ramus, against the thumb in the lower wound. The tip of the sound now protruded from the lower incision and Gigli's wire saw was tied to it with a silk thread and drawn through the wound canal. The first saw broke;* with the second and stronger one, I succeeded in a very short time in dividing the pubic bone, the separated ends of which now gaped about 2 1-2 cm. The upper wound was sutured, and into the lower a strip of iodoform gauze was inserted. When the patient regained consciousness she again suffered the most intense labor pains. She complained that the pains of the wound had been added by the operation; with every contraction, the pelvis felt as if torn apart, so that she piteously begged me to end her agony. I waited for about two hours and a half; the attempt to press the head into the pelvis was successful during this time, and when the patient was again narcotized, conditions were more favorable for the application of the forceps. The os had dilated to the size of the palm of the hand and the head had descended into the pelvis, though with the sagittal suture in transverse or slightly oblique direction. There could be no doubt that the head began to descend and rotate to the front. The anterior lower segment of the uterus still extended from behind the symphysis toward the center of the pelvic cavity. The forceps had to be applied in the right diagonal diameter; the left blade over the left cheek anteriorly, the right over the occiput posteriorly. After a few tractions the occiput rotated toward the front, and after readjusting the forceps, the occiput was brought under the symphysis and extracted. To accomplish this, extraordinary force had to be employed. The head of the child showed no abnormal hardness, nor were its dimensions above the normal. No signs of configuration of the head and no overlapping of the bones or swelling of the scalp could be discovered. A slight abrasion of the skin and in-

*The principal cause of this disaster of which we read in many reports is the poor quality of wire saws sold by the instrument dealers. To guard against it, a larger size, a previous test, and an abundant supply are to be advised.

tumescence upon the left cheek, due to the left blade of the forceps constituted the sole lesion. Fifteen minutes later the placenta was expressed, and an examination was made of the sexual canal. At the vaginal entrance, that part of the vaginal wall which covered the gap in the pubic bone was torn through, and thus an open communication between the vagina and the pubiotomy canal was established. The cervix was torn on both sides; the anterior lip protruded as a fleshy flap from the vagina, and the depth of the anterior vaginal vault was no more than two inches. Bladder and urethra were intact. The greater part of the laceration was repaired, and only a small opening left for drainage with a strip of iodoform gauze. Around the hip an adhesive plaster dressing was applied.

The patient had an eventful recovery. The puerperium was disturbed by fever, which lasted for two weeks and oscillated between 99.5° and 102°. It was caused by suppuration of the lower part of the pubiotomy wound. The greatest inconvenience the patient experienced was from inability to urinate. She had to be catheterized for four weeks, and despite the strictest antiseptic measures, cystitis developed, from which she is gradually recovering. Through all her miseries, even through her feverish period, her best friend, an excellent appetite, has never failed her. A short time ago she contracted pains in the left leg, but she is thankful that the operated right side is now so strong as to assume the work of the affected side. Her complete restoration to health appears to me beyond doubt. An examination, five weeks after pubiotomy, revealed a perfect involution of the movable uterus, a bilateral laceration occupying about the lower third of the vaginal portion, union of the vaginal tear, and a soft ridge on the anterior and posterior surfaces of the pubic bone, corresponding to the gap of the separated bones. No mobility could be discovered here. The pain had subsided; cystitis is still present, but improving.

I am sorry not to be in the position to give a more cheerful account of this case of lateral section, and hope it will not deter others from performing this blissful operation in suitable instances. Since Gigli's method of operating has been greatly simplified by Doederlein's subcutaneous method, the principal danger of infection of the wound through the lochia appears to be eliminated, or at least greatly diminished. Gigli made a large incision down to the anterior surface of the pubic bone, extending from the pubic spine to the descending ramus; Doederlein makes two small incisions, one over the pubic spine and one outside the labium majus, and has devised a needle with which to carry the wire-saw around the pubic bone. The latest device is a sharp, properly curved needle, which pierces the skin on the outside of the labium majus, is guided around the pubic bone under control of the finger in the vagina, and brought out above and internally to the pubic spine, thus producing puncture of the skin only. This would seem the most ideal plan of performing subcutaneous pubiotomy, if injury to the bladder, which has happened to experienced obstetricians, could be avoided. The risk may be lessened by keeping the point of the needle in feeling contact with the posterior surface of the pubic bone. A rational method, which I recommend after careful study of all propositions referring to this subject and which I would employ, should opportunity offer itself again, is based upon the combination of suprapubic incision with labial puncture. The mode of proceeding is as follows: An incision is made on the side where the occiput is located, internal to the pubic spine and large enough to admit the index finger, which paves the way down to the lower border of the descending ramus, along the posterior surface of the periosteum. The needle is then thrust through the skin on the outside of the labium majus 2.5 cm. distant from the vertex of the pubic arc, and in the direction of the tip of the index finger, which has remained *in situ*. The tip of the needle is carefully pushed forward, so that it comes to occupy a position between the palmar surface of the index finger and the periosteum. So controlled, it is carried around and out of the incision by retracting the index finger and depressing the handle. The final step of the operation is self-evident. The needle, which Mr. Eissner of the Bible House has constructed for me, has an eye, in which a strong silk ligature for tying the wire-saw is threaded. It is in my opinion irrelevant, supposing the mode of procedure to be the same, whether we introduce the needle from above and pierce the labial skin afterward, or pierce the skin first and emerge above. If we follow the former plan, we have to guard against puncturing the vagina by controlling the needle with the finger in the vagina, not to speak of the interference of the projecting abdomen with the movement of the handle. To be absolutely secure in manipulating the needle, some have advocated its insertion from above, between periosteum and bone. This is easily done by an incision a little inside of the pubic spine, followed by nicking and detaching the periosteum from the posterior aspect of the bone with an elevator or rasp. But I do not regard this proposition as commendable, for it deprives us of the only criterion we have of the success of the lateral section, viz., the palpable gap of the separated bones.

Much may be said of the anatomical features which enter into the plan of surgical procedure. According to the investigations of Tandler of Vienna, there can be no doubt that, whatever method we may choose, the crus clitoridis, which is firmly connected by means of the periosteum to the ramus of the pubes, must be sacrificed. The conception to pass the needle between periosteum and lower border of the pubic bone, without injuring the crus, is illusory. Practically, we may ignore this structure, as the bleeding from it is never abundant and can usually be checked by pressure.

Another important question refers to the increase in length of the various pelvic diameters after pubiotomy. From experiments on pelves of female cadavers, the astonishing observation has been made that after lateral section the increase of the true conjugate amounts to 5 to 7 mm. only, and that of the transverse diameter to 8 to 16 mm. These findings can hardly be reconciled with the experience in practice, according to which, after pubiotomy, normal heads have been extracted through a conjugate of 7.5 cm. The lowest limit of pelvic contraction in which pubiotomy is yet admissible is still a mooted question. It must be remembered, however, that in extreme instances of disproportion between head and bony canal, extraordinary force in extracting the child has to be employed. Injuries to the vaginal wall, corresponding to the operated side, are then unavoidable; even the application of a protective elastic band around the hip will be of no avail. That part of the vagina which overspans the gap of the separated bones is most likely to tear, partly from overdistention within and partly from traction without. To prevent such fatalities, some obstetricians repudiate the rapid delivery of the child after pubiotomy and prefer expectant treatment. No fixed rules should be laid down in this respect; they may be more appropriate for hospital treatment, but the re-

lation of the practitioner to his patient differs from that of the physician in clinics. The latter is more independent and unhampered by personal considerations, while the work of the former is often influenced by motives of sympathy. In any event, when conditions are favorable for forceps or version, it would be inhuman not to terminate labor in one narcosis.

There is probably no new addition to obstetrical surgery more apt to revolutionize the various indications for meeting contingencies than pubiotomy. It is indicated in contracted pelves, measuring not less than 7 cm. in the true conjugate. The child must be living and labor terminated in the interest of mother or child. The resources at the disposal of the accoucheur for overcoming the obstacles in moderately contracted pelves have heretofore been the induction of premature labor; version, high forceps, craniotomy, and cesarean section. All these aids may now be supplanted and supplemented by the simplified, subcutaneous pubiotomy, with little risk to the mother and a good prognosis for the child. Instead of inducing premature labor, with its frequent fatal results for the child, we may now confidently wait until full term. The gruesome operation of perforating the head of a living child should be restricted to exceptional cases and replaced by pubiotomy. When the mother declines the destruction of her living child, pubiotomy may be performed in place of cesarean section. In the management of protracted labor from flattened pelvis, our usual means of interference have been high forceps or version. Some accoucheurs reject even these aids in preference to pubiotomy, which, they claim, holds better chances for mother and child. The steps to be taken after pubiotomy, whether expectant or rapid delivery by forceps, or version, with preceding dilatation of the os, furnish still another chapter of this highly interesting subject.

132 East Seventy-Third Street.

THE OCCURRENCE AND PROGNOSIS OF PNEUMONIA AS STUDIED AT THE LINCOLN HOSPITAL.

By LOUIS FAUGÈRES BISHOP, A.M., M.D.,
NEW YORK.

There is a good deal written nowadays about pneumonia. The vital statistics of a great many cities point to the fact that pneumonia is one of the most fatal of all diseases, not only in proportion to the number of people attacked, but also in the actual number of people who have died from it. This question of mortality from disease as represented by the statistics of various cities and countries is one from which it is not always easy to draw truthful conclusions as to conditions at different times. So much depends upon the prevalent diseases, upon the character and occupation of the population, and upon the names given to diseases when they are reported, that it is really very hard to decide what are the actual changes in the causes of mortality in different countries and different generations. The improved hygienic condition of cities, the improved average living of the people, the improved therapeutics have all made great changes. If persons die of typhoid fever when they are twenty or twenty-five years old they do not die of heart disease or Bright's disease when they are sixty or seventy or eighty years old. So the diminution of death from acute infection, and the absence of epidemics increase the apparent mortality from diseases like Bright's disease or heart disease, which are the results of the gradual deterioration of the body with age. Also in the presence of hard conditions of life such as we find in times of famine and great financial depression when people have hardly enough to eat, and have a very hard time to get along, the diseases which carry people off are more apt to be those to go with a deteriorated state of the system, such as tuberculosis and disorders of the intestinal tract. While in times when people have more to eat and when there is no epidemic abroad people live to good old age, and die of heart disease, Bright's disease, or cancer, which are diseases of advanced age. So I really believe that it is not proved that cancer and heart disease and Bright's disease are any more prevalent than they always were, when we consider that there are more people who are of the age to be subject to these diseases.

Now as to pneumonia. Pneumonia, in a measure, ranks with the degenerative diseases. That is, if people live long enough and become feeble from age, and escape death from epidemic, influenza, dysentery, or any of the infections, it is one of the things that are particularly liable to occur. Nor must we forget that damage to the kidneys and circulation, such as come from high living and overwork, predispose to fatal pneumonia. So I think the same statistical causes which have led to the increased apparent mortality from cancer are active in a measure in pneumonia. Another factor which affects statistics is the fear of tuberculosis. Of late years everyone has been educated to fear tuberculosis, and everyone is afraid of it, and it is more or less getting to be a disgrace to have tuberculosis. Physicians, as a rule, in making out death certificates, when there is the slightest chance of difference of opinion, will naturally make out the one which will be the least shock to their patients. For that reason I believe that pneumonia is often given as the cause of death in cases which are complicated by tuberculosis. So pneumonia again gets an increased percentage and gets the reputation of becoming more and more fatal. The term pneumonia is a very broad one, and covers a large number of conditions of various kinds and various intensity. When we limit the term of pneumonia to acute lobar pneumonia, and when we limit it to patients who are in reasonably good health before the attack, it does not seem to me, as an impartial observer of hospital and private work, that the disease is increasing. I believe we have no more or less pneumonia of this type than we have always had. During the years when epidemic influenza was prevalent of course the number of cases was increased. Another point of interest is the infectiousness of pneumonia. Clinically it does not seem to me that the infectiousness of pneumonia is very marked. We certainly have no experience in the Lincoln Hospital of patients contracting acute lobar pneumonia from other patients in the ward, and we have no experience of nurses or doctors contracting it. The accepted belief now is that a particular germ is the cause of pneumonia, but that has not at all been proved. We always find the lancet-shaped diplococcus present in cases of pneumonia, but whether it is there by accident or whether it is the cause of the disease we do not know; and it is not at all proved that this particular germ, even from a fresh case of pneumonia, is dangerous to other people. So I think that we can dismiss as not clinically important the question of infection in pneumonia.

The prognosis of pneumonia, that is, the decision of what outcome we may expect in particular cases, is dependent upon a number of circumstances, and

we have reason to believe that recently our chances of a true prognosis have been helped by blood examinations. Clinically the prognosis depends, to a great extent, upon the previous life history of the patient; it also depends upon the occasion for the pneumonia. Pneumonias that occur as terminal conditions are necessarily extremely fatal. That is, when people with a chronic condition of feebleness or malnutrition or exhaustion develop pneumonia, the chances are that they develop their pneumonia not because they were infected, but because it was almost the natural outcome of their condition. The same thing is true of people who develop pneumonia when exhausted and debilitated by prolonged indulgence in alcohol. The pneumonia occurring in a debilitated person at the end of a long spree can rightly be classed with that occurring in the old and feeble, the difference of type being in the constitution of the patient and the age. The pneumonia of alcoholics is necessarily a very fatal form, because there is no particular resistance on the part of the system, and because the patient is in no condition to stand the exhausting delirium which almost inevitably follows.

The prognosis in other cases, such as a mild pneumonia affecting one lobe in a previously healthy and robust person, is very good, indeed. These patients get well almost without any treatment. In between these two classes of cases we have a large number in which there is good resistance on the part of the system, and yet in which the disease has developed in an acute active form, and in which there is a considerable involvement of lung tissue. In these cases the prognosis is doubtful, and it is here that very interesting conclusions can be drawn from the examination of the blood. The following two cases are examples:

Case I.—E. G., 50 years of age, was born in the United States. His occupation is a carpenter. He was admitted to hospital ten days ago, complaining of pain referred to the abdomen. No account of his past life or history could be obtained, but he did not seem to be particularly alcoholic, though he acknowledged that he had been drinking somewhat for the past few weeks. On admission he had a temperature a little over 100° and did not develop any particular signs of pneumonia until about the third day, when I detected signs of consolidation in the middle lobe of the right lung. His temperature increased until it reached nearly 105°, his pulse became rapid, at times being over 120, and his respirations were also increased. His pneumonia, beginning as it did in this atypical way, rather gradually, did not run a very typical course. His temperature remained up for four days, and then there was a false crisis, his temperature coming down to normal, but the next day rising again and remaining up several days. His physical signs gradually increased, showing that there had been no improvement in the condition of the lung. Now as to the prognosis in this case: The man did not seem so very sick, and we would naturally judge that he had a fair chance of recovery. Examination of his blood, showed the leucocytes to be only 20,000 with 90 per cent. of polynuclears, both of these points giving a bad prognosis. As high a polynuclear count as 90 per cent. and as low a leucocyte count as 20,000 means that the disease is of a virulent type, and that the resistance on the part of the system is not very great, so his chances suffer in both directions. No efforts were spared in the treatment, however, and the man made a good recovery.

Case II.—S. S., 25 years old, born in Italy; a laborer. The only definite information obtainable as to his previous history was that he suffered severely from malaria in Italy for four years. He, too, on admission did not show any distinctive physical signs, though his temperature was 105°. The next day his temperature fell to normal, but the next evening rose nearly to 107°. The next morning it was down to 100°, and that evening rose to 106°. At this time there appeared signs of consolidation in the right upper lobe of the lung, and from that time on for five days his temperature remained high, but then suddenly fell to normal, where it remained. I should say that he had been treated, since it was realized that he was seriously ill, with large doses of quinine. Examination of the blood showed at first only 41 per cent. of polynuclears and 30 per cent. of large mononuclears, but only 13,000 leucocytes. The 41 per cent. of polynuclears, as compared with the 90 per cent. of the other man, indicated that the pneumonia was not of a virulent type as far as we could tell from the blood; the 13,000 leucocyte count was, however, very low, and, unless I had been disposed to account for this by his previous malaria and by the presence of a large spleen which might have prevented or interfered with the development of the proper leucocytosis, I should have drawn a bad prognosis. The polynuclears increased rapidly, soon attaining 72 per cent., but never reached the percentage noted in the first case. The good prognosis was justified by the result.

In this connection the case of a man who died in the hospital is of interest. His history was as follows: He was 28 years old, had been drinking for a long time, and had developed the pneumonia two days before he came in. The outlook was bad from the beginning, from the clinical point of view, and from the pathological point of view it was bad, because he only had 10,000 leucocytes; that is, he did not show any resistance to the disease, and 91 per cent. of these leucocytes were polynuclears, showing a very severe and malignant infection. So there was the double danger of a severe infection and a very little resistance, and the result justified the conclusion. There was another patient who came to the hospital at the very beginning of his pneumonia, and had a mild attack. He had 30,000 leucocytes, showing a very powerful reaction on the part of the system.

While we must never put clinical pathology ahead of clinical experience and direct observation in making up our prognosis of cases, still we have in the examination of the blood a matter of much importance in helping us to decide as to the danger and probability of the recovery of the patient. And if we cure a patient who has only 20,000 leucocytes and 90 per cent. of polynuclears, it means at least that we have had a pretty hard fight. The low leucocyte count in Case II, the man with a large spleen, suggests that in such a case as this, in which pneumonia is evidently complicated with malaria, we must disregard the count. The leucocytes are not increased in malaria.

54 West Fifty-fifth Street.

"Catheter Cystitis" is, according to Gersuny, often produced in gynecological practice by too deep introduction of the instrument. In this way the vesical mucosa is abraded by the end of the catheter and a *locus minoris resistentiæ*, which favors infection, is formed. He has therefore devised catheters having a collar at a distance of 4, 4.5, or 5 cm. from the intravesical end, which prevents their insertion to an unnecessary depth. The use of these instruments has apparently reduced the number of instances of postoperative cystitis occurring in the author's clinic.—*Centralblatt für Gynäkologie.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, May 26, 1906.

THE AMERICAN MEDICAL DIRECTORY.

THE Editor-Secretary of the American Medical Association has published an announcement of a forthcoming directory of the medical practitioners of the country, which is, we understand, a revival of the Standard Medical Directory, purchased by the trustees of the Association about a year ago. Why, if the Association was to get up a directory, it could not do so without giving a bonus to the publishers of a ludicrously incorrect list we cannot understand—but physicians are proverbially poor business men and we shall not stop to speculate on the inwardness of this transaction. The squandering of a few thousand dollars by such a wealthy concern is a matter of comparatively slight importance, albeit suggestive of life insurance methods. The main point is that the issuance of a directory by the American Medical Association is absolutely without excuse (for the long-established Polk's is eminently satisfactory), unless it is to be given free of cost to the members of the Association. But this is not the case, for the circular states that the price of the directory is to be seven dollars, with one dollar thrown off for advance payment.

This is a rank imposition, and is not reconcilable with the assurance of the Secretary-Editor that the publication of the directory is not undertaken as a commercial venture. We make bold to say there are few publishing houses that would not be willing and eager to get up such a work, cram it with advertisements—all strictly ethical, of course, and push its sales with the backing of the Association aided by the large staff of agents and solicitors constantly employed by the *Journal*. They would regard it as a commercial venture presenting peculiarly attractive features.

For many years the Medical Society of the County of New York and the New York County Medical Association published directories of medical practitioners in the States of New York, New Jersey, and Connecticut, which were distributed free to all the members of those societies; and since the amalgamation of the two State societies the Medical Society of the State of New York has taken up the work under the same conditions, the members of the Society receiving the directory without charge. In addition to this the New York Society looks after quacks, keeps a jealous eye on the Legislature of the State to see that it does not pass any bills prejudicial to the interests of legitimate medical practitioners or likely to affect injuriously the health of the community, and protects its members against unjust malpractice suits. The great American Medical Association should do as much or more, but it practically does nothing for its members, two or three or perhaps half a dozen excepted, beyond a free distribution of its transactions. The Association is a great and prosperous mercantile concern, piling up a surplus each year. If the directory venture pans out according to the expectations of its promoters the total income for 1906 will be in the neighborhood of half a million dollars—a tidy sum and full of possibilities for good to those who have the management of it. There are some twenty thousand members who are entitled to a share in this prosperity, and they should insist upon their right to at least a free copy of the directory. The sales of the book to non-members and the receipts from advertisements should pay the cost of production, and even if there is a small deficit the Association will not be bankrupted.

The Editor-Secretary has also gone into the business of publishing medical books—he might as well drag the Association into the making of shoes. We do not know who authorized this venture—perhaps the managers will take us into their confidence at the Boston meeting in June—but, whether authorized or not, if the Association publishes books it should give them without price to its members. If it cannot afford to publish directories and medical text-books without charging its members for them, it should keep out of the business. The American Medical Association is, or rather should be, a mutual benefit society and not a gigantic medical trust so conducted as to put unlimited power in the hands and fat salaries in the pockets of a few of the insiders. Whatever it produces, whether transactions, directories, books, or buttons, should be the property of each and every one of its members. There must be no preferred stock in this successful commercial enterprise, and every shareholder should demand his proportion of the profits. The directory belongs to the members, and it is pure impudence on the part of those who are getting it up to attempt to make its owners pay seven dollars or even seven cents for it.

GYNECOLOGICAL OPERATIONS ON THE INSANE.

THE treatment of the mentally afflicted has undergone marked changes during recent years and the belief no longer holds good that mere isolation in an asylum is all that is required. The necessity of individualizing, of treating these unfortunates as sick people and each according to his or her special needs, has been strongly impressed upon those who are directly interested in the care of the insane. In institutions where such a plan of procedure has been adopted the good results attained have soon compensated for the additional trouble and expense involved. These good results have shown themselves not only in the higher percentages of mental improvement and recovery, but also in the greater contentment and usefulness of those of the more incurable class. Thus the tuberculous patients in

these institutions are now generally treated by the same methods of isolation and "aeration" as are employed elsewhere. A similar spirit of advance can also be noted along other lines, and an attempt is now made to seek out in each patient the various physical diseases and abnormalities and then to remedy them if they are found to affect in any way the general health and comfort of the individual. If the improved physical state which results from such a plan of procedure also exerts a favorable effect on the mental condition of the patient, then the outcome is doubly gratifying. Medical and surgical measures have both been drawn upon to bring about this desideratum.

The assertion has often been made that in women a deranged mental state frequently depends upon pathological conditions of the genital organs. A number of writers who have investigated this subject report, moreover, a large percentage of pelvic abnormalities among insane women, but whether this has any direct etiological relation to their mental condition is immaterial if we take into consideration the great relief which may be obtained from proper treatment of their local condition. The insane patient has moreover an equal right with the mentally compos to be relieved of symptoms which are of sufficient gravity to call for gynecological treatment of the sane woman.

In many of the larger hospitals for the insane, both here and abroad, steps have been taken to afford the inmates necessary surgical treatment. It is the general consensus of opinion that in certain instances mental recovery is also hastened by the relief from physical distress which is experienced after an essential operation has been performed. The patient's physical health has been restored and by this means the moral and therapeutic treatment has met with a more responsive application. Among the institutions in which gynecological surgery has been carried on from a conservative standpoint is the Manhattan State Hospital, on Ward's Island, and in a report on this work which has been carried on by Leroy Broun (*Annals of Gynecology and Pediatry*, March, 1906), it is distinctly stated that no operation has been done on any of these women with a direct view of any possible effect on the mental trouble for which the patient had been admitted to the institution. Fully three-fourths of the patients presented some form of mental disease which is generally considered incurable, but, in accordance with the view above expressed, it was believed that these unfortunates had as much claim for physical relief as those with the more amenable forms of mental disease. Two hundred and forty-two patients, or a little less than 5 per cent. of the total number of women in the hospital during the period covered by the report, received the benefit of gynecological operation, and as a result one hundred and twelve of this number were physically improved to a marked degree. Of the remainder five died from various causes, in three the case proved to be non-operative, and the others were more or less benefited, though not to any marked degree. In no instance was the mental condition of the patient made worse, either directly or indirectly, as the result of the operation. In some cases lives were saved, in others patients who had been bedridden for years or invalids for long periods, were restored to physical health. And the mental improvement in certain instances was observed to be visibly hastened by the favorable change in the patients' general condition.

The results reported by Dr. Broun cannot be regarded in other than a favorable light, and his work in this field is of great value in aiding to bring about a better understanding among the profession on this very important subject. The point of view which he has adopted is a good one and, moreover, a safe one to follow: "Operate to relieve the patient of physical suffering; if as the result of this she is mentally improved, it constitutes a sequel not directly sought, yet welcomed."

GARDEN CITIES.

In the United States, with the possible exception of New York City, there are perhaps no large centers of population so cramped for space, that it is a serious problem how to house the inhabitants with an ample sufficiency of breathing area both indoors and out of doors. In Europe, however, the situation is very different. In the commercial countries, such as Belgium and Germany, the conditions of life in the cities are attracting the attention of sanitarians and philanthropists, and various schemes have been devised with the view of combating the evils of overcrowding. In Great Britain, and in London particularly, the problem presents itself in its most accentuated forms. Some considerable time ago it was suggested that a fairly satisfactory remedy might be provided for town congestion, by the establishment in the country of what are to be known as "garden cities." Such places of habitation, if the views of their advocates are carried out, would be more or less ideal, in fact modern Utopias, in which the worker would be able to rest from his daily toil amid surroundings calculated to invigorate his body and to stimulate his mind.

Recently the Garden City Association of England held a meeting in London in order to consider the overcrowding problem. The Right. Hon. James Bryce dealt with the question of how to check the growth of great cities, and Ryder Haggard pleaded the cause of the agricultural laborer. Mr. Bryce said that unlimited population was rather a curse than a blessing, and that very large cities were undoubtedly a menace in many ways. London was the most conspicuous example, while Southeast Lancashire was practically one town twenty-five miles long by eight wide. The speaker gave as his opinion that when a city grew beyond a population of 200,000 or 300,000, the difficulty of getting into the country was great enough to prevent most people from enjoying its pure air. This was the point at which a city was too large. Mr. Bryce thought that the ideal to aim at was to have new industrial centers or garden cities, with a population of not more than 30,000 to 60,000. The following resolution was moved and passed: "That the housing problem can be solved and the congestion in crowded centers relieved by a concentrated movement of manufacturers, operators, and others to new areas, arrangements being made for securing to the people the increased value which their presence will give to the sites, and the areas being care-

fully planned so as to make adequate provision for the individual and social needs of the people, especially with a view to securing for all time the combined advantages of town and country life."

Mr. Haggard dealt with the continuous depopulation of the agricultural districts, showing that this exodus from the country to the towns was responsible for much of the poverty, with consequent physical and mental degeneration, which was now so obvious a feature of city life in Great Britain.

So far as this country is concerned, the evils of overcrowding in cities, on the whole, have not been as evident as in certain parts of Europe and of Great Britain. But our cities and those of Great Britain are larger than those of any other country. Further, the tendency to flock to the towns is almost as marked here as in Europe, and the majority of aliens settle in towns. In New York, and to a lesser extent in London, the conditions are greatly aggravated by the fact that a very large proportion of the less desirable class of immigrants who come in make their homes in these cities, massing together and frequently existing in indescribably filthy surroundings. If not already, there will be, ere long, room in America for "garden cities."

The Station House Question.

The police station houses of this city have so long been a blot on its escutcheon that it is highly gratifying to have the matter brought so prominently before the public as has been done by the vigorous protests against their unsuitability that have been uttered by Commissioner Bingham. That his strictures cannot be ascribed solely to the desire to increase from a technical standpoint the efficiency of the department which he directs, but are actually justified from a hygienic point of view, is attested by the fact that the Board of Health has condemned thirty-three of these buildings as nuisances inimical to public health. While it is not likely that the Health Department will insist on summarily abolishing these admittedly unsanitary establishments, it is to be hoped that by this expression of official disapproval public attention will be directed to the question with so much insistence that the Board of Estimate will be forced to accord to General Bingham the financial support necessary to carry out his projects of reform. In this connection it would be profitable to consider the suggestion that has already several times been made by those presumably conversant with the conditions, of doing away altogether with that part of the functions of the station house which concerns the detention of prisoners. It has been proposed to have prisons for this purpose attached to each of the City Magistrates' courts, and all persons arrested would be taken directly to one of these. In this way much time and expense in the transportation of prisoners would be saved and the duties of the station house personnel be greatly simplified and lightened. The reconstruction of the quarters intended for the patrolmen could be effected for a tithe of the sum necessary if each police station were to be converted into a model prison in miniature, and undoubtedly the supervision of the prisoners could be much more effectually carried out if the task were to some extent centralized in this way. It has also been urged that more satisfactory medical control of those in need of it could be exercised under such conditions, and that there would be less risk of the occurrence of the errors of judgment that at present lead to disastrous consequences with such painful frequency. The idea seems to present many advantages both from the administrative and from the economic side, while its drawbacks are not apparent; but whether it be considered expedient or not by those with whom the decision rests, it cannot be too strongly emphasized that in one way or another relief from the existing intolerable conditions is imperative and should be secured at all costs.

Some New Indications for the Use of the *X*-Rays.

Since their introduction, less than ten years ago, the *x*-rays have gained for themselves a position in therapeutics which might be described as impregnable. The indications for their use have grown every year until at the present time we find them applied in the most varied conditions. The enthusiasm which accompanied this progress has led to their use in many diseases or diseased conditions, however, which have since been found to be unsuited. The day will come, perhaps, when this therapeutic means will be more restricted in its application than at the present time, but until then we may continue to record novel and enthusiastic suggestions for their employment. Among these indications interest attaches to two which have lately been suggested by Max Kahane in an article appearing in the *Wiener klinisch-therapeutische Wochenschrift*, March 11, 1905. In these the effect of the rays on lymphoid tissue is made use of for therapeutic purposes. The two diseases referred to particularly are appendicitis and tonsillar hypertrophy. Acute inflammation of the appendix and its neighboring tissues is usually referred for treatment to the surgeon because it is quite universally conceded that from the nature of the disease only immediate operative interference can effect a cure. But, on the other hand, there are chronic forms of appendicitis in which there is no indication for interference of this kind, and these Kahane thinks may well be subjected to treatment by the *x*-rays. It is well known that a large amount of lymphoid tissue in the appendix serves as a base for the frequent infection of the latter by a deposit of bacteria, and it is claimed that this danger point may be readily influenced by *x*-rays, especially if this lymphoid tissue has undergone pathological changes. As regards the application of the Roentgen rays in the treatment of tonsillar hypertrophy practically the same conditions hold good, and the use of the rays in this locality is of particular interest because in no one part of the body does the lymphoid tissue come so near to the surface, and therefore nowhere can it be so readily subjected to the direct influence of this therapeutic agent. The author has not put these suggestions to any practical test, reserving this problem for others.

Staining Methods for the Detection of Urinary Casts.

One of the consummations devoutly wished for by the physician who has frequent occasion to examine urinary sediments, is some ready method of staining casts and other urinary deposits in such a way as to render them more easily discernible. The difficulty in distinguishing casts under the microscope lies in the fact that these bodies have an index of refraction so nearly identical with that of the liquid medium in which they float, that their outlines are very faint indeed, and that extremely careful

manipulation of the fine adjustment and such a narrowing of the diaphragm as to exclude the bulk of the rays from the mirror are required in order to render them visible. The processes of staining casts and other elements of the sediment which have hitherto been suggested include the use of a variety of diffusible and soluble dyestuffs, such as methylene blue, picrocarmine, gentian violet, eosin, safranin, Soudan III., Bismarck brown, Lugol's solution, etc. The failure of these dyes to give satisfactory stained preparations of urinary sediments is due to a variety of causes, foremost among which is the impossibility of fixing casts, epithelia, etc., so as to make them susceptible to the action of the staining agents. These dyes stain the liquid medium so that the almost identical indices of refraction of both fluid and sediment remain relatively unchanged.

In view of these difficulties, the method recently presented by Amann in the *Journal Suisse de Chimie et de Pharmacie* for February 10, 1906, is of interest in that it offers at least a partial solution of this problem. Amann conceived the idea that it would be better to leave the elements of the sediment unstained, and to stain the background surrounding these bodies in such a way as to make them stand out clearly under the microscope. For this purpose he used not diffusible and soluble dyes, such as those mentioned above, but pigments in a finely divided state, such as are found in the ordinary water colors sold in collapsible tubes. The color which he recommends for this purpose is Prussian blue, but India ink in liquid form, as used for black-and-white illustrations, may also be employed. A drop of the sediment is placed on a slide, and is immediately mixed with a droplet of the pigment, the mixture being at once covered with a coverslip and examined. The background is made up of particles of the blue or black pigment, while the casts, shreds of mucus, cylindroids, epithelia, etc., stand out well defined. Manipulation of light is rendered easy through the fact that the particles of pigment absorb most of the excess rays, and thus the contours of the casts can be studied to greater advantage.

News of the Week.

San Francisco Medical Relief Committee.—The Association of American Physicians has appointed a committee to secure books and journals for the medical men and the medical libraries of San Francisco. This committee makes an appeal to the physicians of New York in behalf of its purpose. Practically all the San Francisco physicians have lost their books and their instruments, and their medical libraries have been destroyed. The Medical Relief Committee of Manhattan, the Bronx, and Richmond has volunteered to take charge of all books, journals, and instruments which may be contributed. If such contributions are marked "For the San Francisco physicians," and sent directly to the New York Academy of Medicine, 17 West Forty-third Street, they will be forwarded to Dr. Henry Gibbons, president of the San Francisco County Medical Society and Chairman of the local relief committee.

Seaside Park Bill Signed.—Governor Higgins has signed the bill providing for the establishment and maintenance of a seaside park for New York City. For this purpose the Board of Estimate and Apportionment is authorized by a majority vote to appropriate $2,500,000 without the concurrence or approval of any other officer or board of New York City, and the city Comptroller is to issue city bonds to raise the money. Provision is also made to withdraw from the jurisdiction of the Park Department so much of the seaside park as is necessary for a site for the erection of a convalescent hospital or hospitals by any charitable or benevolent society in New York City, this part of the park to be under the jurisdiction of the city Board of Health or the trustees of Bellevue or the Commissioner of Public Charities of the city.

Smoke Ordinance Violators.—Between forty and fifty smoke nuisance cases were disposed of in the Court of Special Sessions on May 16. All but two of the defendants were found guilty, but all were discharged unpunished, sentence being suspended. It remains to be seen what the effect of this attempt at moral suasion will be, but those who are interested in having the ordinance regulating the escape of smoke within the city limits enforced will probably feel that condign punishment of the offenders would have secured a better guarantee of their future good behavior.

Physicians' Defense Company Not an Insurance Company.—In an opinion handed down May 8, the Appellate Court of Illinois holds that the Physicians' Defense Company, of Fort Wayne, Ind., is not an insurance company under the laws of Illinois, as the company does not undertake to indemnify the holder of its agreement against judgment, but only to pay such judgment if necessary. It does not insure the holder against suits for malpractice. It merely makes a defense against them when they are brought and provides legal services for its patrons.

Loving Cup for Dr. Flint.—The class of 1909 of Cornell University on May 18 presented to Dr. Austin Flint a silver loving cup in memory of his retirement from the chair of physiology on account of reaching the age limit.

Medical College for Women to Be Closed.—The Ontario Medical College for Women, founded twenty-three years ago, is to be discontinued. Owing to the admission by Toronto University of women into the same medical course as men, the attendance has been gradually dropping off at the Ontario Medical College, and the managers do not consider it advisable to continue the institution.

Bellevue Hospital Plans.—The latest development in the controversy between the State Board of Charities and the Board of Trustees of Bellevue Hospital regarding the right of the former to supervise the plans for the enlargement of the hospital has been the granting by Supreme Court Justice Fitts, on the application of Deputy Attorney General Pierce, of an order requiring the Bellevue Hospital Board to show cause at a special term to be held in Albany, why a mandamus should not be issued requiring a submission to the State Board of Charities of the plans for the reconstruction of that institution.

St. Joseph's Hospital (Paterson, N. J.) Staff.—In consequence of a disagreement with the directress of the hospital regarding the appointment of new members of the visiting staff, the entire corps of physicians at St. Joseph's Hospital resigned on May 17. The new staff is composed as follows: Dr. Edward F. Denner, Dr. William Neer, Dr. Thomas J. Kane, Dr. Charles Campbell, Dr. James O'Donnell, Dr. Charles H. Scribner, and Dr. J. W. Atkinson.

"Index Medicus."—Mr. William Barnum, chief clerk of the Carnegie Institution of Washington, announces that the issue of the *Index Medicus*

has been unavoidably delayed, owing to the recent printers' strikes in Boston, where the periodical is printed. For this reason, the *Index Medicus* for March, 1906, has not as yet been published, nor has it been possible to complete work on the index to the volume for 1903. Measures are being taken to relieve the situation, however, and it is hoped that the work of publication will soon be resumed on its regular basis.

Ambulance Collision. — An Eastern District Hospital ambulance was struck by a Lorimer street trolley car on May 19, at Noble street and Manhattan avenue, Williamsburg, and the driver and two surgeons were thrown to the street. The surgeons escaped with slight injuries, but the driver was seriously hurt and was taken to St. Catharine's Hospital.

Beer and Athletics. — In commenting on the failure of the German competitors to distinguish themselves in the recent Olympian games at Athens, German writers do not hesitate to ascribe the incapacity of their country's representatives to the use of beer. The present instance is cited as another proof of the deleterious effect of beer drinking on muscular capacity.

Professor Koch to Remain in Africa.—Professor Robert Koch has resigned the presidency of the Berlin Medical Society, to which he was recently elected, because he has found that the researches on tropical diseases on which he is at present engaged in Africa have proved so engrossing that he will not be able to return to Germany for two years or more.

Against Christian Science in England.—In consequence of the feeling against Christian Scientists aroused in England by the death of Major Whyte, which occurred while he was under the care of an alleged healer named Adcock, a member of the House of Commons on May 16 demanded that legislative measures be taken to prevent followers of the cult from carrying on their practices, with a view to protecting the lives of the ignorant and credulous. Home Secretary Gladstone replied that the law regarding the practice of medicine would probably be further elucidated in the course of the trial for manslaughter of the healer mentioned, and that no action could be taken until the trial was concluded.

Chicago Ambulances to Have Physicians.—The ambulances of the police department of Chicago will soon be turned over to the city health department, in accordance with the plans of the Health Commissioner and the Chief of Police. The eight ambulances to be transferred will each be under the charge of a physician.

Hospital Nurses Strike.—On account of the alleged acerbity of tongue of the matron of the Oil City, Pa., Hospital, the eight nurses of that institution left the hospital in a body. It is stated that three ineffectual protests had first been made to the board of directors before the nurses took this step.

A Warning.—We do not by any means oppose the American Medical Association. On the contrary, properly conducted, it has a legitimate field of usefulness that no other association of the profession can fill. It is only as a caution that it should cease to antagonize the honest convictions and rights of a great mass of the loyal members of the profession that we write. Otherwise, the time will come, as with some of the insurance corporations of the day, when searching inquiries will be made, which will threaten the downfall of the now mighty organization.—*Virginia Medical Semi-Monthly.*

Yellow Fever in Cuba.—A case of yellow fever has been reported from Matanzas, the diagnosis being confirmed by autopsy. Several cases occurred in the same neighborhood during February, but energetic precautions were taken, and it was thought that the disease had been stamped out.

Illegal Practitioners Arrested. — The County Medical Society has succeeded in obtaining evidence against four abortionists, and in consequence of the affidavits submitted by the Society's officers warrants for the arrest of the two men and two women in question were issued and carried out.

Obesity a Disease.—At a court in London the question recently came up whether corpulence were a disease or not. A patent medicine company was being prosecuted for selling an obesity cure without the revenue stamps required on all proprietary remedies for any "disease, ailment, or disorder." The magistrate ruled that obesity is a disorder and that the defendants had committed a breach of the law.

Association of American Physicians. — At the annual meeting of this Association, held in Washington May 15 and 16, 1906, the following officers were elected: *President,* Dr. Francis P. Kinnicutt of New York; *Vice-President,* Dr. James Tyson of Philadelphia; *Secretary,* Dr. Henry Hun of Washington; *Recorder,* Dr. Solomon Solis-Cohen of Philadelphia; *Treasurer,* Dr. J. P. Crozier Griffith of Philadelphia; *Councillor,* Dr. L. F. Barker of Baltimore.

Oklahoma Medical Association.—The following officers were elected at the convention of this society held in Oklahoma City on May 9: *President,* Dr. B. F. Fortner of Vinita; *Vice-Presidents,* Drs. M. A. Kelso of Enid, Walter C. Bradford of Shawnee, and Floyd E. Waterford of Holdenville; *Secretary and Treasurer,* Dr. E. O. Barker of Guthrie. The next meeting will be held in Shawnee.

Kansas State Medical Association. — Officers were elected as follows at the fortieth annual meeting of this society, held in Topeka on May 12: *President,* Dr. L. L. Uhls of Osawatomie; *First Vice-President,* Dr. W. F. Sawhill of Concordia; *Second Vice-President,* Dr. P. S. Mitchell of Iola; *Librarian,* S. G. Stewart of Topeka. Dr. G. H. Hoxie of Kansas City was re-elected editor of the State journal.

Utah State Medical Association.—At the closing session of the annual meeting of this society held at Salt Lake City on May 9, the following officers were elected: *President,* Dr. F. Clift of Provo; *Vice-Presidents,* Dr. A. C. Behle of Salt Lake and Dr. E. M. Conway; *Secretary,* Dr. W. S. Ellerbeck of Salt Lake; *Treasurer,* Dr. J. N. Harrison of Salt Lake.

Maine Medical Association. — The fifty-fourth annual meeting of this association will be held in the City Building, Portland, Me., Wednesday, Thursday, and Friday, June 13, 14, and 15, 1906. The president is Dr. Randall D. Bibber, of Bath, and the secretary is Dr. Walter E. Tobie, of Portland.

The American Association of Life Insurance Examining Surgeons.—This society will hold its seventh annual meeting on June 4, 1906, in Boston, Mass., at the Hotel Thorndike. The president of the society is Dr. Henry Wells Dewey, of Taco-

ma, Wash., and the secretary is Dr. John Guy Monihan, of New York.

Connecticut Homeopathic Medical Association.—The fifty-sixth annual meeting of this association was held in Hartford on May 15, and the following officers were elected: *President,* Dr. William Pitt Baldwin, of New Haven; *Vice-President,* Dr. S. Mary Ives, Middletown; *Secretary,* Dr. H. A. Cameron, Waterbury; *Treasurer,* Dr. Ernest J. Walker, New Haven.

Obituary Notes.—Dr. Albert Töpfer of Jersey City died on May 18, at the age of fifty-seven years. He came to this country from Germany thirty-five years ago.

Dr. Fritz Mechtold died at his home in Stapleton, S. I., on May 19. He was born in Germany in 1842 and was graduated from the New York University Medical College in 1881. He had served for some years as a medical inspector in the Health Department.

Dr. James Miller, Jr., Assistant Surgeon U.S.N., died on May 13 at the Midway Islands. Assistant Surgeon Miller was thirty-one years old and had been on duty with a detachment of marines at Midway Islands since November, 1905.

Dr. William A. McDonald of Lynn, Mass., died on May 11, at the age of sixty-two years. He was graduated from the Harvard Medical School in 1872 and had practised in Boston, Springfield, Fall River, and Malden. He had practised in Lynn during the past twenty-five years.

Dr. William M. E. Mellen of Chicopee, Mass., died on May 14 of cerebral hemorrhage, at the age of fifty-eight years. He received his medical diploma from the University of Michigan in 1876 and had practised in Chicopee since 1878. He had held many public offices in Chicopee, including the mayoralty.

Dr. J. M. D. France of St. Joseph, Mo., died on May 9, at the age of sixty-five years. He was graduated from the Georgetown Medical College in 1865 and had practised in St. Joseph since 1869.

Dr. Jacob L. Williams of Boston, Mass., died on May 15, at the age of eighty-two years. He was a graduate of Brown University and received his medical degree from the Harvard Medical School in 1848.

Dr. Carrie M. Hayward died on May 11, at her home in Malden, Mass., after a long illness. She received her medical degree from the University of Michigan in 1898 and had practised in Chicago.

Dr. Eli Allison of Wayne, N. Y., died after a lingering illness on May 18, at the age of seventy years. He was a graduate of the Geneva Medical College in the class of 1861, and had practised in Steuben county ever since. He had been a member of the Steuben County Medical Association for nearly forty-five years and had served as its president.

The Efficiency of Salicylate of Sodium in Inflammatory Eye Disease.—H. Gradle declares that the disease in which salicylate of sodium has proven itself superior to any other therapeutic agent is irido-cyclitis due to traumatism with infection, as well as in sympathetic disease secondary to it. The writer has watched sympathetic inflammation from the day of the start to its termination in three patients, treated by salicylate of sodium. All three recovered with perfect sight. He knows that the first remained well at least five years, the second nearly three years, while the third died with sight intact, nine months later. Even in so small a number of cases in a disease so dangerous to sight invariable recovery is the strongest possible proof of the efficiency of the treatment.—*Illinois Medical Journal.*

Correspondence.

FIFTEENTH INTERNATIONAL MEDICAL CONGRESS.

(From Our Special Correspondent.)

SYMPATHECTOMY—CAUSES OF SPLANCHNOPTOSIS—FEVER AFTER SPLENECTOMY—FOREIGN BODY IN THE ABDOMEN—THE TREATMENT OF HEMORRHOIDS—PERFORATIONS OF THE GASTROINTESTINAL TRACT—TREATMENT OF NEURALGIA—STATUS THYMICUS—RENAL DIAGNOSIS—ANEURYSM OPERATIONS—PRESSURE NARCOSIS—SURGERY OF THE VASCULAR SYSTEM—PROLAPSE OF THE RECTUM—OPTOMETRY—MILITARY BARRACKS—MILITARY FIRST AID TO THE INJURED.

Lisbon, April 27, 1906.

The surgery of the sympathetic system was discussed by two speakers, Jonnesco of Bucharest and De Sousa of Lisbon. The former first reviewed the historical aspects of the subject and then described the results obtained in the course of his own work in this field, which had convinced him of the great value of resection of the sympathetic ganglia. His statistics embraced 159 cases with 314 sympathectomies. In order to derive the full benefit from the operation, for example in exophthalmic goiter, it was necessary to resect not only the cervical chain but also the first thoracic ganglion. Of 25 cases of this disease the greater proportion were cured as was shown by photographs which were exhibited. In glaucoma he had secured 91 cures, and his results were so favorable that the operation had been well received by ophthalmologists. In epilepsy the outcome was less favorable, for out of a series of 100 cases only 12 at the most had been cured. Sympathectomy was to be preferred to resection of the Gasserian ganglion in trigeminal neuralgia owing to the fact that it was less dangerous and accomplished a great deal. Jonnesco cited one case of essential migraine in which the operation effected a cure after all other attempts had remained fruitless. The resection of the pelvic portion of the sympathetic had given excellent results in sciatica, vaginismus, pelvic neuralgia, the pains of tabes, and in a case of nymphomania in a woman 65 years old.

Sousa stated that so far but little knowledge was available concerning the pathology of the sympathetic system. In epilepsy he believed that sympathectomy might accomplish a great deal, but that it was difficult to select the favorable cases beforehand, and that those cases that were refractory to the bromides might be the most suitable for the operation. In exophthalmic goiter strumectomy gave better results but was more dangerous than sympathectomy. In trigeminal neuralgia resection of the Gasserian ganglion, while more certain in its results, should be performed only as a last resort owing to its greater danger. In glaucoma there was not much difference between the results of iridectomy and sympathectomy, and only when the former operation was contraindicated was the latter to be regarded as a substitute. As regards the severity of the operation he said that out of 456 cases that had been reported the mortality was 11, or 2.5 per cent.

In the discussion Rehn of Frankfurt expressed the point of view of the German surgeons in saying that in Germany the thyroid operation was preferred to sympathectomy in Basedow's disease owing to its greater safety and the fact that the results were just as satisfactory. Spontaneous fluctuations in the patient's condition might give rise to error in drawing conclusions from the results of operations. Garré of Breslau, had resected the ganglia in four cases of glaucoma without any results.

Agnes Victor of Boston read a paper on the fundamental causes of splanchnoptosis. The condition was referred to the existence of a developmental defect which was termed abdominal incompetence, and the ontogenetic and philogenetic evolution of the function of the abdominal walls was reviewed in detail.

E. von Herzel of Buda Pest spoke on a hitherto unrecognized cause of fever after extirpation of the spleen. It was well known, he said, that elevations of temperature often occurred after this operation without any apparent reason. This fever was probably caused by the fat necrosis produced as a consequence of injury to the pancreas. In ligating the splenic vessels the tail of the pancreas was likely to be injured, causing the liberation of ferments which caused fat necrosis in the neighborhood and so gave rise to fever. In order to avoid damage to the pancreas the splenic vessels must be ligated close to the latter organ.

Kojuharoff of Sophia described the accidental leaving of a gauze tampon in the abdomen at operation. Nine weeks after a vaginal hysterectomy the patient manifested symptoms of obstruction, and finally passed the foreign body by the rectum. Six months later the patient again suffered from evidences of obstruction, which at a second laparotomy were found to be the result of peritoneal adhesions. A

sinus persisted and death followed a year later from pyemia. The same author in discussing the treatment of hemorrhoids said that no one of the methods in vogue was quite satisfactory. In the course of his experience he had found that the cautery operation was the most useful. In order to prevent hemorrhage he usually passed from one to three sutures through the burned area.

Tillmann of Cologne discussed acute perforation of the gastrointestinal tract and the gall-bladder. He considered that the better results which he had obtained of late were due to greater accuracy in diagnosis and to the simplification of the operation. In perforation of gastric ulcer a sensation of fullness in the region of the stomach was often present, and in perforation of the appendix persistent vomiting was characteristic. In the treatment of such cases the dry cleansing of the abdomen with gauze was preferable to irrigation. All cases of perforation of the appendix which had come to operation during the first 60 hours had been cured. Of 8 instances of perforated gastric ulcer one, which was operated on six hours after the accident, was cured.

Bardenheuer of Cologne presented a new method for the treatment of neuralgia which depended on his theory that neuralgia was due to hyperemia and should be treated by freeing the nerves from their constricting sheaths. The advantage of this method, which never failed, was that the nerve remained entirely uninjured. In the 16 cases of sciatica so far operated on no relapse had occurred in from 6 to 8 years, and in 5 cases of trigeminal neuralgia no relapse had taken place in from 3 to 14 months.

Rehn of Frankfurt, A.M., reported 28 autopsy records and 5 operations which he said demonstrated the effect of pressure of the thymus on the trachea. The affection was not rare, but so far was but little understood. For diagnostic purposes the appearance over the jugulum of a small mass during an attack of dyspnea was of value. Every attack of dyspnea in such a patient indicated surgical intervention, which should be directed toward the gland itself, as tracheotomy was of no use.

Kapsammer of Vienna read a paper on the diagnosis of the surgical diseases of the kidney. He said that cryoscopy of the urine did not give reliable results; and it appeared that even when performed on the blood it was of service only in the hands of very experienced observers. The methylene blue test and the indigo-carmine test were also unsatisfactory in determining renal capacity. The phloridzin method gave unreliable results in regard to the quantity of sugar excreted, since the drug often gave rise to a flood of urine. On this account he was inclined to accept as a criterion the length of time that elapsed before the sugar reaction appeared. If the sugar was not excreted by one kidney until fifteen or more minutes after the injection, functional incapacity of the organ existed. He also pointed out how unreliable the older methods of diagnosis had been by citing autopsy records which showed that at 20,000 autopsies over 700 cases of surgical disease of the kidney were discovered which had not been recognized during life.

The subject of renal diagnosis was further discussed by Cathelin and Albarran, both of Paris, who spoke of the use of the cystoscope and of the functional tests. Kümmel of Hamburg stated that cryoscopy of the blood had never failed him and that he now had records of 1,000 cases.

Garré of Breslau took for his subject suture of the artery in aneurysm operations. He described at some length a case in which an aneurysm of the thigh was successfully treated by incising the sac and restoring the channel of the femoral artery by suture.

Kuhn of Cassel described an apparatus for performing operations on the thorax under pressure narcosis, which could also be used for therapeutic purposes in certain pulmonary conditions.

D'Arcy Power of London reviewed recent advances in the surgery of the vascular system. He paid a tribute to the work done by Crile in the United States and stated that he had been able to follow many of Crile's suggestions with good results. The advances in the ligature of arteries were then passed in review, and Power expressed his preference for silk over catgut and silkworm gut. The treatment of aneurysm was next discussed, and Power explained an apparatus for the wiring of aneurysms with the subsequent passage of electricity, if necessary, which had been invented by N. G. K. Colt, one of his internes. The advances in connection with the surgery of the venous system were considered and Power expressed the opinion that Trendelenburg's method of treating varicose veins was satisfactory in the majority of cases, though it was unsuitable where the veins were very large, numerous, and thin-walled. He called attention to the treatment of varicocele and of hemorrhoids, and concluded his report with an account of the methods in use for the cure of nevi, both vascular and lymphatic. The same author also presented an extensive paper on the symptoms, treatment, and sequelæ of nonmalignant ulcer of the duodenum.

Napalkour of Moscow discussed prolapse of the rectum. He differentiated between prolapse of the mucosa and of the rectum itself. The former, he said, was always the result of catarrhal inflammation, and was best treated by twisting the mucous membrane 180° around its axis. Prolapse of the rectum was really a perineorectal hernia. Its treatment involved the usual principles for the radical cure of hernia, consisting in elevation of the peritoneal sac, in longitudinal folding of the anterior rectal wall, and in shortening and suture of the levator ani muscle.

Mario Montinho of Lisbon presented a chart for optometry which was a modification of that devised by Mithaud. It had the advantage that it was printed in several colors in addition to black and red, so that it made it possible to detect color blindness. This feature was particularly important in examining individuals who intended to enter marine service. Instead of letters of different size colored circles were used, which was an advantage in examining the illiterate. As the circles were of a definite size the acuity of vision could also be determined and the chart could be used for detecting malingerers.

Brissaud of Paris discussed the construction of military barracks from the point of view of the tuberculosis expert. Some of the features spoken of were the suitable location of the buildings so as to protect them against wind, adequate thickness of the walls, and the undesirability of long straight corridors with their inevitable draughts. He said that the parade ground should also be sheltered from the wind, and that when maneuvers were undertaken adequate provision should be made for protection of the men from the elements.

Kern of Berlin read a paper on military first aid to the injured. He said that during an engagement the first aid should be rendered by such representatives of the medical corps as were on the spot, and that for this purpose two-horse ambulances of light construction should be provided for the purpose of supplying material for emergency dressings. These ambulances should be arranged so as to serve for the purpose of distributing supplies and for transporting the wounded. One of the horses should be equipped with a pack saddle and in rough country should be used as a pack horse independently of the ambulance.

Senn of Chicago discussed the treatment of gunshot wounds in military practice. He said that the fate of the wounded depended largely on the thoroughness with which first aid was rendered. This comprised the treatment of shock and hemorrhage, dressing the wound, and immobilization of the injured part. Probing of recent gunshot wounds must be prohibited. Under no circumstances should attempts be made to extract bullets until this could be done in a well-equipped hospital under strictest aseptic precautions and then only in cases in which such operation was clearly indicated, when the bullet could be felt through the intact skin or its exact location had been determined by the employment of the *x*-ray.

OUR LONDON LETTER.

(From Our Special Correspondent.)

PARLIAMENT, ANTI-VACS. AND ANTI-VIVOS.—THE PRESS AND QUACKERY—"CHRISTIAN SCIENCE" AT AN INQUEST—SERUM TREATMENT OF GONORRHEA—HYSTERECTOMY ON A DIABETIC —SCABIES.

LONDON, May 4, 1906.

On Wednesday the House of Commons witnessed another minister pandering to the Anti-Vacs. This time it was the Education Minister. In reply to a question, he said he proposed to insert in the regulations a provision to exempt intending teachers who objected to be vaccinated, leaving local authorities to decide in each case whether they would employ such a teacher. The same discretion is to be extended to pupil teachers entering training colleges. It seems rather mean to throw the responsibility of this repeal by installments on the local authorities. Asked whether such discretion was allowed in any other part of the civilized world, Mr. Birrell said he was not a judge of civilization—and he is the Minister of Education!

The Budget is a disappointment to medical men, as the Chancellor of the Exchequer fritters away a splendid surplus in doles to coal owners, tea dealers, and others who have made large outcries, while the income tax, which falls almost altogether on precarious earnings, is left at the war standard, with a half promise to inquire into its incidence. Whichever party is in, the promises remain unfulfilled.

The antivivisectionists' bills are put down for Monday next.

A fortnight ago I mentioned to you that the new editor of *Punch* had joined the committee for pushing the "Normyl cure" for inebriates. At that time an equally serious surrender to quackery was made by the *Times*. An article headed "The Redemption of the Inebriate," occupying two

columns of leader type and consisting of a gross puff of a drink cure, arranged expressly to appear as an indorsement of it, has given quite a shock to the profession. The article is prefaced by this statement: "These notes have been written by a member of the *Times*' advertising staff after thorough investigation, conducted with the assistance of an independent registered medical practitioner of long experience." Who could have supposed that the *Times* would descend to this level? Such puffs are too common in the cheapest and least respectable periodicals, but for the *Times* to insert them—and that, too, with all the appearances intended to confuse the editorial staff with the advertising department—that is a fall indeed, and bodes ill for the boasted honor of the press.

The entry of *Punch* and the *Times* on the down grade is certainly to be deplored, but it seems we are also threatened with the defection of *Truth*, a paper which has heretofore reveled in the exposure of shams. The *Medical Press and Circular* has lately begun another campaign against journals which admit quack advertisements, and in the fight has challenged *Truth* as to its admission of announcements concerning cures for baldness, wrinkles, and other things palmed on the public by unscrupulous advertisers. The society editor seems to have lost his temper at being challenged by a medical editor, and, neither being accustomed to mincing their words, some lively paragraphs have passed between them.

Yesterday some remarkable evidence with reference to the so-called Christian Scientists was given at the Westminster Coroner's Court. The inquest was concerning the death of Major J. N. Whyte, who met with an accident in the hunting field three years ago, the spine being fractured. He was treated at a cottage hospital, and Sir Victor Horsley was called in and operated successfully. He was brought to London later and attended by Dr. Huxley and Sir Victor. Seven or eight months later he went to Bournemouth and stayed about four months. Then to London a short time and afterward to Osborne, where he came under the influence of the Christian Scientists, subsequently staying in the house of one of these "practitioners." The evidence as to their doings is on the lines of previous cases, but appears so far more shocking than usual. The inquest is adjourned, but part of Sir Victor Horsley's evidence may be given. Called to him again after a long interval, he found him dying and "in a horrible state." It was "the most horrible case he had ever seen." The cause of death was blood poisoning from neglect of bed sores. At the post-mortem the hip had become dislocated by an enormous abscess, which was gangrenous. Asked if it was a case for treatment, Sir Victor said: "Oh, yes, the lives of patients in these cases depend on attention for bed sores. They are the avenue of infection." It was said a powder had been applied, that was only oxide of zinc, with hardly any antiseptic property. Asked if the patient had received proper treatment might he now be alive, Sir Victor replied, "Oh, certainly." The inquiry was then adjourned.

The serum treatment of gonorrheal infection and purpura hemorrhagica was the subject of a paper at the Royal Medico-Chirurgical Society on the 24th ult., by Dr. Soltan Fenwick and Dr. Porter Parkinson. An interesting point brought out was the employment of serum per rectum. Numerous cases had been treated by the authors during the last two years, and all had been cured, and that in a short time, generally only a few days. Pyemic, rheumatic, and acute cases were among those treated by polyvalent antistreptococcus serum injected into the rectum. Similar good results were obtained in two cases of purpura hemorrhagica. One of these two seemed moribund when the serum was resorted to.

Mr. S. Paget remarked on the fact that the serum seemed to give the same results in both acute and chronic gonorrhea.

Mr. Campbell Williams divided gonorrheal rheumatism into three varieties, viz., (*a*) cellulitic, (*b*) arthritic, and (*c*) arthralgic. In the last there seemed to be an effect on both nerves and periosteum, and he attributed the cause to a toxin circulating in the blood and acting on fibrous tissue. In the cellulitic form he thought the serum would probably be more effectual than in the others. The method deserved a more extended trial, and might prove useful even in gonorrheal salpingitis. The cases adduced bore out the view that gonorrhea is due to a mixed infection.

Mr. Mummery said the difficulty of treatment was in the later stages, which seemed less affected by the serum than the earlier. He approved the rectal method. Dr. Parkinson in reply said no preparation of the rectum was required beyond washing it out. Purpura they attributed to toxins or to microorganisms. He thought serum might be useful in gonorrheal ophthalmia.

At a meeting of the Gynecological Society a large myomatous uterus was shown for Prof. J. W. Taylor, who had removed it from a diabetic patient aged forty-six. She had had one child nine years previously and one miscarriage the following year. She complained of menorrhagia. The diabetes had been observed above a year, and abdominal enlargement had gone on rapidly for several months. Urine acid, sp. g. 1038, much sugar, some albumin. The patient had done well, and Prof. Taylor, finding no statistics of hysterectomy in diabetes, reported this case, thinking it might lead others to relate similar ones, in order that the relative dangers might be estimated of noninterference or of removal when the symptoms were so serious as to seem to call for operation.

Mr. Ryall admired Prof. Taylor's courage in dealing with such a large tumor in a patient with diabetes. From a surgical point of view the risks were sepsis and shock. Five or six years ago he did a hysterectomy on a diabetic who was suffering much from pressure symptoms. She died from shock.

Scabies having attracted attention lately in connection with the "ragging" case, I take some notes about it read by Dr. Barendt at the Liverpool Medical Institution. He said that where the primary eruption could not be detected —cuniculi not being recognizable—but the sites of the secondary eruption due to the pruritus were well defined, the patient should be treated for scabies. In women the area of the nipple, in men the genital region, should be carefully examined. Infection was almost always nocturnal and the result of prolonged contact. That handling of bed or body clothes or shaking hands could communicate scabies was not proven. To trace infection the patient should be questioned on his surroundings for the three weeks preceding the onset of the itching. He used B.-naphthol ointment, 9 per cent., made with superfatted soft soap, which neither stained nor had a disagreeable smell, nor aggravated secondary lesions which sulphur always does. Dr. Stopford Taylor remarked that no treatment was satisfactory unless all clothes were boiled or stoved. At Liverpool the sanitary authorities do the stoving free of charge.

OUR VIENNA LETTER.

CENTENNIAL OF V. FEUCHTERSLEBEN—ESOPHAGOSCOPY—TRANSPLEURAL WOUND OF THE LIVER—OSMOTIC CAPACITY OF THE KIDNEY—INCARCERATED HERNIA.

VIENNA, April 14, 1906.

At the annual meeting of the Royal Medical Association, held on the 23d of March, Prof. Neuburger delivered a memorial address on Ernst v. Feuchtersleben, the hundredth anniversary of whose birth falls on April 29 of this year. The speaker portrayed in admirable fashion the development of this eminent physician, poet, art critic, and reformer, and traced the interrelationship of these various fields of activity in his career. Feuchtersleben was born in Vienna as the son of a prominent official, and after having received his education at the Theresa Academy, devoted himself to the study of medicine in spite of the opposition of his family, and was graduated in 1834. Shortly after this, owing to financial disaster to the family, he was obliged to begin practice under circumstances of great hardship, in the course of which he was forced to make use of his literary talent. In the year 1840 he became secretary of the Medical Association; in 1844 he delivered a very popular series of lectures on psychiatry; in 1845 he was made dean of the medical faculty of Vienna; in 1847 vice-director of the medical and surgical departments; in 1848 member of the Academy of Science, and finally, after having declined the portfolio as minister of education, he was made State secretary in the same department; in 1848 he retired. His most important works are "Dietetics of the Soul," which has passed through forty-six editions, and his "Textbook of Medical Psychiatry," the first comprehensive work on psychology and psychiatry, and which has been translated into several languages. His chief claims to medical gratitude lie in his efforts to demonstrate the connection between medicine and its sister sciences, in his pioneer work in the development of psychiatry, and in the fact that he reformed medical instruction in several directions and effected the abolition of the Latin language in medical lectures.

Hajek has described the extraction of a foreign body from the esophagus by means of the esophagoscope. A woman who had swallowed a hook-shaped bone at dinner came to him, saying that the physician who had been called after the bone was swallowed had attempted to push the foreign body into the stomach; since that time she had suffered from both dysphagia and constant pain. The esophagoscopy was easily carried out under cocaine anesthesia, and at a distance of 36 cm. from the teeth one prong of the bone could be brought into the field of view. The other prong was buried in the wall of the esophagus, but removal of the foreign body was easily effected at the first attempt and caused all the symptoms to disappear. This case is another illustration of the inadvisability of using

the bougie when pointed bodies have been swallowed, as in this way injuries of the esophagus, and therefore under some conditions extremely dangerous complications, may easily be produced. If it is necessary to determine the situation of the foreign body this should be done either by means of radiography, or if this is not possible, by the use of v. Hacker's foreign body instrument or with the soft rubber stomach tube, as has been recommended by Stark. Esophagoscopy has already been found extremely useful in removing foreign bodies, and Stark, in his recently published textbook, has been able to report seventy-eight cases, to which may be added eleven others that have just been described by v. Hacker.

Prof. Frisch presented before the Society of Physicians a sixteen-year-old boy on whom he had operated three years previously according to Thiersch's method for complete epispadias with infundibulum. The defect was completely closed, but unfortunately, as so often happens in these cases, the boy had no sphincteric control and had been obliged to make use of a permanent urinal. Owing to the disagreeable odor this entailed the boy was unable to secure employment and was discharged from one position after another. Frisch succeeded in completely relieving the dribbling of urine by the injection of vaseline. This was carried out by plunging the needle through the perineum under control of one finger in the rectum until the point could be felt close to the membranous urethra. Three c.c. of vaseline were then injected on each side. At present the patient has no incontinence, whereas formerly he lost about 30 c.c. of urine per hour while up and about.

Dr. Milko has operated on a case of transpleural injury to the liver. The patient was a shoemaker, thirty-eight years old, who was stabbed in the side with a cobbler's awl. He at once lost consciousness, and severe hemorrhage occurred, so that when he was brought to the hospital half an hour later he was almost exsanguinated. On examination a profusely bleeding wound 6 cm. long was found in the seventh right intercostal space two finger breadths from the sternum. A piece 8 cm. long was resected from each of the seventh, eighth, and ninth ribs, and then the wound in the diaphragm was enlarged with scissors until the convexity of the liver was exposed. The wound in this was deep enough to receive the index finger for all its length. As it appeared impossible to check the hemorrhage in any other way, even firm packing being without effect, Milko decided to attempt suture. Six sutures were introduced, causing prompt cessation of the hemorrhage, and packing was introduced in addition. The packing was removed on the fourth day, and four weeks later the patient was discharged cured.

The osmotic function of the kidneys has been made the subject of extremely tedious but very important calculations by Rohrer, who has been able to ascertain that the osmotic capacity of the kidneys is a calculable quantity. Rohrer gives the total of the capacity as 308.27 mkg., a result that is at variance with that of Dreser-Galeotti, which was only 172.2 mkg. It is, therefore, possible to determine accurately the extent of the osmotic function of the kidney and, although the process is somewhat difficult, we must remember that we know so little of many of the processes going on in the body that we must gladly accept any possibility of obtaining an insight into the changes involved. The same calculation which was used to determine the efficiency of renal osmosis may also be used in all the processes depending on variations of concentration—that is, for all glandular secretions. It is possible that in this way we may in the future be able to express the physiological and pathological function of organs in figures and so make of medicine a science as exact as physics or chemistry.

Dr. Blau has described a successful case of operation for hernial volvulus. The inguinal hernia of a sixty-eight-year-old carpenter had already been incarcerated twice before his admission to the hospital. At the operation a section of ileum 60 cm. long was found which, though strangulated, was still living and covered with omentum. The incarcerated portion of the intestine was much distended, and after division of the incarcerating band it was found that the mesentery of the imprisoned loop was rotated 180° in the hernial ring. On drawing out the proximal portion of gut from the abdomen it was found that it was greatly discolored and infiltrated for a distance of 43 cm., but even this section of intestine recovered its vitality under the influence of hot compresses so that it could be replaced after resection of the omentum.

Swallowed Foreign Bodies may, according to Blair Bell, be rendered harmless in their passage through the intestine by the administration of a quantity of absorbent cotton plucked into small shreds and given in bread and milk. The foreign body becomes enveloped in the shreds of cotton so that any sharp angles are covered over and injury to the intestine is avoided.—*Medical Press and Circular.*

Progress of Medical Science.

Boston Medical and Surgical Journal, May 17, 1906.

A Biographic Clinic on Tchaikovsky.—G. M. Gould gives copious extracts from the writings of this eminent composer, which according to the author illustrate the inhibiting effect of overattempted but impossible ocular function. In other words, Tchaikovsky suffered from eyestrain.

The Treatment of Organic Heart Disease by the Pneumatic Cabinet.—According to C. E. Quimby, the mechanics of the circulation are illustrated by the following propositions: (1) The circulation depends upon an alternation of differential blood pressures, and its amount is determined solely by the difference, not by the absolute amount of such pressures. (2) The integrity of the vascular mechanism and, hence, duration of life, depend directly upon the maintenance of the absolute amount of blood pressure below a fixed limit; or below an established ratio to heart power. (3) Every cardiac lesion causes an immediate and progressive increase of blood pressure, either absolute or relative, and such increased pressure is the essential cause of death. Therefore (4), the ideal treatment of organic heart disease is to maintain the circulation under low blood pressure; or to hold any inevitable increase of pressure within the limits of possible compensation. The author then describes the cabinet method of treatment. He declares that lowered atmospheric pressure is the equivalent of a differential pressure in favor of the pulmonary circulation, and then makes the application of this principle to the various common valvular lesions. He does not claim that the cabinet will cure those organic heart lesions commonly regarded as incurable, but an experience of fourteen years has firmly convinced him that it affords more immediate, extensive, and lasting relief than any other known measure.

New York Medical Journal, May 12, 1906.

Constitutional Low Arterial Tension and Its Relation to the Life of the Individual.—L. F. Bishop calls attention to the fact that there are certain individuals in whom the blood pressure is constitutionally low, who often have a gouty ancestry and are found in families who seem to have more than their share of high arterial tension. The patients have a very feeble pulse over long periods of time, and yet show none of the ordinary symptoms of circulatory disease. Such conditions must not be confounded with the low tension due to impaired cardiac power, or that resulting from exhaustion of the circulation from an unusual demand for pressure, as in Bright's disease. The patients present certain peculiarities. They thrive best under the stimulation of excitement, and require for their well being an unusual amount of activity and exercise. They are often able to endure without injury an amount of prolonged excitement, or even dissipation (excepting the use of alcohol), that in a person with a tendency to high arterial tension would be most harmful. These patients require active exercise. Many of them find that cold bathing does not agree with them, but that a very hot bath of short duration acts as a very powerful stimulant. While the ordinary symptoms of circulatory deficiency are absent, still there is sometimes so great a lack of peripheral circulation that cold feet and hands are a source of annoyance. Other patients with this condition suffer from occasional fainting attacks, and are inconvenienced in general by the slow response of the demand for an extra blood supply in any particular region of the body. Hence the erectile tissues respond slowly to the usual stimuli. Some of these persons gradually acquire a normal tension, and in many of them the conditions becomes less marked toward middle life.

Clinical Manifestations of the Toxemia of Pregnancy.—J. C. Edgar concludes an elaborate article in this issue. He says that as he sees eclampsia he is compelled to recognize at least two varieties, first, an eclampsia of nephritic origin or of renal insufficiency, and second, an eclampsia which is the natural consequence of a neglected toxemia of the kind peculiar to pregnancy, and which he ascribes to faulty liver action. He believes that these two types can be clearly differentiated. A faulty nitrogen partition may exist in both, but is especially marked in the eclampsia following the toxemia peculiar to pregnancy, and the same points of differentiation exist here as in the preeclamptic toxemia of nephritic origin and that due to the toxemia state peculiar to pregnancy. One general aim of the paper has been to determine from urinary analyses some definite conclusions to guide the general

practitioner in the diagnosis of pregnancy toxemia, but the author is not yet prepared to formulate definite statements along this line. The expression "imperfect metabolism" expresses as well as any the limit of our present knowledge.

Journal of the American Medical Association, May 19, 1906.

Fatigue.—F. S. Lee reviews the known facts and the theories regarding the phenomena of fatigue; showing that although physiologists are generally in agreement as to the facts of muscle fatigue so far as demonstrated, and it is pretty certain that the peripheral nerve fibers are themselves exceedingly resistant, the question of the susceptibility of the nerve centers to fatigue is still considerably in dispute. In view of the recent results of Sherrington, Joteyko, Story, and others, Lee is inclined to think that the muscular system tires before the nerve centers, and that the latter are, like the peripheral nerves, resistant to fatigue. They also throw a certain measure of doubt, he says, on all supposed proofs of central fatigue. A physiological explanation of the facts of mental fatigue is not possible, he says, in the present state of research. We cannot deny the fact of fatigue of psychic centers, but we can only speak with caution as to its being of central or peripheral origin. As yet we know too little in regard to the chemical changes attending fatigue. Lee's own experiments make it seem probable that a loss of carbohydrate has considerable part in the production of muscular fatigue, and he has also experimented with three metabolic products generally recognized as fatigue substances, sarcolactic acid, mono-potassium phosphate, and carbon dioxide, and finds that these exercise a toxic depressant action, especially on the muscular system, and that the sensation of fatigue is in large part the psychic manifestation of this depression. Other like fatigue substances will probably be discovered, and Weichardt's alleged discovery of a special fatigue toxin and antitoxin is mentioned in this connection as requiring confirmation. Little is known as to the production of fatigue substances in the central nervous system. The action of these substances, however, is not confined to the tissues in which they arise; excessive activity of one tissue can cause fatigue of others, and there are probably few physiological functions that are not affected unfavorably by the prolonged and excessive activity of the muscular and nervous systems. The facts of acid intoxication are noticed as analogous to fatigue phenomena, so far as the latter are due to toxic substances. In conclusion, Lee mentions as noteworthy the lack of serious endeavor, except by the nostrum vendors, to provide specific antidotes for fatigue, considering its importance in our daily life. Alcohol, which in small amount seems to have a favorable action, is followed by unfavorable after-effects and cannot be classed as a valuable antidote, and the same is true of other substances of similar physiological properties. A true antidote must recognize the causes. Both scientific and unscientific experience have shown the real value of sugar as a partial restorer of working power, and alkali, such as sodium bicarbonate, may not be without some value. These, however, are only in part efficacious, and only rest and sleep can be thoroughly relied upon.

Serum Prognosis of Tuberculous Pleurisies.—P. Courmont has investigated the agglutination reactions of blood serum and of the pleural serosity in tuberculous pleurisies. He finds that the prognosis of tuberculous pleurisy with effusion is favorable, according to the intensity of the agglutinating power of the pleural liquid, and grows worse with the diminution or absence of this reaction, which increases as recovery progresses and diminishes in fatal cases as death approaches. His conclusions are given, in substance, as follows: (1) The mortality is about 25 per cent. in cases with agglutinating power of the pleural effusion, and about 75 per cent. in those in which this is absent. (2) In patients with agglutinating effusion the ratio of recoveries is large in proportion as the agglutinating power is high. (3) One can see the agglutinating power increase as the case progresses toward recovery, and *vice versa*. (4) These facts support what has been held concerning typhoid fever, viz., that the agglutinating reaction is a reaction of defense, or at least goes parallel with the reaction of resistance of the organism. It is in general in inverse proportion to the gravity of the disease and in direct proportion with the intensity of the resistance. (5) The study of the agglutination in tuberculous pleurisies leads to important prognostic conclusions.

Treatment of Tetanus by Magnesium Sulphate Injections.—S. Logan reports two cases of tetanus treated, according to the method suggested by Dr. S. J. Meltzer in the MEDICAL RECORD of December 16, 1905, with injection of sulphate of magnesium into the spinal canal. Though neither patient recovered, in one of the cases the convulsive phenomena were strikingly reduced. All that Dr. Meltzer claims for the method is that it will prevent exhaustion and allow the system to work off the poison. In the other case the magnesium solution seemed to have little effect, which was attributed to insufficient dosage. Logan calls attention to the following points: (1) The evident sedative effect of the drug on the motor tracts of the cord, and he thinks that possibly if this had been kept up more persistently in the first case the outcome might have been different. (2) The interference with respiration, which was the only annoying feature of the treatment. This was relieved, however, in the first case, and the respiratory function was the last to fail. (3) The complete relaxation, which is out of the ordinary course of events in tetanus. He thinks it possible that we are likely to overestimate the convulsive features of the disease, and not to consider sufficiently the importance of neutralizing the toxins. The treatment is only a palliative one, but, as such, he believes it deserves a further trial.

The Leucocyte Formula in Pertussis.—F. S. Churchill has studied the lymphocyte increase in whooping-cough and reviews its literature. In 36 cases, leucocytosis existed in all but one. Differential counts showed a lymphocytosis in 30, and in 15 out of 16 patients examined in the catarrhal stage. The significance of a high percentage of lymphocytes is of course greater as the child advances in years. His conclusions are as follows: "(1) A general leucocytosis, is present in almost all cases of whooping-cough. (2) A lymphocytsosis, *i.e.* an increase in the number of lymphocytes, is found in about 85 per cent. of cases at some time during the course of the disease. (3) A lymphocytosis is found even more constantly during the early or catarrhal stage, over 90 per cent. showing the phenomenon at this time. (4) A lymphocytosis is found usually in those conditions difficult to distinguish from whooping-cough. (5) The presence of a lymphocytosis in a child with a hard, persistent cough is a factor of great diagnostic value. It is also of prophylactic importance, inasmuch as it can be utilized to prevent the spread of the disease by leading to the prompt isolation of the patient. (6) The child's age must be taken into account in estimating the importance of the lymphocyte percentage."

Improved Method of Suturing in Appendicitis.—J. E. Summers describes his method of operation in appendicitis, with especial reference to the manner of inserting the sutures. The wound is sutured from peritoneum to skin, inclusive, by a one-string continuous stitch. Commencing at the inner angle, the peritoneum is closed by a simple continuous or buttonhole stitch. When the outer angle is reached, the needle (a full-curved, round one, spear pointed) is passed from below upward through the transversalis and internal oblique muscles, the needle emerging one inch outside of and above the outer angle of the separation in these muscles. This manipulation pulls the closed and puckered wound in the peritoneum above and somewhat outside of the line of the cleft in the muscles. These muscles are closed from without inward by a few deep (including all muscle) continuous stitches. If the deep continuous stitch through the muscles has sufficed, the needle is passed from the inner angle of this closure superficially through the internal oblique muscle downward and brought out at the lower angle of the wound in the fascia of the external oblique muscle. This fascia is then closed, either by a simple continuous stitch from below upward, or else the fascia may be made to overlap, and in this way give firmer support. Summers, however, thinks overlapping of the fascia unnecessary. He closes the skin with either a compound buttonhole stitch or a subcuticular stitch. The whole procedure from the commencement of the operation to the closure of the wound takes from eight to twenty minutes, according to the difficulties found within the abdomen and the thickness of the abdominal wall. After fixing on this technique as the most appropriate for the purpose, he selected 61 cases as suitable, and except five patients who were detained several days because of complications independent of the operation, as bronchitis, diarrhea, etc., all were discharged on the sixth or seventh day following operation, many being at home, perhaps, from fifty to one hundred and fifty or more miles a day, one week from the day they left home. In cases of several farmers, he has known of their being at work on the farm on the seventh day.

The Lancet, May 5, 1906.

Fatalities Which Have Occurred Under Ethyl Chloride.—T. D. Luke has gathered the records of twenty-two fatal cases, which he summarizes. Nevertheless, he considers it far safer than chloroform for short op-

erations. His personal experience embraces over 2,000 administrations in all classes of patients, and he has never seen a single fatality. In two instances there was a temporary arrest of respiration, with considerable cyanosis and widely dilated pupils. He notes that dangerous symptoms, when occurring, come on with a rapidity not exceeded by the onset of dangerous symptoms in chloroform cases. Of the twenty-two cases referred to, eight occurred during dental operations. He figures out the mortality rate as about one to 8,000 administrations. He notes that the same conditions seem to obtain as with chloroform, in that the accidents have occurred in nonalcoholics, without constitutional dyscrasia, who have died from a sudden and unpreventable syncope. He would discourage the promiscuous and irresponsible use of all this class of anesthetics.

Primary Caries of the Mastoid Process as a Cause of Mastoid Abscess in Young Children.—L. F. Gamgee presents the following conclusions: (1) In young children a form of mastoid abscess not uncommonly occurs (in 10 out of 61 cases) in which there is no history of otorrhea and in which the membrana tympani appears to be normal. (2) In these cases the abscess is of slow and painless formation, the patient's temperature not being raised, and the ear not being displaced. (3) In these cases the abscess is due to primary caries of the mastoid, the patch of caries occurring somewhere along the line of the mastosquamosal suture, this being in a young child the softest and most vascular portion of the bone. (4) If the patch of caries forms in the upper part of the mastosquamosal line, and if perforation of the bone occurs, the dura mater of the middle cranial fossa is exposed and the mastoid antrum is not opened up. (5) If the patch of caries occurs in the middle or lower part of the mastosquamosal line, the antrum is quickly opened up and then the caries spreads rapidly through the mastoid. When the patch of caries is found to be situated in the upper part of the mastosquamosal line and the rest of the mastoid is healthy, then it can be taken that the abscess was caused by a primary caries of the mastoid. When, however, the patch of caries is found to be situated in the middle or lower part of the mastosquamosal line—*i.e.* in that part which runs along the posterior boundary of the supra-meatal triangle—it must remain uncertain whether the abscess is due to primary caries of the mastoid or to tuberculous inflammation of the middle ear. But, reasoning by analogy, it seems at all events probable that mastoid abscesses of this class have a common origin —viz., in caries of the mastoid process; that the patch of caries occurs nearly always along the line of the mastosquamosal suture, and that whether the mastoid antrum is opened up or not depends upon the exact position in the line of the suture at which the caries occurs.

Obscure Cerebral Manifestations of Tuberculosis.—J. Fortune records three cases of tuberculosis in which the cerebral symptoms overshadowed those referable to lesions in other organs. In one patient delusions of a melancholic nature were prominent, though a cavity developed in one lung and the autopsy showed in addition enlarged adrenals, these structures being studded with colloidal cysts and thick, careous pus deposits. The author discusses the relation of the lung and adrenal lesions in their etiological aspects. In the second patient there was confusion, semi-stupor, and a history of epileptic attacks. Caseous nodules were found in the lungs and bronchial glands. A curious condition was found in the brain. On running the hand over the cortex hard patches were felt where the pia mater was firmly attached. The cortex was firm and tough, and fibrous in feeling. These scar-like nodules were less than pea-sized and in the cerebrum of each side, but not in the frontal lobes, six such spots being on the right side and four on the left. In addition, in the cortex of the right occipital lobe a cyst with tough walls and containing caseous granules was found. The cyst was a quarter of an inch in diameter. None of these cortical nodules was encapsulated or easy to separate from the surrounding gray matter. In both lateral ventricles the ependyma was granular and small calcareous nodules of the size of a hempseed were found. In the left lobe of the cerebellum the white matter was firm and difficult to tear, and the gray matter was almost non-existent. The white matter was contracted and gritty on section. In a third case of delirious mania, a cavity was found in the lung. On the basis that a toxemia is the cause of this form of insanity, one must presume that mixed infection had occurred. Many are the causes assigned to this disease, quite as many, in fact, as to all diseases not known to be due to a specific organism, and pulmonary tuberculosis is in this array.

British Medical Journal, May 5, 1906.

Treatment of Human Trypanosomiasis.—J. L. Todd refers to the use of a meta-arsenic anilin compound, for the administration of which he gives the following directions: Make a 20 per cent. solution of this compound in distilled water, or, preferably, saline solution. Inject it subcutaneously in the doses indicated below. The solution should be warmed to almost blood heat just before use. In this way the pain at the site of injection, which occasionally follows the use of the drug, is obviated. Give in this manner for four to six days 0.6 c.c.; then raise the dose to 0.8 c.c. for four to six days; then again raise the amount given to 1 c.c. per day. Continue to give this dose until signs of intoxication commence to appear. When this happens reduce it, as in the ordinary administration of arsenic, until the limit of the patient's tolerance is reached, and keep the dose at that point.

Serum Therapy by the Mouth.—D. M. Paton has used sera by the mouth for several years and claims remarkable results. Their action as thus employed is neither antitoxic nor antibacterial, but is best explained by the theory of increased tissue resistance. In other words, along with antitoxic and antibacterial resistance to infection, or alone when those other elements are absent, there is produced an increased resistance in the tissues to the pathogenic action upon them of the organisms present; that this produces what may be called a sterile soil without harmfully affecting the organisms themselves. This is present in active immunity, and can be transferred to the patient as passive immunity by the oral use of the serum in regular doses. Concerning the diphtheria antitoxin, Paton notes that there is in this disease a paralyzing agent acting mainly on the involuntary muscular system, and to resist that muscular depressant there is developed a muscle recuperative element in the serum, available by its oral use. There is also a proteolytic agent causing the production of digestive action and leading to the formation of albumoses and other products of digestion, and to meet this there is produced in the serum an antiproteolytic power also available by oral use of the serum. In diphtheria the concurrent use of the serum by the mouth in doses of 1 drachm with the hypodermic injection materially assists the recuperative powers of the patient, and leads to a rapid and complete recovery when given in time.

The Diffusion of Red Blood Corpuscles Through Solid Nutrient Agar.—A series of experiments is detailed by H. C. Ross, the technique of which must be consulted by those interested. He finds that if in a tube containing the sloped agar a drop of blood is placed on the surface of the slope, coagulation will occur in the usual way, and the drop will remain clearly defined, showing bright red against the yellow tinge of the medium. Provided the surface of the agar has not been injured by the platinum loop or other instrument used for inoculating the tube, the blood will remain on the surface, and will not soak in at ordinary temperatures, no matter how long the tube is kept. When the blood has coagulated the tube may be inverted or placed in any position without the blood running, as the clot adheres to the smooth surface of the agar. He believes that the diffusion is a purely mechanical one, and it has been suggested that it is probably a colloid absorption. The phenomenon is not confined to human blood. No suggestions are advanced as to its possible significance.

The Bacteriology of a Common Cold.—The experiments of C. H. Benham lead him to attach value to the claims of Cantley, who has isolated from these cases a diphtheroid bacillus (*B. coryzæ segmentosus*). The author's general conclusions are as follows: (1) Both diphtheroid and Pfeiffer bacilli (*B. catarrhalis*) were present in his cases, but the latter was found in so small numbers as to be negligible. (2) Other organisms were present in about the same proportion as in normal noses and throats. (3) The diphtheroid organism present conformed to the description given by Cantley of the bacillus discovered by him in seven out of eight cases of common cold (and confirmed by Gordon and Prosser White). (4) The diphtheroid bacillus gave reactions in carbohydrate media which differentiated it from diphtheria on the one hand and *B. xerosis* and the Hofman organism on the other. (5) The question of the exact symptoms, if any, caused by the diphtheroid bacillus and the *Micrococcus catarrhalis* respectively cannot be regarded as settled. In view of the fact that

nasal discharge was not a prominent symptom in the author's cases, it seems likely that the diphtheroid bacilli are rather a cause of a painful sore throat, with headache, malaise, muscular pains, irritable cough, and scanty viscid expectoration. Whether they cause a coryza—a cold in the head—is open to question, especially in view of the presence of the *M. catarrhalis* in nearly half the cases. (6) It seems, therefore, best to give a name such as the *B. septus*, which does not assume a knowledge of the pathological significance of the organism. (7) Its occurrence in as many as 95 per cent. of cases nevertheless makes it almost certain that it is of importance in the etiology of a common cold.

Berliner klinische Wochenschrift, April 30, 1906.

Causes of Coated Tongue.—Rollin says that while the older clinicians were accustomed to say that the mucous membrane of the tongue mirrored the conditions existing in the stomach, modern teaching has discredited this view. He maintains, however, that there is a good deal of truth in the former opinion, and that it is incorrect to assume that no immediate connection can exist between gastric disorders and the state of the tongue. Observations on the fasting stomach contents in cases of hyperacidity and of subacidity show that while in the former condition a great deal of lingual epithelium is present, in the latter affection the reverse is true. In hyperacidity the tongue is nearly always clean, whereas in subacidity it is proverbially coated. The difference in its condition in the two disorders is therefore due simply to the more active casting off of the cells which takes place in hyperacidity, and this the author thinks may be explained by the better nourishment of the organ, dependent on the high hemoglobin content of the blood which usually accompanies hyperacidity. In diminished acidity, however, anemia nearly always exists, and this reacts on the tongue by inducing a state of local malnutrition attended by diminished exfoliation of the epithelium.

Severe Anemias Without Regeneration of the Bone Marrow.—Hirschfeld discusses a type of anemia which is different from the ordinary secondary anemias and from pernicious anemia. He considers that as several other cases of this type have already been described and he now adds two more to the number, that this third variety of anemia should be recognized in addition to the normoblastic and the megaloblastic forms. In general, the blood picture during life resembles that of a secondary anemia of great severity, and the course is an acute or subacute one, always terminating fatally. The bone marrow is very much altered, however, and consists only of a thin fluid of a faint red color, containing very few cells. In consequence of the inadequacy of this organ, no nucleated red cells appear in the circulation. The author believes that the causation of such severe lesions of the bone marrow depends on some poisonous principle which has a special affinity for the structure in question. The diagnosis of these paralytic or asthenic anemias is often extremely difficult and may even be impossible during life.

Münchener medizinische Wochenschrift, May 1, 1906.

Sugar Determinations by Means of a Modification of Trommer's Test.—Simrock speaks highly of a reagent for detecting sugar in urine, known as Heins' solution and having the following composition: copper sulphate 2.0, water and glycerine each 15.0, 5 per cent. potassium hydrate solution 150.0. The advantages of the solution are that it is ready mixed and is permanent. Ten to fifteen drops of the suspected urine are added to a much larger bulk of the reagent in a test-tube, and the mixture is boiled. The same precautions in regard to factitious drug reactions that are necessary in using Fehling's, Trommer's, or Nylander's reactions must be applied to this reagent also. Uric acid, creatinin, glycuronic acid, and chloroform, if present in considerable quantities, may simulate the presence of sugar. Albumin and bile pigment are without effect. A rough quantitative estimate may be formed by noting the length of time that elapses before the characteristic precipitate appears in the fluid on heating, and also from the amount of precipitated copper which appears at the bottom of the test-tube on cooling. The author criticises the very common practice of adding a little chloroform to urine to preserve it, and says that glycerine forms a satisfactory substitute which does not interfere with any of the usual tests.

Staining the Spirochaeta Pallida.—Berger says that he has found that this organism may be stained effectually and promptly by combining solutions containing azur with saturated or moderately dilute solutions of numerous other dyes. Probably the excess of azur acts as a mordant in facilitating the imbibition of the stain in question. Undiluted carbol fuchsin solution, carbol gentian violet solution, or Löffler's methylene blue may be used in this way. The following mode of procedure is suggested: The specimen is air dried and is then placed in absolute alcohol for from five to ten minutes. It is dried and about five drops of Löffler's methylene blue, for example, is dropped on the specimen. Half a minute later three drops of azur ii solution are added, and half a minute after this six drops of Giemsa's solution are added to the mixture, and the whole is allowed to stand for two minutes longer. The preparation is then washed with water and mounted in the usual way. It is important not to remove the stains with blotting paper or to wash them off with water during the process; each fresh solution is to be added to the fluid already on the slide, allowing free mingling to take place. The author also attaches importance to the preliminary alcohol fixation, which he says contributes greatly to securing clear pictures.

Anesthetic Drugs in the Treatment of Inflammatory Processes.—Rosenbach states that he is in sympathy with the statements recently made by Spiess, to the effect that inflammatory processes may be very beneficially influenced by the action of local anesthetics. The author goes somewhat further than Spiess, however, for he maintains that not only painful stimuli must be prevented from leaving the affected area, but also impulses of any sort must be checked at their inception. This is to be effected by alterations modifying the local irritability of the tissues, and for this purpose Rosenbach has found morphine of the greatest utility. For superficial lesions of slight extent, he believes that the application of local anesthetics, as recommended by Spiess may be sufficient, but for more extensive processes and for those that are too deeply seated to be reached from the surface, he considers that morphine is necessary. He also mentions the desirability of excluding from this form of treatment cases in which the inflammatory reaction is apparently beneficial, but he does not state very clearly how such a distinction is to be made.

Deutsche medizinische Wochenschrift, May 3, 1906.

Partial Congestion and Pressure Treatment in Inflammation.—Heermann states that he has obtained excellent results in the treatment of phlegmons, cellulitis, furuncles, erysipelas, lymphangitis, sinovitis, etc., by the application of local pressure. This is to be carried out in such a way as to prevent the dissemination of the infectious process through the blood or lymph stream, and is effected by fastening, centrally to the injured part, some solid object, such as a tightly rolled bandage, a padded piece of wood, etc., firmly in position by means of a strap or bandage. In the after-treatment of inflammatory processes in which incision has been necessary and the acute stage is over, the author has found that healing is promoted in a similar way by applying firm pressure over the affected area. The method may also be used to secure the closure of obstinate sinuses and abscess cavities. Heermann suggests that the good effects produced in this way must depend on grounds similar to those underlying Bier's method of treatment by hyperemia.

Exploratory Drilling for Diagnostic Purposes.—Plesch says that excepting the now but little used procedure of harpooning, there is no method available for obtaining bits of tissue for medical examination from the living patient without subjecting him to a more or less considerable surgical operation. He has devised for this purpose two hollow drills, one for the soft parts and one for bone, which he says can be used with satisfaction for this purpose. The instruments are of very small caliber, 1.5 to 2 mm., and the one for bone is provided with serrations at its extremity. It is operated by anesthetizing the superficial parts and then drilling through the tissues by means of any convenient method for rotating the instrument. If bone marrow is desired for inspection, the drill must be drawn out and the cylinder of bone removed from its interior, after which the drill is again passed through the hole in the bone and is pushed into the marrow. When only the soft parts are to be examined, the drill, which for this purpose is of still smaller diameter and has a sharpened edge, may be rotated simply by hand. The author believes that the bone drill will be found of especial value in the diagnosis of mastoid disease and in studying lesions of the bone marrow. The drill for the soft parts is applicable under any conditions in which it is desired to secure bits of tissue for examination.

The Prophylaxis of Gastric Hemorrhage.—Boas says that although the means for detecting occult blood in

the stools have been greatly improved, they are still far from perfect. The chief difficulty lies in the inability to distinguish between blood of human and that of animal origin in any clinically applicable manner. Nevertheless, the importance of watching the feces for evidences of gastric bleeding must be insisted on, and it is in this direction that the most can be done for the patients. Cases of chronic gastric ulcer should not be dismissed from treatment until repeated examination of the stools has shown that these are free from blood. Furthermore, those who have already suffered from the disease or who are subject to bleeding from the gastrointestinal tract owing to other causes, should be subjected to frequent stool examinations for the purpose of obtaining timely warning of an impending hemorrhage. For the treatment of occult bleeding rest in bed is the principal consideration, except in cases of carcinoma of the stomach or intestine. The milk cure is considered the most reliable general plan of treatment. In case the bleeding does not stop in the first three days, he also recommends the repeated use of rectal injections containing 10 to 20 per cent. of calcium chloride. The advisability of persisting in any particular dietary régime is also to be determined by watching the stools for occult hemorrhage during several days after any change has been made.

American Journal of the Medical Sciences, March, 1906.

Rhythmic Lateral Displacement of the Heart as a Sign of Unilateral Pleuritic Exudate.—Charles Lyman Greene gives the following conclusions: A rhythmic lateral movement of the heart occurs in unilateral liquid pleural effusions. Such movement is most marked in medium-sized effusions. The heart approaches the affected side in inspiration and moves outward in expiration. The extent of the movement is variable, but often amounts to two inches. It may be measured by fluoroscopic examination, auscultatory percussion, or in the case of right-sided effusions by simple deep percussion of the free cardiac border, or in some instances by mere inspection of the apex beat. Deep breathing, and especially forced expiration, are essential to the success of the maneuver, and to obtain this morphine must sometimes be administered. Marked rhythmic lateral movement has not been found in pneumonia, tuberculous infiltrations of the lung, malignant disease of the pleura or lung, or in subdiaphragmatic abscess.

Orthostatic Albuminuria, a Clinical Study of a Case, with Special Experiments, Showing the Cause of the Variations in Amount of Albumin.—Orville A. Kennedy reports this interesting case. For the first two or more years the orthostatic albuminuria presented an exceptional clinical picture. The quantity of albumin was often very large; the quantity and density of urine were normal. There were numerous cylindroids, no tube casts, and no constitutional disturbance. After an interval of more than twelve years the symptom group was found to be changed. The quantity of urine was decreased while the density was increased. Tube casts were present, but cylindroids were absent. There was no edema, and neither circulatory nor constitutional disturbance. The indication of these unusual groups of symptoms is that the albuminuria began and continued for more than two years without the existence of renal inflammation or organic lesions. The long-continued irritation, however, finally resulted in a nephritis. The peculiar build of the patient suggesting a loosely built tissue structure, his anemic condition, and his nervous temperament are etiological factors. Careful experiments showed that the amount of albumin varied directly as the amount of fatigue felt by the patient.

The Function of the Left Prefrontal Lobe.—Charles Phelps believes that it is no longer possible to avoid the positive conclusion that control of the mental faculties resides in the left to the exclusion of the right prefrontal lobe. The results of his investigations to determine in what part of the prefrontal region, if in any, the psychical centers are specialized, he presents in the following syllogistic form: Mental decadence always attends conjoint lesion of both prefrontal regions; mental decadence always attends lesion of the left prefrontal region alone; mental decadence never attends lesion of the right prefrontal region alone. In all of the cases of left prefrontal lesion cited, excepting seven, death resulted at an early period. In the cases of recent occurrence an early fatal termination, the characteristic frontal lesion has been found to be laceration, although it is not conceivable that the destruction of tissue is the cause of death. Neither is it certain that laceration determines the characteristic mental disorder. It seems probable that it is rather an indication of the amount of general disturbance of cerebral nutrition or of a more limited local disturbance. To one death is due, and to the other an abnormal state of the psychical centers. The writer contends that grave specific and immediate mental disturbances are due exclusively to lesions of the left (pre) frontal lobe.

Aspiration in Acute Articular Rheumatism.—F. J. B. Cordeiro, in reviewing his cases, says that the number is too few to draw any general conclusions. The fact is noted, however, that in these cases an aspirated joint has never been reattacked during the same or a subsequent illness. An aspirated joint practically recovers immediately, while in the case of an operated joint weeks are required for the wounds to heal. In one of the writer's cases a number of bodies which seemed to be zoöglear masses were seen and were crowded with extremely minute round bodies, micrococci or spores. These did not stain readily.

On "Double Ego," with Report of an Unusual Case.—Alfred Gordon gives the history of a patient who is absolutely convinced that he is composed of two beings, number one and number two. The latter is always for "the bad part of life." He feels that number two is not a material being; he feels its presence, but he does not hear or see it. He thinks also that besides these two there is a third element, the function of the brain, which controls the actions of both. The fundamental pathological feature is a disturbed consciousness. There are periods of amnesia together with genuine attacks of petit mal. Their existence makes it probable that epilepsy is the actual disease. The writer calls the condition epileptic psychosis. The patient's hallucinations constitute "an epilepsy of the sensory centers." He has had spells of fighting with number two, which were always preceded by provocations on the part of this ego in the form of an internal voice. The onset of the spells was sudden. Appropriate anti-epileptic treatment ameliorated the condition for some time. The writer emphasizes the fact that this case is probably unique as an example of the coexistence of two egos at the same time.

Late Results of the Treatment of Inoperable Sarcoma by the Mixed Toxins of Erysipelas and Bacillus Prodigiosus.—William B. Coley learned early in his investigations that it is extremely difficult to produce erysipelas at will, and that the curative properties of erysipelas are derived, at least in a measure, from the toxic principles of the streptococcus. There is danger, too, in the use of artificially produced erysipelas. The destructive effects of the erysipelas toxins are greatly increased by the prodigiosus toxins. The results of this treatment vary greatly with the preparations used. In certain cases the toxins introduced into the blood serum so increase its resisting or destructive properties that it more than counterbalances the proliferating energy of the tumor cells. These cases often end in permanent cures. But in the majority of cases the action of the toxins is never equal to the task and life is eventually destroyed. The writer thinks that results justify the routine use of the toxins after all primary operations for carcinoma as well as for sarcoma. He also believes that in nearly all cases of sarcoma of the extremities it is justifiable to give the toxins a trial before resorting to operation. In twenty-six personal cases the patients were alive and well from three to thirteen years after treatment. All of these cases were beyond operation and were considered absolutely hopeless and beyond treatment by any hitherto known method.

The Rationale of the Roentgen Ray.—James W. Hunter, Jr., declares that the *x*-ray must not be considered as a "cure all," but in its own proper sphere it is very potent. It is hardly probable that it will ever succeed the usual surgical methods in the treatment of malignant disease. But the combination of the two, removal and exposures to the ray, should greatly increase the percentage of cures. The *x*-ray should be given the preference in small growths, for it leaves excellent scars, and is attended by perhaps fewer recurrences than are surgical procedures. It may prolong life in the late stages of malignant disease, or in recurrences after the removal of the breast. In the writer's opinion there is no drug or therapeutical agent whose employment is more thoroughly rational.

Serotherapy of Typhoid Fever.—Raoul Brunon gives some very interesting results of his experiments with the anti-typhoid serum of Chantemesse. The mortality of typhoid fever was estimated at 17 per cent. when the patients were treated by baths. It fell to 3 per cent. under the treatment by serum and baths. All of the patients treated in the first week recovered. Those that died did not receive the injections until the fifteenth, sixteenth, and thirty-eighth days. After the injection there was a short period of reaction, followed by a period of defervescence.—*La Province Médicale.*

Book Reviews.

Personal Hygiene, Designed for Undergraduates. By Alfred A. Woodhull, A.M., M.D., LL.D. (Princeton), Brigadier-General, U. S. Army, Retired; lately Colonel, Medical Department, U. S. Army. New York: John Wiley & Sons; London: Chapman & Hall, Limited, 1906.

This excellent little book contains the substance of a course of lectures delivered to the students of Princeton University during several years past. The work may best be described in brief by giving the titles of the various chapters, as follows: (1) The Skeleton; (2) The Muscular System; (3) The Lungs and Respiration; (4) The Heart and the Circulation; (5) The Nervous System; (6) The Contents of the Abdomen; (7) Digestion and the Care of the Digestive Apparatus; (8) The Development and Care of the Body; (9) Physical Culture Exercises; (10) Fatigue; (11) The Elimination of Waste and the Care of the Skin; (12) Catching Cold, Swimming, Bathing; (13) Clothing; (14) Food; (15) Tobacco; (16) Alcohol. The lectures are addressed to lads, many of whom are still in the developing period, physically as well as mentally, and some of the recommendations, therefore, do not apply to the fully grown man. But, even so, with few exceptions the counsel of the author, with the possible exception of his disapproval of tobacco, and in less degree of that of alcohol, is applicable to mankind in general. To young men, especially to students in preparatory schools and colleges, the book can be unqualifiedly recommended, and we should be glad to see it in the possession of every college student throughout the land. The author has, however, missed one opportunity which is regrettable. The book contains little or nothing on sex questions. This, we believe, is a serious omission. Many, if not most, of the sexual ills which afflict mankind arise, we are convinced, through ignorance of their serious consequences, and it is especially in such a course of lectures on hygiene to young men that the opportunity is presented for a sober and serious presentation of the manliness of purity. The author states in his preface that one lecture, on the Avoidable Diseases, has been omitted. If this lecture was the one on sexual diseases, we think its omission was a mistake, and we hope that, in the next edition—the book deserves to run through many editions—a chapter on this most important subject will be added.

Manuale delle Malattie dell' Occhio, ad uso degli Studenti e dei Medici Practici. Dr. Carlo Enrico May, già Capo di Clinica e Professore di Oftalmologia nei Collegio dei Medici e Chirurghi di New York. Traduzione Italiana sulla quarta Edizione Americana, con note ed aggiunte del Dr. Edmondo Trombetta, Docente di Oftalmologia nella R. Università di Torino. Torino: Unione Tipografico-Editrice, 1906.

The Italian translation of Dr. May's well-known and deservedly popular manual of ophthalmology reproduces most faithfully every detail of the original, both as to text and as to illustrations. In addition, the Italian version contains a number of excellently selected editorial notes by Dr. Trombetta of Turin, the translator. These additions include some useful bibliographic indices, in which, to be sure, Italian literature is not neglected. There are also throughout the book note on treatment, as practised in the Italian clinics by the translator personally, or by his colleagues, and as all such additions appear bracketed, the Italian version offers an interesting opportunity for comparing our own with the Italian therapeutic experiences.

The addition of May's book to the steadily growing list of American medical textbooks translated into Italian cannot but prove gratifying to Italian students, and is a mark of appreciation of the constant advances in the teaching of ophthalmology in America. The work has also been translated into German and French.

Chemistry of the Albumens. Ten Lectures Delivered in the Michaelmas Term, 1904, in the Physiological Department of University College, London. By S. B. Schryver, D.Sc. (Lond.), Ph.D. (Leipzig); Lecturer in Physiological Chemistry to University College, London. Philadelphia: P. Blakiston's Son & Co., 1906.

The structure of the albumens is a problem in which considerable advance has taken place in the last few years. These advances have made possible a better understanding of the chemical dynamics of the proteid molecule in the normal animal body, and although this particular phase of the subject is still in its infancy, the paths already laid out promise to lead into regions that a few years ago we scarcely dared to think of invading. In the first part of these lectures the structure of the albumen molecule is considered from the viewpoint of the chemist, and the methods that have been employed in investigating this subject are demonstrated. The general properties and the reactions of the albumens are first discussed, then comes a consideration of the "degradation products" of the albumens, the protamines and histones, the nucleic acids and the glycoproteids. Lectures follow on the chemistry of hemoglobin and its congeners, on the intermediary degradation products of the albumens, and on Fisher's researches on the synthesis of the polypeptids. The second part, including the last lectures, is devoted to the study of the biochemical action of the albumen molecule, including the consideration of the history of the subject, beginning with the hypothesis of Pflueger (1875), and ending with that of Verworn (1903). It is now nearly two years since the lectures were delivered, and in this space of time a great deal of work has been done in the chemistry and biochemistry of albumen; yet Schryver's monograph remains as a milestone recording the progress of our knowledge of albumen up to the time of writing.

Handbook for Attendants on the Insane, with an appendix giving the Regulations for the Training and Examination of Candidates for the Certificate of Proficiency in Nursing of the Medico-Psychological Association of Great Britain and Ireland. Fourth Edition. Reprinted, with Revised Regulations. Published by the authority of the Medico-Psychological Asociation. Chicago: W. T. Keener & Co.

This is a more or less authoritative handbook for nurses and attendants on the insane. It emphasizes the practical part of their duties, and gives valuable guidance in the numerous questions that will frequently arise in the daily life of such attendants and nurses. Enough theoretical matter is introduced to render intelligible the more practical instructions which form the bulk of the book. There can be no doubt of the worth of the volume; and it should prove as popular in this country as it has in Great Britain.

Intracranial Tumors Among the Insane. A Study of Twenty-nine Intracranial Tumors in Sixteen Hundred and Forty-two Autopsies in Cases of Mental Disease. By I. W. Blackburn, M.D., Pathologist to the Government Hospital for the Insane, Washington, D. C. Illustrated by thirty plates and sixty-five microscopical drawings. Washington: Government Printing Office, 1903.

This volume will be welcomed as a contribution to the anatomical basis of insanity, and, as the title indicates, includes a detailed study of twenty-nine intracranial tumors found in 1,642 autopsies performed in a hospital for the insane. Seventeen of the cases studied belonged to the spindle-celled endothelial sarcomata. Five of the tumors were gliomata; one a typical sarcoma of the brain; one a gliosarcoma, three adenomatas of the hypophysis, one a tuberculoma of the brain, and one on aneurysm of the right middle cerebral artery. The plates and drawings show the topography of the tumors, as well as their finer microscopical structure.

Recent Advances in Physiology and Bio-Chemistry. Edited by Leonard Hill, M.B., F.R.S. Contributors: Benjamin Moore, M.A., D.Sc.; Leonard Hill, M.B., F.R.S.; J. J. R. MacLeod, M.B.; M. S. Pembrey, M.A., M.D.; A. P. Beddard, M.A., M.D., With diagrams. New York: Longmans, Green & Co.; London: Edward Arnold, 1906.

Progress in the more philosophical branches of medical lore has been so extensive of late and has led into so many scientific byways, as the number of those who make it their life work to study the theoretical aspects of medicine has increased, that to the ordinary physician much of the recent work is more or less unattainable. The editor of the present contribution has sought to remedy this state of affairs by assembling in one volume the very large amount of material relating to medical biology which represents the present state of knowledge but which is so widely scattered through the periodical literature as to be readily available only to specialists. It suffices to make only a few selections from the list of twenty section headings to indicate the interest of the subjects discussed: "Energy transformations in living matter; chemical transformations in living matter and its products; theories as to mode of action of catalysts and enzymes; the atmosphere; the effect on life of lessening the barometric pressure; the influence of increased atmospheric pressure; the metabolism of uric acid and the other purin bodies; the formation of urea; the secretion of urine," etc. These are all subjects of practical as well as of academic interest, which it behooves the medical man to be well read in; but to discuss critically the treatment of any one of them by Dr. Hill and his collaborators would require far more space than is available in a necessarily brief notice. The reviewer must therefore content himself with calling attention to the nature of the work, its practical importance, the excellent sense of proportion exercised by the editor in his allotments of subjects and space, and the skill that has been used in infusing a sense of continuity into what is necessarily a piece of patchwork. The perusal of these essays would be of advantage to any medical reader.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held April 5, 1906.

DR. CHARLES L. DANA IN THE CHAIR.

This meeting was held under the auspices of the Section on Obstetrics and Gynecology.

Election of Vice-President.—Dr. WENDEL C. PHILLIPS was elected to this office to fill the unexpired term of the late Dr. George R. Fowler.

Sociological Aspects of Gonococcal Infection in Women.—Dr. EGBERT H. GRANDIN read this paper. (See page 831.)

Medical Aspects of Gonococcal Infection in Women.—Dr. JOS. TABER JOHNSON of Washington, D. C., presented this paper. He stated that this was one of the most important, if not the most important, question before the medical profession of our country and of the world to-day. The reasons why this subject ought to engage the attention of all good men and good women, notwithstanding the strange silence of the sanitary societies upon the prevalence, destructiveness, and demoralizing effects of this widespread infection, were that gonococcal infection was more general throughout the world than any other infection except measles, not less than 90 per cent. of the men in larger cities having had gonorrhea; this infection was the cause of at least 50 per cent. of the female, and much of the male, sterility which was incurable at present; that from 20 to 50 per cent. of the blindness of children, whose eyes were infected during delivery, was due to the gonococcus; that gonorrhea was as potent a cause of abortion as syphilis; and that if an infected woman did succeed in giving birth to one child, the uterus was in such a receptive state that infection speedily crippled both this organ and the adnexa so as to destroy forever that woman's conceptional capacity; the germ of Neisser was then one of the most potent causes of the reduction of natality. Many gynecologists stated that more than one-half of their abdominal sections were required on account of this infection. The consensus of opinion was that two-thirds of all the cases of infection of men came from public prostitutes and the remaining one-third from clandestine prostitutes. Forty thousand of these women died annually and 30 per cent. of this number lost their lives every year as the direct result of gonorrhea. It was now believed that gonorrheal infection was one of the most frequent causes of ectopic pregnancy. A great battle in which a thousand soldiers were killed or wounded, an epidemic of cholera or yellow fever, the wreck of an ocean liner, a mine explosion, the numbers dying from the "great white plague" aroused the sympathies of the public, but philanthropists, sanitarians, and legislators gave no heed to the warnings of the greater social perils which were caused by the "great black plague." As the chief danger to the woman lay in the ascending gonococcal infection, every consideration demanded the most energetic treatment of the acute attack before the vaginal or cervical disease could spread upward. Our only certainty lay in the complete destruction of all the gonococci below the internal os. If any were left they were able to reinfect the mucous membranes for a very indefinite length of time. We should never pronounce a woman cured so long as the microscope could show the possibility of extension of infection to the pelvic organs, or of communication of the disease to anyone else. Every gonorrheal woman should be treated with the possibility always present in our minds that she might become one of the 80 per cent. dead from gonorrheal pelvic disease. The disappearance of gross symptoms was not evidence of cure. The more we knew of the latent powers for evil of the gonococcus, the more we should strive to prevent this germ from hiding in any of the folds or crypts of the mucous membranes ready to spring into a renewed virulence under favorable circumstances. Pregnancy might occur through an infected vagina and cervix and the latent gonococci spring into activity during the parturient process, infecting the conjunctiva of the child and, in breech deliveries, causing vulvovaginitis. Exclusive medical treatment of gonococcal infection in women consisted in preventing the spread of the disease above the internal os. The chief points during the first week were rest in bed, milk and bland diet, perfect cleanliness, and the drinking of large quantities of water. The bowels should be frequently opened with saline purgatives. Upon the subsidence of the acute symptoms the mucous membrane of the cervical canal should be destroyed with nitrate of silver, carbolic acid, the actual cautery, formalin, or the sharp curette, followed by a strong solution of mercuric bichloride. The vaginal portion of the cervix should be painted over with one of these strong germicides, the vagina should be thoroughly irrigated with a strong solution of permanganate of potassium, or ichthyol and glycerin, and then be packed with iodoform gauze. This treatment should be repeated so long as the microscope demonstrated gonococci in the secretions and discharges. The use of nitrate of silver or Churchill's tincture of iodine might be required to destroy vaginal germs, followed up by copious and frequent vaginal astringent and antiseptic douches. In urethral infection copious urination should be induced. There should be gentle instillations of some similar germicide. The glands of Skene and the ducts leading to them were famous hiding places for latent gonococci, and nothing but their complete destruction could prevent recurrent attacks. If germicidal instillations were not curative the ducts should be slit open and curetted and the glands dissected out or otherwise destroyed. Recurring abscesses of the Bartholian glands were usually of gonorrheal origin.

The Surgical Treatment of Gonorrhea in Women.—Dr. J. WESLEY BOVEE of Washington read this paper. After recounting the anatomical structures of women that were usually invaded by the gonococcus he considered briefly gonorrheal ureteritis and nephritis. There was no doubt in his mind but that this form of invasion was quite common. In many cases of pus tubes the microscope failed to reveal the presence of the gonococcus, but we were content to rely upon our knowledge of tissue changes brought about by this germ and the clinical history of the case. About the only form of ureteral involvement by the gonococcus that required operation was stricture. This might be an indication for ureterotomy or ureteral resection. Of course the treatment of pyonephrosis was nephrotomy with a possible nephrectomy. Gonorrhea probably involved the uterus and its appendages much more frequently than was supposed. In chronic gonorrhea spontaneous recovery could not be expected, nor could we hope for non-surgical cure. In acute gonorrhea the best treatment was non-operative. In some cases the accumulation of pus in the *cul-de-sac* of Douglas might occur so rapidly that operation during the acute stage of the disease was imperative. Whenever pus escaped from the tubes into the peritoneal cavity there was indication for evacuation. In the endometrium the disease should be treated by the sharp curette, followed by tincture of iodine carefully applied in full strength on cotton. Even this treatment in a few cases might not eradicate the disease. That the tubes were involved in 43 per cent. and the endometrium in 54 per cent. of the cases of chronic gonorrhea demonstrated the tendency of such extension without operation. In those cases in which the appendages had been removed and in which such symptoms as metrorrhagia, profuse leucorrhea, and pelvic pain indicated activity of the Neisser coccus in the uterus such treatment of the in-

terior of the uterus as had been mentioned was strongly indicated. He had preferred vaginal hysterectomy as being surer in its results, and as being but little more dangerous. With the employment of agents for obliteration of the cavity one could not feel confident of success. Conservation of the appendages was, in the large majority of cases, followed by sterility, uterine hemorrhages, menorrhagia, pelvic pain, and recurrence of infection. If pregnancy followed it was liable to end in abortion, and evidence of a markedly sharp puerperal infection. If the husband had latent gonorrhea we might expect reinfection of the tubes and ovaries at any time. And, again, acute exacerbations frequently recurred so long as gonorrheal tubes and ovaries, or even the intrauterine form remained. All were agreed that some form of surgical interference was necessary. The vaginal route should be chosen in the majority of cases, but if the vagina was very narrow he preferred the abdominal route to increase working space. The abdominal route offered greater facilities for the operator, but for the patient the vaginal route was preferable. Allowing the cervix to remain, left a better vaginal roof than we could expect in vaginal hysterectomy, but should it be degenerated or deeply lacerated, or should the patient have an hereditary history of carcinoma, it had better be removed. In all these vaginal operations for gonorrheal tubes and ovaries *cul de-sac* drainage was advantageous. For large exudations gauze was preferable. The advisability of removing the ovaries with the tubes depended upon their pathological condition and the age of the patient. If they were in good condition and not firmly adherent, then neither the nature of the infection nor the degree of it in the Fallopian tubes should be regarded as indications for extirpation of the ovaries. If the woman was past the age of forty years they should be removed. As to whether one tube should be left when the other was sacrificed he thought that if the endometrium was evidently involved, the other tube, though apparently healthy, should be removed. He thought the uterus should be removed with the tubes, in view of the probability of the affection lurking in the uterine muscle. He concluded that: (1) Earnest effort should be made to cure acute gonorrhea in women before it had entered the uterus; (2) except when there was an accumulation of a large amount of pus in the *cul-de-sac,* non-surgical treatment was best in acute gonorrheal tubal involvement; (3) in chronic gonorrheal pyosalpinx, ablation of the tubes was the best treatment; (4) the vaginal route, with few exceptions, was preferable to the abdominal route for this work; (5) the ovaries were not to be sacrificed unless they were hopelessly involved, or the patient was more than forty years of age; (6) both tubes should always be removed; (7) the body of the uterus might be retained if not adherent or considerably involved; (8) *cul-de-sac* drainage was applicable to both vaginal and abdominal ablations.

Dr. Prince A. Morrow said that his remarks would be devoted to the question of prophylaxis, more especially from the point of view of the social dangers of the disease. The most valuable contribution to our knowledge of gonococcal infection in women had been given by the gynecologists. Gynecology had entirely transformed our conception of gonorrhea, in respect to the character and some of its dangers to women, and had largely magnified our knowledge of its social significance. The intelligent prophylaxis of any infectious disease must be based upon the sources of contagion and its mode of communication. The distinctive peculiarity of venereal infection was that it was communicated through the voluntary acts of individuals and in married life husbands were the purveyors of the infection. While there was no criminal intent, such actions had all the consequences of crime. These crimes against virtuous wives were not confined to the lower and depraved classes of society. They were committed by men of the best social position, men of conscience and character, of intelligence in ordinary matters, but with a fearful ignorance of everything relating to venereal infection. Men exposed themselves in ignorance of the serious nature and real significance of venereal infection; then infected others in ignorance of the prolonged contagious character of this infection, and of the fact that it might be infectious after apparent cure, in ignorance of the fact that the dangers of infection were accentuated by all the conditions of marriage, and especially the procreation of children. The remedy was general enlightenment of the public in regard to the dangers of venereal infection, both individual and social, and the laws of its contagion. Men should be made to know that the absolute indispensable condition of entering marriage was freedom from any contagious sexual disease. Enlightenment of the individual was not alone sufficient, as experience showed that many conscienceless men, fully informed of the dangers of marrying with an uncured venereal disease, nevertheless from material or other considerations took the risk and exposed their wives to infection with every assurance that the consequences would be covered up and concealed, that professional ethics would protect them from exposure. The medical secret related only to the individual; it did not extend to the people collectively. If the general public were enlightened as to the frequency and significance of these social crimes, if the knowledge possessed by the medical profession was given to the people, an aroused public sentiment and an awakened public conscience would no longer tolerate them. Publicity, the fear of exposure, would prove a stronger deterrent, a more powerful corrective, than any laws which could be placed upon the statute books.

Dr. William M. Polk, speaking for the gynecologists, said that it was well to remind the profession that this campaign of education had been going on vigorously for a long time, but, unfortunately, they could not produce such an impression upon the people as the genito-urinary surgeons could who stood at the outposts of danger. The consideration of this question among men was without difficulty; but in the case of the virtuous and good woman it was a subject difficult to approach. Although the physician might give her a warning, she, in her loyalty to the man, would hardly raise the issue upon the nuptial night. With regard to the treatment he said that if this enemy was as formidable as stated, why could not one administer an anesthetic at once in the acute infection, lay open the cervix as far as the internal os, if necessary, and make direct application of such strong substances to every part of that mucous membrane as to reduce to the minimum the possibility of offering a refuge for the rehabilitated gonococcus. So far as the treatment of the interior of the uterus itself was concerned, the radical measures advocated for the treatment of the cervix could not be applied. Something could, however, be gained by the application of formalin. He thought the Fallopian tube should be considered as a part of the peritoneal excavation itself; therefore the process should be limited as much as possible by giving free vent to the secretions. There was a tendency for the secretions to accumulate in the *cul-de-sac* of Douglas, and it was very important in cases of acute gonorrheal infections involving these parts to institute drainage through the *cul-de-sac.* Early incision in the most dependent part and drainage were to be emphasized.

Dr. J. Riddle Goffe remarked that gonorrhea was said to be the most frequent, and the most distressing of all the pelvic infections of women. The responsibility for the spread of gonorrhea should be placed where it belonged. Oliver Wendel Holmes said that every man who attended a confinement that was followed by puerperal infection was himself responsi-

ble; Dr. Goffe said that it was a long time before Holmes' view was accepted, and it was not until this responsibility was placed upon the physician that the condition was met in the proper light and reform came. Responsibility was not taken until knowledge was given as to how this condition should be met. And this applied to the subject under discussion. He said the laity should be told, "You are responsible," but the laity should first be instructed as to the true nature of the infection. With knowlede came responsibility, and there could be no responsibility without knowledge.

Dr. A. Jacobi said this disease was not infrequent in babies. Often the eyes became infected in the vagina as the child was born. Credé's method was said to protect the eyes, but many missed that protection, and many inmates of blind asylums were so because of gonorrheal infection of the eyes. He had seen many cases of general infection resulting from a gonorrheal conjunctivitis. He recently had seen a general pyemia result from gonorrhea of the eyelids. In babies were also seen salpingitis, öophoritis, peritonitis, etc., from gonorrheal infection, but these cases in little girls were not so dangerous as in the adult, although they were more tenacious because of the wrinkled condition of the mucous membrane lining the uterus. Up to the sixth, eighth, or ninth year the infected uterus would never get well, because anything getting between these folds of the mucous membrane would never get out.

Dr. George H. Balleray emphasized the importance of beginning the treatment of these cases in the early stages, and said that very often these cases were not diagnosed by the family physician; these women were usually told they had simply the "whites." If seen early and properly diagnosed there was little difficulty in getting the disease under control before it spread to the uterus and adnexa. He believed every woman with this disease should be placed in bed and douched with bichloride solution, 1-2,000 every six hours, followed by a large douche at a temperature of 112° or 114° F. The bowels should be regulated and diuretics given. He could not indorse the treatment recommended by Dr. Bovée in subacute cases; here he thought it justifiable to dilate the cervix and irrigate the uterus. But he was opposed to the use of the curette, the devil's own invention. If the appendages were hopelessly diseased they could be removed. In some cases hysterectomy must be resorted to.

Dr. Robert A. Murray said that it had been claimed that 90 per cent. of men had gonorrhea, a statement he doubted; but if this statement was true the large proportion of gonorrheas must be cured, and thoroughly so, or the world would be depopulated. He said it was the duty not of the gynecologist or urologist, but of the general practitioner to treat these cases as they came to him. The moral and religious aspect of the question rested in the prevention of gonorrhea, and every man with gonorrhea should be informed that he had a discase which would infect him as severely as smallpox, and which would infect his wife and cause, in the majority of instances, her ruination.

Dr. Arnold Sturmdorf emphasized the great importance of radical and thorough treatment of the disease in its early stages, especially in women. These were not cases for office treatment; the women should be placed in bed and the attending surgeon should have all the paraphernalia of a well-equipped surgical service if he would be successful.

Dr. Jos. Taber Johnson closed the discussion. He said he was particularly interested in what Dr. Jacobi had said regarding gonorrheal infection of the mucous membrane of the uterus in young girls. He recalled to mind a visit to Tait a few years ago and the statement made by him that most of the cases occurring in gynecologigal practice were due to lack of development of the uterus, such as displacements, inflammations, endometritis, corporeal leucorrhea, etc. The reasons for the occurrence of gonorrheal vulvovaginitis in young girls, appearing in both dispensary and hospital practice, had never before been explained as it had this evening. The disease was never recovered from when it affected the mucous membrane of the uterus in young girls, and probably in the majority of the cases this was due to a lack of development of the uterus.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held March 22, 1906.

Dr. Arnold Sturmdorf in the Chair.

Appendix Removed from a Pregnant Woman Without Interrupting the Pregnancy.—Dr. Abram Brothers presented this specimen, which he had removed from a patient, married one and a half years, and pregnant three and a half months. Four days previously she had been seized with severe abdominal pains, which gradually showed a tendency towards localization on the right side. There was no vomiting, but the bowels were constipated. The temperature was about 102° F. and pulse 120. The peritoneal cavity was opened and an enlarged pregnant uterus seen and protected with gauze pads, being hardly disturbed during manipulation. A cystic half of the right ovary was exsected. The appendix was found directed upwards and inwards with injected blood-vessels, recent adhesions being found at its base and adjacent portions of the cecum. The appendix was removed in the usual manner by exsection and cauterization of the stump. The abdominal wound was closed without drainage. The specimen showed a catarrhal appendix with three fecal concretions. The patient made an uneventful recovery.

LeFort's Operation for Vaginal Hernia, Following Vaginal Hysterectomy.—Dr. Brothers presented this specimen, removed from a woman 60 years old, who had had her uterus removed by vaginal hysterectomy two years previous for the cure of a complete prolapsus. She underwent two subsequent operations for the cure of a vaginal hernia. She was in a very wretched state and gladly accepted the proposition of obliterating the entire vaginal canal if necessary. A window-shaped area was denuded on the anterior and posterior surfaces of the vagina, after reducing the hernia after the method devised by LeFort. The operation, which is fully described in Pozzi's work, proved to be quite successful and simple in its performance.

Uterus and Vagina Removed en Masse by Vaginal Hysterectomy for the Cure of Prolapsus Uteri (Edebohl's Operation).—Dr. Brothers presented this specimen. The patient was about 50 years of age, very emaciated, and was operated upon after the method proposed by Edebohls. The main purpose of the operation was to obliterate the vaginal canal so that a condition of vaginal hernia could not occur. The anterior vaginal wall was so intimately adherent to the bladder that it had to be completely separated by the scissors, and made the operation quite difficult. The rectum and bladder escaped injury and the removal of the uterus presented no technical difficulties. After the stumps of the broad ligaments were brought together and the peritoneal cavity shut off above, circular sutures were passed from above downwards so that a column of raw tissue extended upwards from the vulvar orifice to the stump of the broad ligaments. The patient showed no reaction until the eighth day, since which time she had been suffering from a low grade of pneumonia. Her general appearance seemed to indicate an ultimate recovery.

Perforation of Intestine Due to a Fishbone.—Dr. Brothers presented this specimen. The patient was a woman, 60 years old, whom he had apparently cured of a tuberculous peritonitis by incision and drainage over two

years previous. A sinus leaking during the six months following left her with a ventral hernia. One week previous to admission a bulging was noticed at the site of the cicatrix, which increased in size and caused severe pain on coughing or breathing deeply. Percussion was flat and the tumor felt hard. The temperature was 102° F. and pulse 120. The case was very unpromising and the preliminary preparation of the abdomen was done without anesthesia. With considerable difficulty the intestines were separated from the anterior abdominal wall and each other until a large cavity containing about eight ounces of a straw-colored liquid was perforated with the finger. This was the "bulging tumor" from which she suffered. While separating the adhesions an ulcer of the intestine presented on a coil attached posteriorly and in the region of the lower angle of the wound. While trying to get this coil of intestine up to the level of the wound he noticed a sharp point projecting from the center of the ulcer. This was seized with forceps and drawn out; it was a fish-bone which measured nearly one and a half inches in length. Isolating the coil of small intestine with gauze pads, as it could not be brought out of the abdominal wound, he proceeded to pass a circular, tobacco-pouch suture about the margin of the ulcer. Depressing and inverting the ulcer the suture was drawn together and tied. To reinforce this suture a few extra Lembert sutures were passed in a second tier. These buried completely the first sutures. After passing a cigarette drain through the lower angle of the wound down to the site of the intestinal perforation the ventral hernia was treated in the usual manner. For two days after the operation the temperature ranged between 102° and 103° F. and the patient's mind wandered. Bilious vomiting kept up and nothing was retained on the stomach. Cathartics and enemata were interdicted, but strychnine and eserine salicylate were given hypodermically. After 48 hours the patient had an involuntary movement and on the ninth day was regarded as being out of danger.

Dr. Grace Peckham Murray said she was interested in the Porro operation, and that it had been performed many times at the New York Infirmary with great satisfaction. At the same time she believed it to be a pity that we should lose sight of the fact that a less extensive operation than the Edebohl's operation was to be preferred.

Hysteroepilepsy.—Dr. George H. Balleray presented the ovaries that he had removed from a patient, 36 years old, two weeks ago, for the relief of hysteroepilepsy. She had had five children, the last two years ago. There were no neurotic symptoms. With menstruation established after the birth of her last child she had epileptic attacks. She was admitted to the hospital and the ovaries were removed. What the result would be he did not know. The specimen and report of the case were presented in order to get the views of the members of the section.

A second specimen presented was removed from a woman, 37 years old, who had had five children, the last five years ago. She was admitted to the hospital with the supposition that she had an abortion. Her temperature was high and she passed membranes. A mass on the right side proved to be a pus tube. No improvement resulted until an abdominal section was performed and the tube removed; it contained a considerable amount of pus and the ovary was cystic. On the left side there was a small and rudimentary tube which was lost in the broad ligament. The round ligament was one-quarter or one-fifth the size of the one on the right side.

Dr. A. Brothers said that he had had one experience. He had removed an ovary as large as the one shown from a young girl for hysteroepilepsy. Six or seven years later the attacks returned and, therefore, he had lost confidence in this procedure as one for curing this variety of epilepsy. It cured only the diseased ovary.

Dr. J. Riddle Goffe said he was surprised that this subject had again been brought up for discussion, believing that it had been investigated thoroughly years ago. Dr. Goffe had ceased to do this work on such cases for years, and did not believe that the operation was at all justifiable.

Dr. Arnold Sturmdorf said that the members should discriminate between the cases of true epilepsy and true toxemia. A number of reports had been published in which there had been a cure of the tonic and clonic convulsions.

Hysterectomy.—Dr. Balleray presented a uterus he had removed from a patient ten days ago. She was 44 years old and her last child was born five years ago. She had suffered for a year and a half from metrorrhagia, it of late being quite excessive, and she came to the hospital for its relief. The pathologist thought she had an adenocarcinoma, although Dr. Balleray did not think it was at all malignant. In the hospital she improved. The cervix, which was enormously enlarged when she entered the hospital, diminished in size. The appendages were not diseased. From the clinical history given the disease was not a malignant one, yet it resisted treatment, and hysterectomy was performed. He said he had seen cases that resisted all treatment by curettage, packing, etc., and in which nothing did good except hysterectomy.

Specimen of Tumor.—Dr. Balleray presented a tumor removed from a young woman, 29 years old. The interesting point was its rapid growth. It seemed to be closely adherent to the body of the uterus and was apparently pedunculated with a short pedicle.

Gonorrheal Pyosalpinx.—Dr. Balleray presented this specimen. The patient had a gonorrheal pyosalpinx and the cervix looked unhealthy. He started in to do a vaginal hysterectomy, but finished the operation by abdominal section.

Specimens of pus tube and ovary removed from a woman with gonorrheal pyosalpinx were also presented. A diagnosis of appendicitis had been made, as is often done in these cases. After the appendages were removed a large mass was noted about the level of the anteriorsuperior spine. It was found to be a cyst of the right ovary, the size of the uterus; it was very soft and friable and ruptured. It was rotten. The contents resembled a dermoid except that there was no hair and the tumor seemed to have started behind the peritoneum.

Salpingitis as a Cause of Ectopic Gestation.—Dr. Samuel W. Bandler considered the cause of sterility and extrauterine pregnancy as existing in salpingitis; the ciliated epithelium was destroyed and the egg arrested in the tube. He related cases to prove his contention. Specimens were also shown and proved that four out of eight cases had an inflammatory etiology for the ectopic condition.

Uterine Hemorrhages of the Menopause.—Dr. Grace Peckham Murray read this paper. She said that it was generally accepted that the menopause began with the cessation of menstruation or marked menstrual irregularities, and ended with the termination of the varied disturbances incident to this period. Her observations had led her to believe that in New York women the cessation of menstruation was much later than forty-five years. As to frequency of hemorrhage at this period recent writers averred that it was not as common as was formerly supposed. Up to the time that Dr. Duff wrote his paper containing the report of the examination of 482 healthy women and found among them only 39 who gave any history of menorrhagia of any importance, the medical profession as a whole were apt to regard hemorrhage as a natural accompaniment of the menopause. The important questions were whether an increased flow at the time of the menopause was physiological, and whether a hemorrhage, either that of menorrhagia or metrorrhagia, was merely functional and not pathological. Dr. Murray said that she had studied the question for twenty years and hoped at a future time to furnish tabulated statements that would bear her out in the following conclusions: She believed that the normal change of life was established without an increased loss of blood, that the flow was less during the second decade of menstruation than during the first; less during the third

than during the second, and that the flow decreased slowly at the period of cessation. The flow became less, and less time was occupied; it also became thinner and decomposed more readily. In some cases cessation of the menses occurred without any intervals occurring between the regular times, but more often intervals of one, two, and then three months occurred, the usual type being that the times were lengthened by a month or more. In her experience she had yet to see a case in which there did not exist some reason for an increased flow at this time. A wide range of conditions existed which would cause an abnormal loss of blood at this time. Troubles other than local were said to bring about hemorrhages at the time of the climateric, such as congestion of the liver, cardiac, renal, and splenic affections, and the dyscrasias, such as anemia, purpura hemorrhagica, hemophilia. A hemorrhage might also have a nervous origin. Cases of premature menopause occasioned by grief or shock had occurred in her experience. Cases in which a constant loss of blood took place had been found in some instances to be due to hemorrhoids, caruncles, or the bleeding of erosions from a completely prolapsed uterus. Uterine hemorrhages were produced often at this time from causes which obtained throughout the menstrual life of woman, but were more likely to occur as a woman became advanced in years and her sexual organs had been more exposed to disease from her mode of life, her marital relations, and her frequent pregnancies resulting in births and miscarriages. This was the great reason why an excessive loss of blood had come to be regarded as concomitant with the menopause. Such inflammatory conditions as cervicitis, endometritis, and metritis came under this category, and the hyperplasis, which resulted from long-continued inflammations. The benign growths, polypi, fungoid endometritis, fibroids, especially the intramural variety, were not infrequently found. Fibroid infiltration, a condition rarely noted and which gave rise to intractable bleeding, might often be the cause of hemorrhage. As was well known, hemorrhage was often a symptom of carcinoma, and on this account an immediate examination in cases of hemorrhage at the time of the menopause should be made. Another group of cases was composed of those who had vascular disturbances due to interference with the circulation of the uterus or changes in the blood-vessels themselves. A diligent study of the histology, normal and pathological, of the uterus and its appendages at the time of the menopause was urgent upon us to bring about a better understanding of the problems which the climacteric presented, not only of hemorrhages and other vascular changes, including the vasomotor symptoms, but of those which related to the nervous system as well.

Dr. J. Riddle Goffe agreed with Dr. Murray, that extreme hemorrhages occurring at the menopause were pathological. Time and time again had he curetted women for recurring hemorrhages without relief; often the pathologist had reported adenocarcinoma after examination of the scrapings. These cases all should be followed to the end and not be permitted to go away without some effort at relieving them, even though it might be necessary to do a hysterectomy.

Dr. A. Brothers said that the subject of irregular bleedings at the menopause was strikingly brought to them and stated that the frequency of these bleedings had been greatly overestimated. The treatment would, of course, depend upon the pathological conditions presented. There were forms of irregular bleedings, as illustrated by Dr. Balleray's specimens, and he believed the treatment advertised all over Europe should be alluded to, the use of superheated steam, but only when malignant disease had been excluded. cluded.

Dr. S. Marx said that the sum and substance of the question resolved itself into what one considered excessive bleeding at the menopause, and he personally believed that excessive bleeding should be regarded as a pathological condition. He emphasized the importance of treating the patient as a woman, but not as a woman at the menopause. If she should be the victim of a slowly growing carcinoma, or anything else, that had continued for a period of years, treat it and not especially the woman at the menopause. With regard to Dr. Brothers' remarks he said he would prefer the clinical evidences, plus the macroscopical examination, rather than the microscopical evidence alone.

Dr. Bandler said that in some instances the microscopical examination showed nothing. Sometimes there was a fibrosis and, in some cases, nothing but a hysterectomy would result in benefit. He personally obtained the best results from a combination of ergotin, hydrastin, and stypticin; they acted to produce a normal contraction of the uterus.

Dr. George H. Balleray believed that excessive hemorrhage at the menopause was pathological and believed, too, that the family physician was very prone to believe that every case at a certain age in which there was a loss of blood meant "change of life."

Dr. Murray closed the discussion. The main feature she wished to present in her paper was that excessive hemorrhage at the menopause was pathological, and not physiological.

Gigli's Operation (Pubiotomy) in Private Practice, with Report of a Case.—Dr. John Adam Schmitt read this paper. (See page 833.)

Dr. S. Marx did not believe the case reported by Dr. Schmitt was one of generally contracted pelvis, but simply a flat pelvis, the rachitic point being excluded by the history. Pubiotomy or symphyseotomy could never be made an elective operation, and, in this case, the tentative application of the forceps to the head above the brim might possibly have delivered the child through an unsectioned pelvis. He would attempt neither of these measures without first trying others. One or two tentative tractions upon the head of the child would inform us whether something could be accomplished or not. Pubic section would never, in his opinion, become elective, and other operations must anticipate it.

Dr. George L. Broadhead said that he had discarded symphyseotomy and pubiotomy long ago in favor of cesarean section.

Dr. William S. Stone did not believe that pubiotomy should have been done in the case reported by Dr. Schmitt.

Dr. Herman L. Collyer said that he believed he performed the first symphyseotomy in a tenement or private house on record, and his own experience would make him forego doing anything in the line of a pubiotomy or symphyseotomy outside of a hospital because of the dangers of sepsis. The operation should by no means be undertaken by the general practitioner.

Dr. Schmitt said that those who attempted such operations and failed were naturally prejudiced against it. Judging from reports received from hospitals, pubiotomy was the operation of the future. Pubiotomy was a simple operation in suitable cases.

Vaginal Cesarean Section.—Dr. J. Riddle Goffe gave in brief the indications for the operation of vaginal cesarean section, its history and its results. This operation should not be confused with a simple section of the cervix. The incision went not merely through the cervix, but into the real body of the uterus, and the child was removed through that incision. This method did not enter into competition at all with the abdominal cesarean section. The abdominal cesarean section was performed because of some obstruction in the bony canal; the vaginal cesarean section, because of obstruction in the soft parts. The technique of the vaginal cesarean section was simple and consisted in a transverse incision in front of the uterus across the vagina, a dissection of the bladder from the cervix and anterior wall of the uterus up to the fornix and peritoneum. The cervix was then grasped by the forceps and an incision made from the external os up to the point where the peritoneum was attached, its length varying from four to six inches. The bladder could be lifted up by a retractor, and the work was not blind work at all. If

necessary a posterior incision was made up to the attachment of the peritoneum posteriorly, care being taken at all times not to enter the peritoneal cavity. After the uterus was opened it was a simple matter to apply the forceps or possibly introduce the hand and turn and deliver the child. The general indications for the vaginal cesarean section was some obstruction in the soft parts, in the cervix or lower segment of the uterus, and the most striking indication was puerperal eclampsia. This was the most rapid method of emptying the uterus, requiring not more than six to ten minutes. Another striking indication was an undilatable cervix. If the child was dead and the cervix undilatable after labor pains had existed for a long time, it was indicated. Dr. Goffe also considered carcinoma of the cervix, myoma, rigidity of the cervix, premature detachment of placenta, etc. In cases of intrauterine hemorrhage life could be saved by a prompt vaginal cesarean section. Also vomiting of pregnancy in some cases was an indication for this operation. Again, there were certain conditions of the mother that indicated this operation, such as organic heart disease, where it was believed the woman could not go through labor. Again in edema of the lungs or certain affections of the kidneys, this operation was indicated when it became necessary to empty the uterus promptly. There were certain indications for the vaginal cesarean section when the interest of the child was to be considered. For instance, when the mother's death was imminent, this operation should be done before the death of the mother. Vaginal cesarean section had been resorted to for all these indications by various operators in various parts of the world, and it was done more often in Germany than elsewhere. Dr. Goffe reported one case, a woman who was six months pregnant, with a dead fetus, who was in labor for seven days before the case came to his knowledge. He performed vaginal cesarean section, a very simple matter in this instance, turning and delivering the fetus by the foot. Catgut was used in sewing up the incisions. This operation had come into sharp competition with the heavy dilators. Among the advantages of the operation were comparative freedom from sepsis, the peritoneal cavity not opened, rapidity of work, the ease with which it was performed, and its real simplicity, no nervous strain or shock attending it. The results of this operation were entirely successful. It had met the expectation, and all who had used this method were enthusiastic about it.

Dr. S. Marx said he had done the operation three times and knew its value. He thought that Dr. Goffe went too far when he stated that this particular operation was advisable after the patient had been six days in labor in the case reported by him. In this case the cervix would have been drawn up, and a better operation, he believed, would have been the introduction of the hand or bougie. The Bossi dilator he condemned most emphatically and in unmeasured terms.

Dr. Herman L. Collyer said that the object of the operation appeared to be to prevent inevitable lacerations, which were likely to occur in the broad ligaments, which would be followed by severe hemorrhage, often fatal. Therefore the cervix should be slit posteriorly to prevent this. This he believed to be the real object of the operation.

Dr. A. Brothers said he had used the Bossi dilator in eclampsia and had dilated manually as well. There were cases in which the hand could not dilate. Section of the uterus he believed had a place in gynecology, not only at full term, or at the sixth month, but even much earlier.

Dr. Goffe, in answer to Dr. Marx's criticism, said that, in the case reported the cervix had not dilated, and had not taken a part in the development of the uterus, etc., but was a solid cervix. Regarding the statement about the hand as a dilator, and not the heavier instruments, such as Bossi's, he answered that if the hand sufficed, not so much place in literature and discussions would be given to dila-

Dr. Philander A. Harris, of Paterson, also discussed Dr. Goffe's remarks.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 19, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	383	193
Diphtheria	370	54
Measles	1252	37
Scarlet Fever	305	28
Smallpox	.....	.....
Varicella	83	.....
Typhoid Fever	15	4
Whooping Cough	37	5
Cerebrospinal Meningitis	31	32
Malarial Fever	.....	.....
Totals	2,476	353

The Sterilization of Flexible Catheters.—Adrian recommends the following procedure: The instruments are subjected to the vapors arising from a 1 or 2 per cent. formalin solution at a temperature of 60 to 75° C. An exposure of three minutes suffices to insure destruction of all germs, the instruments are not damaged, and the amount of formalin adhering to them is so slight that it is not necessary to rinse them off in sterile water.—*Centralblatt für die gesammte Therapie.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending May 19, 1906:

SMALLPOX—UNITED STATES.

		Cases.	Deaths.
Florida, General	Apr. 28–May 5.	10	..
Illinois, Chicago	May 5–12	1	..
Indiana, Terre Haute	May 5–12	1	..
Kentucky, Covington	May 5–12	1	..
Maryland, Baltimore	May 5–12	1	..
Crisfield	May 7	1	..
Minnesota, General	Apr. 23–May 7	18	..
New Hampshire, Portsmouth	May 10	1	..
New York, Buffalo	May 5–12	1	..
Haverstraw	May 9	1	..
New York	May 5–12	3	2
Roswell	Apr. 1–30	2	..
Ohio, Toledo	Apr. 28–May 5	1	..
Rhode Island, Pawtucket	Mar. 23	4	..
Tennessee, Knoxville	May 5–12	1	..

SMALLPOX—INSULAR.

Philippine Islands, Manila	Mar. 17–31	2	1

SMALLPOX—FOREIGN.

Africa, Cape Town	Mar. 24–Apr. 17	14	..
Freetown	Apr. 18		Present
China, Hongkong	Mar. 24–31	12	11
Shanghai	Apr. 7–14	..	1
Ecuador, Guayaquil	Apr. 12–24	..	5
Gibraltar	Apr. 22–29	4	1
Great Britain, Bristol	Apr. 21–28	4	..
Glasgow	Apr. 27–May 4	1	..
India, Bombay	Apr. 10–17	..	14
Calcutta	Mar. 31–Apr 7	..	137
Karachi	Apr. 8–15	21	17
Madras	Apr. 7–13	..	30
Rangoon	Mar. 31–Apr. 7	..	61
Italy, General	Apr. 19–26	38	..
Japan, Formosa	Mar. 1–31	5	..
Yokahama	Apr. 7–14	2	..
Netherlands, The, Flushing	Apr. 21–May 5	3	..
Rotterdam	Apr. 29–May 5	1	..
Russia, Moscow	Mar. 31–Apr. 21	37	6
Odessa	Apr. 7–21	16	4

YELLOW FEVER.

Ecuador, Guayaquil	Apr. 12–24	..	7

CHOLERA—INSULAR.

Philippine Islands, Manila	Mar. 17–24	1	1
Provinces	Mar. 17–31	27	23

CHOLERA—FOREIGN.

India, Bombay	Apr. 10–17	..	26
Calcutta	Mar. 31–Apr. 7	..	43
Madras	Mar. 31–Apr. 6	..	1

PLAGUE—INSULAR.

Hawaii, Honolulu	May 12–16	..	5

PLAGUE—FOREIGN.

India, Bombay	Apr. 10–17	..	875
Calcutta	Mar. 31–Apr. 7	..	301
Karachi	Apr. 28–15	194	162
Rangoon	Mar. 31–Apr. 7	..	72
Japan, Kobe	Mar. 24 Apr. 7	2	1

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 22.
Whole No. 1856.

NEW YORK, JUNE 2, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

MEDICINE AND LAW IN RELATION TO THE ALCOHOL, VENEREAL DISEASE, AND TUBERCULOSIS PROBLEMS.*

BY S. A. KNOPF, M.D.,

NEW YORK.

IN view of the vastness of the subject that I have chosen to speak on, it will be possible to touch only on some of the vital points at issue, and perhaps throw out a few suggestions as to how to attack these problems. My main purpose in presenting such themes before this distinguished gathering of jurists, sociologists, and physicians is to arouse a discussion so that we may hear the opinions of the men who are authorities on one of these subjects. To get their advice will be of great value, not to speak of the inspiration we are sure to receive.

In consideration of the urgency of the case and the vital issues at stake which demand a solution of these problems, we shall all have to put our shoulders to the wheel, and it would seem that the members of this society are preeminently fitted to take the initiative.

I am not going to burden this paper with many historical data or statistical figures; I intend to mention only a few points concerning the probable origin of these problems and to speak of the relative frequency of the diseases under consideration. There is a passage in Ricord's "History of Syphilis" which traces the origin of alcoholism and illegitimate intercourse back to the time of Abraham and Lot. The fifteenth chapter of Leviticus evidently proves that the great Jewish lawgiver, Moses, had in view the prevention and cure of diseases liable to follow sexual intercourse. A regulation referring to this was promulgated about 2400 Anno Mundi. For the first authentic and scientific description of tuberculosis we are indebted to Hippocrates, who lived from 406 to 377 B. C. He very characteristically speaks of consumption as the disease most difficult to treat and which proves fatal to the greatest number.

I do not need to say anything to an audience of this type about the frequency of alcoholism, the thousands of cases afflicted with acquired or inherited syphilis, or the prevalence of tuberculosis in all countries we like to call civilized. The more seemingly civilized a country is the more terribly afflicted is it with all three of these diseases.

From the following table of statistics published by the Department of Commerce and Labor in Washington, it will be seen that we are sixth in the list of alcoholic consumers.

COUNTRIES.	POPULATION.	PER CAPITA CONSUMPTION
United Kingdom	42,373,000	4.99
France	38,666,000	10.21
Germany	58,843,000	5.53
Italy	33,189,000	6.61
Russia	134,272,000	1.39
Belgium	6,985,000	7.33
Sweden	5,032,000	3.05
United States	80,372,000	3.23

*Read by invitation before the Society of Medical Jurisprudence at its regular meeting, March 12, 1906, held at the New York Academy of Medicine.

Do not think me unpatriotic if I say that we should come much nearer the head if every source of alcohol consumption had been considered in these figures. I have it on good authority [1] that there is more alcohol sold in this country in the shape of patent medicine than is actually dispensed in whiskey over the bar.

If you doubt the accuracy of this statement, permit me to refer you to the list of analyses by my late friend, Dr. Abbot of Boston, published in his report on food and drug inspection for the year ending September 13, 1902; the publications of Mr. Bok in the *Ladies' Home Journal;* of Mr. Ashbel P. Grinnell, in the *Medico-Legal Journal;* of Mr. S. H. Adams, in *Collier's Weekly;* and an article in the *Journal of the American Medical Association*, October 22, 1904. Dr. Abbot's list shows that sixty-seven analyzed patent medicines, some of them advertised as entirely harmless, or as a cure for inebriety, contain from 6 to 44 per cent. of alcohol.

According to the estimate of my venerable friend, Prof. A. Jacobi of this city, "The American people do not spend less than $200,000,000 annually for patent medicines"; surely we must ascribe a large amount of alcoholism to this origin.

From the very nature of venereal disease accurate figures are not obtainable except from the Army and Navy statistics, where men are subjected to regular medical examination. In Munson's[2] work on military hygiene the following table is given:

In Germany, among	every	1,000	soldiers	27.9	are	affected.
In Russia,	"	"	"	36.0	"	"
In Japan,	"	"	"	36.0	"	"
In France,	"	"	"	40.9	"	"
In Holland,	"	"	"	48.1	"	"
In Austria-Hungary	"	"	"	61.0	"	"
In the United States	"	"	"	73.7	"	"
In Great Britain (home statistics)	"	"	"	173.8	"	"
In Great Britain (Indian statistics)	"	"	"	522.3	"	"

Estimates of the frequency of venereal disease among the civil population have been made by Fournier of Paris, Weiss of New York, Kober of Washington, Neisser of Breslau, and Parks of London. According to these authorities, one-seventh of the population of Paris is syphilitic, 12 per cent. of that of Berlin, 15 per cent. of that of New York. Parks, in speaking for England, says: "It is a question whether a large number of the young men of the upper and middle classes do not suffer in youth from some form of venereal disease. In the lower classes it is perhaps equally common."

Neisser holds that, possibly with the exception of measles, gonorrhea is the most widespread of all diseases. How very prevalent tuberculosis is is

well known to most of you, and I will not detain you with detailed statistics, but simply state that each year the world yields up 1,095,000, each day 3,000, each minute two of its people, as a sacrifice to this plague. Of the 80,000,000 individuals now peopling the United States, more than 10,000,000 must inevitably die of this disease if the present ratio is kept up. According to some statisticians every seventh, and according to others every sixth death is due to tuberculosis.

What are the consequences of alcoholism, of the injudicious, excessive use or abuse of alcoholic beverages? Leaving aside the physical suffering which the intemperate individual brings upon himself and which comes most frequently under the observation of the physician, I ask you to address your inquiries concerning the social, the mental, and moral results of alcoholism to the directors of reformatories, prisons, sanatoria, and insane asylums. They will all tell you that the majority of the inmates of these institutions are there as the direct or indirect results of alcoholism.

Insanity is on the increase, particularly in our state. According to the annual report of the Commissioner of Lunacy for New York, there was in 1892 one insane person out of every 337. Now there is one in every 299. The commissioner considers the condition grave. There are 27,406 insane in the public and private institutions of the state and 6,000 insane are maintained in their own homes. It cost the state $4,593,477 to care for the insane last year.

Not all the crime committed during an attack of alcoholic mania or as a consequence of chronic indulgence in alcohol is punished in our prisons or recorded by our statisticians. Ask our judges of police and divorce courts, our settlement workers and friendly visitors for the most frequent cause of social misery, domestic dramas, privation and want, and they will all tell you that drunkenness is most frequently at the bottom of it all. What is the economic loss to a community arising from the over-indulgence in alcohol? Did drunkenness not exist we could do with half of our police force and police courts. Our prisons, reformatories, asylums, and alms houses would be depopulated instead of being overcrowded. In many homes where now there is misery, suffering, want, and discord, there would be happiness and plenty if temperance could take the place of intemperance. Instead of many children which now bear the stigma of degeneracy as evidence of parental alcoholism there would be strong and healthy children not hampered for life. Permit me to mention here that in sanatoria for tuberculous children, where careful statistics are taken of the parentage of the little patients, it has been shown that of the largest number one or both parents were addicted to the use of alcohol.

Alcoholism often paves the way and leads to sexual over-indulgence and illegitimate relations. The anamnesis of a case of contracted syphilis or gonorrhea in a young man will only too often reveal the fact that the sexual act was preceded by excessive alcoholic indulgence. Syphilis and gonorrhea, although less visible on the surface, are nevertheless productive of an infinite amount of physical, mental, and moral suffering. In view of the extreme contagiousness of these diseases and, in the case of syphilis, of the possibility of direct hereditary transmission and in view also of the strong desire of nearly every individual who has contracted a venereal disease to keep his affliction a secret, I am not quite certain whether this disease is not the greatest and most frequent evil of the three great diseases of the masses. The amount of misery produced by venereal disease must certainly be appalling. The consequences of a not or insufficiently treated venereal disease are two well known to need to be mentioned here.

The master work of my friend, Dr. L. Duncan Bulkley,[3] on Syphilis Insontium, will tell you of the misery that results to the innocent through inherited or acquired infection. The suffering entailed on the trusting wife who becomes infected with the gonococcus germ and whose very life is often endangered thereby is graphically described by all the modern authors of works on gynecology. The works of Fournier, Lazare, Keyes,[4] Morrow,[5] Weiss,[6] and others will enlighten the student on the many other phases of syphilitic and gonorrheal affections which I have not time even to mention here. The economic loss and social misery in our own as in other countries is of the greatest concern to the physician, statesman, jurist, and sociologist.

Dr. S. M. Burnett of Georgetown University believes that 15,000 of the 50,000 blind persons in the United States lost their sight from gonorrheal infection, involving a cost to the commonwealth of seven and one-half millions annually.

Concerning the sterility following gonorrheal infection, Dr. Kober[7] says: "The destructive effects of gonorrhea on the procreative functions have been very properly emphasized in connection with the 'race suicide problem' and are certainly startling when we are told that 50 per cent. of all involuntary childless marriages are due to this cause. From what has been said thus far on the subject of venereal disease you will agree with me when I say that the loss to a country which must result from the expense of caring for the blind whose condition is due to gonorrheal infection; the idiotic, degenerate, or pauper due to a syphilitic parentage or direct syphilitic acquisition; and from supporting the acute and chronically afflicted during the time he is incapable of work is well nigh incalculable.

Tuberculosis, the last of the problems under consideration, is a chronic, infectious, communicable, preventable, and curable disease. These words in themselves are explanatory of the nature of this malady. I have spoken of the physical and mental suffering of the alcoholic and that of the individual afflicted with venereal disease, and the misery they cause to those living with them. I wish I could be spared the task of relating to you what this preventable and curable disease, consumption, entails upon thousands and thousands of our fellow-citizens. It is the more painful in that it causes the greatest suffering among the poor. The prognosis of pulmonary tuberculosis often depends just as much and even more on the pocketbook of the patient as on all other factors. There is no more painful duty to be performed by the physician than to tell the poor man or the one in moderate circumstances that to cure him of his tuberculosis his work must be abandoned for at least a year, and that, in addition to this, he must have as good, if not better food, and better care than he ever has had before. The most frequent sufferers from tuberculosis of all are those living in our tenement homes with lack of air and light and often with scarcely the barest necessities in regard to food and clothing.

The greatest chance of cure for the patient of little or moderate means will be found in the sanatorium, where, when received in time, he has 80 per cent. of chances of being cured and lastingly so; and no particular climate is essential for the cure of these invalids. Experience has shown that our own home

climates are admirably adapted to the cure of our consumptives, and our own little seacoast sanatorium at Sea Breeze has surpassed all expectations in the cure of scrofulous and tuberculous children. But our sanatoria for consumptive adults and tuberculous children are few. A number of efforts to establish them in our state have been dwarfed by the inhuman Goodsell-Bedell law which was enacted during Governor Odell's term of office. This law is a disgrace to our statute book and the sooner it is repealed the better. I charge its promoters with having created a veritable epidemic of phthisiophobia. Thanks to this law, it is virtually impossible to establish a sanatorium anywhere in the state of New York. That such an official phthisiophobia must be invariably followed by outbreaks of private phthisiophobia is evident. Careful and conscientious consumptives who are no more of a menace to their fellow men than a well person have been treated like outcasts. Well equipped and well conducted sanatoria in which one is safer from contracting tuberculosis than in a Pullman or street car have been designated as plague spots. Thanks to such follies, thanks to the indifference of statesmen and philanthropists and often also to city fathers, thousands of our fellow-citizens must die, not because their disease is incurable, but because there is no place to cure it.

Concerning the economic loss that comes to a community because it fails to treat its consumptives at the right time and in the right place, I could give you figures that run into the billions, but I will confine myself to our own city and will give you the figures of our own Health Commissioner, Dr. Darlington. In a recent publication on the cost of tuberculosis in New York City, he says: "Estimating the value of a single life at $1,500—not necessarily a high estimate—and taking only those lives between 16 and 45 years, the loss of life in this city alone from tuberculosis amounts up to the startling sum of $23,000,000 annually."

How can medicine and law combine to combat these three great medico social diseases whose causes and social symptoms I have only been able to point out to you in a very meagre way, but the gravity of which I hope I have succeeded in impressing upon your minds?

What may we do to combat alcoholism? I would suggest that, as far as practical, laws be enacted to prevent habitual drunkards from marrying. The laws making it a felony to sell liquor to a minor, or to administer strongly alcoholic beverages or strong liquors to a child without a physician's prescription should be strictly enforced. There should be a law which would make it obligatory to have a label placed on every bottle of patent medicine stating the exact analysis of its contents, with such ingredients as alcohol, opium, or other poisons in large type.

The pure food bill now before the House of Representatives, which contains an important patent medicine section, I hope will pass and become a law. May I here incidentally remind you that this bill will probably be voted on ere long, and I beg all of you, physicians, sociologists, and philanthropists, to write to your respective congressman, requesting him to support the bill as it stands, warning him that the attempt to render inoperative or ineffective the patent medicine provision is merely an effort to perpetuate dangerous fraud.

The section referred to in the pure food bill provides that (1) a proprietary medicine shall be regarded as misbranded (hence illegal) unless it be labeled with the amount or percentage of alcohol, of opium, of cocaine, and of any other poison contained therein; (2) that a proprietary medicine shall be regarded as misbranded if it bear a label misstating the nature of the medicine or any of its ingredients. To take a concrete case: A consumptive "cure" containing alcohol and opium must have the fact that it contains these substances printed plainly on the label, and it must not be called a *cure*, for that claim is a misstatement and fraudulent.

Mothers should be taught the nefarious influence of soothing syrups and other sleeping medicines upon children. I hold the highly nervous state of our children, which is produced by too much mental work at school and at home, and not enough sleep nor outdoor life, largely responsible for the readiness of our young people to acquire the alcohol habit. A still greater cause of the nervous wrecks among our rising generation, particularly among the working population, is child labor. This fearful disgrace to our nation is responsible for much of the intemperance of our young people, whose wrecked nervous systems cannot resist the temptation to drink. According to Mrs. Florence Kelly, Secretary of the National Consumers' League, well known for her work in this cause, there are not less than two million children earning their living in factory and shop in the United States. Child labor, not only in factories, but also that kind of labor imposed upon children by thoughtless or cruel parents in their homes, should be done away with by the enforcement of rigid child labor laws. To prevent our school children from becoming nervous wrecks because they work too much and play too little and do not sleep enough, our school boards and pedagogues should make new curricula tending to educate the childrens' minds without detriment to their physical development and well being.

Rational temperance should be taught in schools and these temperance lessons should be adapted to the age and understanding of the pupil. In college life the drinking of alcoholic beverages should be discouraged.

What suggestion have I to offer to prevent alcoholism among adults who are free and independent American citizens? I believe in the Gothenburger system, which consists in the manufacture and sale of alcohol by the government and giving the dispenser of alcohol a salary so that no benefit accrue to him no matter how much alcohol he sells, but I fear this system is not practicable in our country. Perhaps even a law limiting the manufacture of alcoholic beverages is not yet feasible, but I believe it is possible to limit the number of licenses of saloons. However, it is my firm conviction that through the building of model tenement houses, the creation of more parks and play grounds and healthful places of amusement, open Sundays and weekdays, where the laborer can partake of non-alcoholic drinks and enjoy the society of his friends, will do more to do away with alcoholism than dragoonic laws.

I have deep sympathy for the laborer who, after a hard day's work, before returning to the dark, dreary, cheerless tenement home for which he has often to pay an exorbitant rent, stops at the brightly lighted saloon and takes a drink. He meets there the friend which he cannot receive at home and cannot meet at the clubhouse, for he is not a member of any club. Add to the above suggested places of amusement a smoking room in all public libraries, a number of hot coffee stands in winter and plenty of fountains with pure, cool drinking water in summer, and you will have another feature to discourage alcoholism. There is one lack in our American city which I am convinced leads many a man into a saloon to take a drink which he would not do did not the calls of nature make a demand on him

to go somewhere. I do not believe there are, outside of the parks, here in New York more than a dozen public urinals. Paris, which is certainly a beautiful city, has many thousands. With a little esthetic taste they can be hidden away behind shrubbery or neat screens. I venture to say that the installation of a few hundred of such places would add to the comfort of many and would certainly reduce the amount of liquor sold. It is for our city fathers to look after this matter. However, in our eagerness to attack these various problems in our city, let us not forget our fellow-citizens in the country, the farmers, their wives, children, and help, particularly of the poorer classes. The humdrum existence of many farmers' families is often responsible for alcoholism and consequent insanity, or insanity independent of alcoholism. We delight in taking the mothers and children of the poor in our large cities on excursions into the country. Whoever thinks of taking the wives and children of the poor farmers to the city to show them the marvels of modern city life and the great inventions of our times? I am sure these poor country women and children would enjoy an excursion to the city as much as our tenement dwellers enjoy an excursion to the country.

This offers a new field for practical philanthropy destined to become a factor to aid in the solution of all the three problems under consideration. I am convinced that it will be necessary to stem the tide of emigration from village to city and reverse this tendency as far as is in our power. Statesmen should protect the interests of the farmer so that farming should have more attractions to the rising generation than it has had during the last few decades. Philanthropists should aid the statesmen by endowing institutions for instruction in scientific and profitable agriculture, and also by providing healthful amusements; good libraries, and other educational institutions in country districts, thus making living in the country more interesting and attractive to the young people.

The greatest source of intemperance in this country I believe is to be found in our habit of treating. The habit of going with a number of friends to a saloon and then alternately treating the crowd has ruined many a young man and made of him a moral and physical wreck. The young man starting out in life should take with him the moral training which will enable him to be a gentleman, and be considered a polite gentleman, though he absolutely refuses ever to enter a liquor saloon in order to treat or be treated to drink.

I believe, however, that in a city of such a cosmopolitan character as ours it is wise to open saloons on Sundays certain hours after church service. At present there is a bill pending at Albany called the Tully-Wainwright Local Option Bill, which is intended to do away with the present Sunday laws. The bill provides that in any "residence district" of 300 or more voters in any city, or 100 voters in any town, the residents may petition to have the sale of liquor stopped for a period of two years. No less an authority than the Right Rev. Vicar General Lavelle of St. Patrick's Cathedral, who is well acquainted with the needs of the masses, has written a letter to Senator Tully advocating the passage of the measure but indicating clearly that he would also like to have the present law amended so that in certain districts the sale of beers would be permitted during part of each Sunday. In his letter to Senator Tully commending the bill, Mgr. Lavelle said in regard to this: "Respectable people of small means should have an opportunity on Sundays to get proper beverages for their dinners in their homes. The same is true of those who go to the beaches and other resorts for recreation. I am aware that many people object to this permission on the ground that it would be only an opening wedge for universal and harmful indulgence. But this objection loses all its weight when we realize that we are getting a law that can be enforced to the very letter, one which the people themselves will be anxious to see properly executed as the officials whose duty it is to carry out its provisions." I believe that having the saloons open for a few hours on Sundays would cause less drunkenness instead of more.

From the little I know of club life, rather less alcohol is used by the members on Sundays, certainly never more, and why? Simply because there is no restriction placed upon the consumption of liquors. I have already said that the saloon is the poor man's club. Let us give him the same rights as are accorded to the member of the fashionable club. The tendency to lay in a supply for Sunday or to fill up on Saturday to last over Sunday, to get it on the sly or through side door or family entrances or with the aid of an indigestible Raines law sandwich, does not lessen but rather increases the consumption of alcohol. Forbidden fruits seem to taste sweeter. Only by means of these increased receipts is it possible for the saloon-keeper to pay high enough tribute to the powers that be to be able to carry on his trade unmolested even on Sundays. The laws of this Empire State relating to closing saloons and places of amusement on Sundays are absurd. I have seen some strange, not to say profane, things at a New York place of amusement which had advertised its performance as a "Sacred Concert." The fact that so many of our so-called Sunday-closing laws are so ridiculous makes it a relatively light matter for the conscience of some to break the law by bribe-giving or bribe-taking. Temperance societies and societies whose members have pledged themselves to drink only with meals should certainly be encouraged. There exists in Germany *ein Aerztlicher Abstinenz-Verein*, and we have here in America a total abstinence society composed of physicians. It is for my esteemed friends of the legal society to form such a society now if they feel so disposed. To the best of my knowledge there exists as yet no society of total abstainers among lawyers.

What are we to do with the chronic drunkards arrested and rearrested—those, for example, who spend half of the year in our alcoholic wards in Bellevue or in the workhouse? In some European countries the habitual drunkard is disfranchised and afterward put under guardianship. I do not know whether such radical measures would be feasible in a republic. I believe, in the end, it would be better for the individual and the country if we would establish special sanatoria for the treatment of alcoholism where the well-to-do should pay and the poor should be received gratuitously. We have people's sanatoria for consumptives, we have large asylums for the insane, why not try to cure those afflicted with alcoholism, which is as much a disease as any other affliction? To cure him at the right time and in the right place when there is still hope of making out of the drunkard a useful member of society, is certainly better and more economic than to wait until he commits a crime or is sent to the insane asylum, or hospital, or almshouse as incurable.

Our lawmakers should not only see to it that such institutions should be established by states and cities, but should also enact laws whereby the fraudulent institutions claiming to cure alcoholism by myste-

rious and often dangerous methods should be wiped out of existence.

You are all familiar with the fearful results which come to the unfortunate individual who imbibes beverages containing wood alcohol. Blindness and the most severe nervous and mental disturbances are often the result. No law can be too severe which is intended to stop the sale and dispensing of wood alcohol for internal uses.

Before leaving this subject, may I say one more word on a cause of alcoholism which I believe is little known as such and for which only our methods of education the future wives and mothers can be held responsible. I claim that bad cooking and the injudicious selection of foods induce the desire for alcoholic stimulation. Let us have more cooking schools and make plain and good cooking a part of the curriculum of all girls' schools. Let such cooking lessons be based on economic, hygienic, sanitary, and physiological principles. It is more important to know how to cook a good, substantial, and nutritious meal, composed of soup, meat, and vegetables, than to know how to make fancy cakes and jellies.

How may we combat the second disease on our program? I begin again by suggesting a law making it prohibitory for people suffering from syphilis or gonorrheal diseases in any of the infectious stages to contract marriage.

I believe in making these diseases reportable to the Board of Health with such restrictions as assure the unfortunate sufferer protection against publicity. The only condition I would insist upon is that the reporting physician should receive a leaflet of instruction issued by the Board of Health, explaining to the patient, to whom it should be handed, the disease and the precautions he should take to prevent infection.* I believe, furthermore, in educating the people at large by lectures and pamphlets, and in instructing school children and adolescents concerning the nature of these diseases. The teaching in schools and colleges might be done by the school physicians and the lessons adapted to the age and understanding of the pupils.

The subject of licensing prostitution I approach with diffidence. Our greatest syphilographers do not agree on it. There are as many opposed to it as in favor of it, and both sides have statistics supporting their arguments. Here in America, in addition to the difference of opinion among medical authorities on the subject, there is a strong popular prejudice against laws regulating prostitution. What, then, can we do to minimize the dangers arising from this social evil? Besides the educational campaign already suggested, there should be liberal provision for the treatment of venereal diseases in special dispensaries with evening classes, and, above all, special hospitals. I would prefer to have different hospitals for each sex, and the unfortunate prostitute should receive the same kind and considerate treatment which is extended to the paying male patient, whether she pays or not. I insist upon this point, for I have witnessed in some European hospitals the most inconsiderate and unkind treatment of these unfortunate women, so that I did not wonder that some of them vowed, when once discharged, never to pass the portals of a hospital again.

And now a word as to how it may be possible to strike at the root of this evil by preventing the woman from becoming a prostitute and the young man from becoming affected by illegitimate intercourse. Let us as physicians, jurists, and sociologists, acknowledge that at the bottom of it all is our present social fabric. Prostitution gets its recruits, to no small extent, from the unfortunate girl who has loved, not wisely, but too well. Her own sister will stamp her as an outcast and her child as a bastard. A little more humanity, a little more sisterly love, a little more compassion, is needed here. Let woman be more womanly toward her sister who may have fallen, but nine times out of ten through no fault of her own. A helping hand stretched out to the unfortunate child mother will often prevent her from becoming a prostitute.

A few more homes where the unfortunate girl who has become a prospective mother may be received several months before her confinement and kindly cared for till all is over, a few more homes where the unfortunate woman of the street may be received and another chance be given her, and prostitution is bound to diminish.

The underpaid factory or shop girl is another frequent recruit for prostitution, often by reason of necessity for her daily wants, and sometimes by her desire for finery. Let all philanthropists among the manufacturers and large store keepers, while still at the head of their enterprises, remember this. It is a greater philanthropy to pay the girls in their employ living wages so that the temptation to go wrong will be removed, than to leave millions in their last will and testament to cathedrals, hospitals, and similar charities.

Better wages for our young men and more model tenement houses, with reasonable rents, will encourage many young men to enter the matrimonial state and rear a family. It must be obvious to all of us that early and happy marriages are the best means to combat prostitution and venereal disease. I think it is absolutely wrong for fear of indelicacy to keep the masses in ignorance concerning these vital matters.

I doubt the wisdom of our lawmakers, city fathers, and reformers in perpetually hounding the unfortunate prostitute. These women are driven away from one part of the city only to turn up in another, and, instead of confining the evil to one section, it is spread all over. I have the strongest doubts that the social evil as such can be suppressed in a city like New York by no matter how strict a police regulation. On the other hand, to limit the evil to some portion of our city, a district which could be properly controlled by an efficient police, would stop the concomitant thievery and robbery and greatly diminish that still greater crime of having men live on the shame of women. Remove by sensible and just laws the necessity of bribe-giving, and the bribe-giver will cease to exist. I do not like this perpetual cry of some against a corrupt police, an inefficient judiciary, etc., etc.

Let us make laws that can be enforced. Remove the ridiculous character of some of the laws, and you will find the vast majority of our policemen true guardians of the peace and willing to perform their duty, and our judiciary you will find as spotless as any.

It is for you lawyers and lawmakers, members of this Society, if you are in accord with these views, to take the initiative in this direction. I believe I can guarantee you the hearty support of the medical profession in this matter. My faith in mankind and womankind and in the progress of humanity at large is too great not to believe in the possibility of ultimate victory over the social evil. It will not be

*The German Society for Combating Venereal Disease has just issued two most excellent circulars for such purpose.

by harsh suppression, but by an intelligent, humane repression, by improving the social condition of woman and the masses in general, by tolerance instead of prosecution, by evolution instead of revolution.

Permit me before taking up my last subject, tuberculosis, to suggest a way to educate the masses as to the prevention of alcoholism and venereal diseases. Let some philanthropic person, or, better yet, the Government, offer a prize for the best popular essays, one on how to prevent alcoholism, and one on how to combat venereal diseases as afflictions of the masses. Let the prize jury be composed of medical, legal, and sociological authorities. The essay should be divided into several sections, adapted to children, to the adolescent, to man, and to woman. The best and most suitable essays submitted should be printed and distributed by the Government, free or at cost.

The tuberculosis problem, which has attracted the attention of the crowned heads of Europe and the President of our own, of the French, the Swiss, and even the South American republics, has become of late most intense. Local, national, and international associations for the study of tuberculosis exist nearly everywhere. There exists an international bureau, and international congresses are held every few years. The next one is to be held in our own country in 1908. It would thus seem that much was being done; but let me assure you, there is more to do. As in the two preceding diseases, marriage between tuberculous and healthy, unless in exceptionally well arrested cases, should be discouraged. As to the procreation of tuberculous children I have strong convictions, but I know that there are many men and women, inside and outside the medical profession, who differ with me. However this may be, I am willing to take the responsibility before the law and my God for each time I have taught a tuberculous husband and wife not to procreate a race predisposed to tuberculosis; and, with all due respect to the opinion of others, as a physician with, I may modestly claim, a somewhat larger experience among the poor and poorest of the poor, the middle classes, and also among the well to do, and as a student of sociology as well as of preventive medicine, I am not for quantity but for quality. Education along this and other lines teaching the measures to prevent tuberculosis should be still more encouraged.

Our Health Boards should be upheld by the law in their efforts to diminish the source of infection arising from carelessly deposited sputum, which, when tuberculous, is a frequent source of infection. In our railroad stations and in public places it does not suffice to put prohibitory signs. Such places should also be provided with a number of well-kept spittoons. Placing signs over these receptacles reading "Spit Here," instead of placing the "Don't Spit" signs elsewhere, will materially diminish this sort of infection. Laws protecting us against the dangers of tuberculous food substances should be rigorously enforced. Sweeping the streets in a dry state should be counted a crime against our fellow men, and the laws should be enacted accordingly. Appropriations to enable the Street Commissioner to give us clean streets and the Health Commissioner to give us clean air should be forthcoming. Filthy streets and a smoky atmosphere are disease producing and particularly productive of diseases of the respiratory tract, such as tuberculosis, pneumonia, grippe, etc.

Our fellow practitioners in law and medicine of the gentler sex will, I know, be willing to help the cause by a sensible dress reform, particularly by wearing the short rainy-day skirt, for their own comfort as well as for an example to others. They will thus lessen the real danger there is in wearing trailing skirts in the street, which so often do the scavenger's dirty work. In schools and colleges, factories, and workshops, offices, department stores, and Government concerns the simple precautions to prevent the spread of tuberculosis and to assure sanitation and proper ventilation should be practised and taught. Since I am addressing judges and lawyers, I ask you to make your influence felt in rendering sanitary our prisons and reformatories in insisting that tuberculous inmates are isolated and treated. I also beg of you not to consent to the discharge of a prisoner because he is dying of tuberculosis unless you are absolutely sure that he will be well cared for and not become a new source of infection and a burden to the community.

The medical profession should do its utmost to diagnose and recognize the early cases of tuberculosis, and city and State governments should enable the medical profession to send the poor and deserving cases to sanatoria where they have the best possible chance of being cured.

The Goodsell-Bedell law should be repealed and a sufficient number of sanatoria should be built for consumptive adults and for scrofulous and tuberculous children. The unscrupulous quack advertising "sure consumptive cures" should be prosecuted to the full extent of the law. It should be widely published that there is no secret remedy and as yet no specific for the cure of consumption, that our best means to this end are fresh air, good food, pure water, and careful medical supervision.

What I have said regarding child labor, too much school work, poverty, want, and unsanitary homes as predisposing factors to alcoholism, I can only repeat when speaking of tuberculosis. But in addition I may say that the belief of the masses that alcohol is a good preventive for tuberculosis, or a good remedy in consumption, is erroneous. On the contrary, alcohol is responsible for more tuberculosis than any other one cause.

I have presented to you in a very fragmentary way the causes and social symptoms of three of our most widely spread diseases of the masses. I have ventured a few suggestions to remedy the evils, but my hope lies in the inspiration we will receive from the galaxy of distinguished men who have honored this Society and me by their willingness to discuss my modest paper.

May the words of wisdom to which we will now listen help us in solving these great problems for the honor of our Society, the glory of our nation, and the welfare of mankind.

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16 West Ninety-fifth Street.

THE NEED OF PUBLICITY IN VENEREAL PROPHYLAXIS.*

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The venereal diseases exist and have always existed. They cause among adults the greatest morbidity and much suffering and distress of mind. They occur also in children and may be acquired innocently, that is to say, without sexual intercourse. Often the young wife, whose husband is ignorant of the possibilities of infection, is made an invalid for life or becomes a candidate for the operating table. This great venereal plague, which is omnipresent, counts its thousands of victims. It blights many an unborn child, and is often the cause of blindness in the newborn. It is a destroyer of health and happiness; it tends to sterility. With the hope of children annihilated, the foundation of the family becomes insecure and the way is open for marital infelicity and divorce. Beyond question the venereal diseases are a potent element in adding to the misery of mankind, and as a disturber of our social relations they certainly play a leading rôle.

How important therefore is a recognition of this great curse of humanity; how necessary that all should know of the imminent danger that lies in wait for every man, woman, and child. How essential then a factor in our education should be the inculcation of adequate knowledge regarding the possibility of venereal infection, and how imperative should be an extension of the truth in reference to this devastating scourge of our civilization. And yet it is only a year ago that any concerted effort in this country was put forth looking towards a rational prophylaxis of these diseases. It is only since February, 1905, since the organization of the American Society of Sanitary and Moral Prophylaxis, by Dr. Prince A. Morrow of New York and other eminent practitioners, that any systematic attempt has ever been made to limit the spread of these loathsome diseases by a common-sense education of the public in the understanding of the danger that threatens everybody.

Prior to that time, as I know from personal experience, the way of the would-be exponent of the truth was not a path of roses. Even his most sincere efforts were condemned,[1] and every attempt to secure a hearing was often considered an outrage. The medical profession would not listen. The subject was too obnoxious and the whole matter was apparently so loathsome that even the mention of it was intolerable and most reprehensible. If by any possibility a man ventured to say an earnest word in protest, professional opinion would exert itself, as exemplified by Howard Kelly's criticism of a paper I presented by invitation in 1899 at the Columbus meeting of the American Medical Association, when Dr. Kelly said: "The discussion is attended with filth and we besmirch ourselves by discussing it in public." As further evidence of the hesitancy of the profession to take up this matter before the public, I recall the experience some fourteen years ago of Dr. Ferd. C. Valentine of New York before the American Medical Association. One member remarked that this is a Christian country and our association is a Christian association and that no such vile thing as venereal diseases should ever be allowed to come before the Christian American Medical Association.[2] Two years ago, however, Dr. Valentine appeared by invitation before the Conference of State and Provincial Boards of Health of North America at its nineteenth annual meeting, held in Washington, D. C., and discussed freely matters in reference to the segregation of prostitutes, the methods of examination for venereal diseases and the means of educating the public in a knowledge of the danger that confronts the young and the ignorant. It was apparently considered a bold thing to do, for the secretary, Dr. Gardner T. Swarts of Providence, R. I., said, regarding this attempt at a rational education along preventive lines: "Such a movement is a sensational and questionable one with many." The effort of Dr. Valentine made a profound impression. His recommendations were very generally concurred in; he was tendered a vote of thanks, and, at the suggestion of the president, Dr. J. N. Hurty of Indianapolis, he consented to forward his paper to the *Journal of the American Medical Association* for publication. His remarks on that occasion are noteworthy. They show why honest men persist; they demonstrate the motive that actuates the true humanitarian. He said: "Titles, as we grow older, lose their glitter; the degrees we have received grow tarnished. One grows ambitious for a higher honor—that of doing good."

So the first great obstacle to a rational understanding of the subject is surmounted. It is now admitted that we must seek the truth; it is recognized that we must diffuse the knowledge we already possess; it is realized our endeavor must be earnest and our study of the subject comprehensive. The first step has been taken; the value of publicity is acknowledged.

In considering the truth regarding the venereal diseases, we must acknowledge first of all the dominating influence of the sexual instinct. Why should we not? It means the perpetuation of the species. It is the most important function of which any man or woman is capable. Did it not exist, the human race would come to an end in one generation. It is a pure and noble function, and we must not only recognize its existence, but also admit the facts regarding its manifestation and the very serious results that follow its misapplication or perversion. Standing next in importance to the instinct which demands self-preservation, this imperious force in every man and woman differs in degree, but, always a potential element, requires satisfaction and demands recognition. We may say what we please, we may find fault as we will, this fact remains: The sexual instinct is the basis of every earnest endeavor, every poetical aspiration, every noble purpose. Without this instinct there would be no home, no civilization, no government. Did not the desire exist for sexual intercourse, the corporal manifestation of this great instinct, love were a farce and the home, the basic principle of all civilization and morality, were an impossibility. We admit then the existence of this great factor in life, and we are glad to admit it. We realize the necessity and the advisability of having this dominant force in our nature sensitize and vivify all our actions, because it means the present happiness of humanity and the future existence of the human race.[3]

With this admission of the importance of this function—the greatest of which we are capable—should come also a realization of the necessity of accurate knowledge regarding all incidents in its manifestation. If it is the ruling function of our existence, does it not follow that thoughtful consideration of it is a most serious duty of every earnest student, and that knowledge regarding its every de-

*Presented to the fifty-sixth annual meeting of the Illinois State Medical Society, held in Springfield, May 15-17, 1906.

tail is a matter of exceptional interest and most serious inquiry? This is a fact, always acknowledged in theory but now for the first time recognized in practice. We admit the existence of this function. We know its forceful influence on our lives. We acknowledge its supremacy. We deal with it and do not ignore it or deny its existence. This is the second step necessary to a rational consideration of venereal prophylaxis.

My individual views regarding methods of instruction along these lines have been often expressed.[4] The subjects of masturbation, rape, criminal abortion, infanticide, and divorce are concerned in a consistent effort of an educational character in reference to the venereal diseases. With the approach of adolescence comes a realization of the awakening of the sexual instinct. The boy wonders what this new sensation may mean. His school fellows are ready with fanciful explanation and oftentimes, but little urging it needed to induce the indulgence in masturbation or the premature exercise of the newly developed function—the necessity of such action, as indicated by his schoolmates, being in accord with his own inclination. The boy knows of no danger. No one has told him. Why should he not do as the other boys are doing? When seminal emissions occur he is told, and he often believes, that the performance of the sexual act is imperative to conserve health and prevent imbecility. If there is impropriety, wrongdoing, or danger, why has he not been warned? He has been told about brushing his teeth and taking a bath; he knows he must learn his lessons and conduct himself with decorum at the table. Let us now understand our duty and tell him the truth about the sexual instinct and the need of controlling it. Let us pacify and dispel his fears and teach the dignity of virility. Let us inculcate principles of honor toward the young girl and let us explain regarding the danger of venereal infection.

With the girl the need of actual knowledge is of even greater importance. One mistake on her part, if discovered, blasts her reputation for life. Indiscretion in the boy is ruin for the girl. She is never forgiven. Moreover, in addition to the danger of masturbation, unnatural practices, and venereal infection, is the danger of conception, which usually means criminal abortion or infanticide, and too often a life of prostitution. In my own personal experience, I have known of hundreds of cases where ignorance has been responsible for the ruin of the young girl. Many a worthy family of high social position mourns to-day the loss of a loved one who might have been the wife of an honest man, had she been told regarding the possibilities. There are men and women in exclusive society who have wealth, reputation, and honor, and yet their lives are embittered by the knowledge, which they hide from the world, that a daughter, through lack of instruction and warning, is now an outcast.

In the case of a working girl the danger is much greater, and with her the withholding of knowledge becomes, in my opinion, criminal and heartless. Her position in the working world is less remunerative than man's, and the strenuousness of competition in business is often enhanced by the importunity of employers, customers, and other male acquaintances. A little sympathy and a few extra dollars often induce her, in her ignorance, to be compliant. How unjust is our civilization and how farcical is our pretended Christianity, if we do not go to the assistance of every young girl whose necessities force her to contend against this danger which may mean seduction, disgrace, crime, or venereal infection.

I want the young people throughout our country to know the truth. They must know hygiene and physiology—the physiology of the whole body. They must know how the sexual instinct manifests itself, how it can be controlled until such time as marriage permits its indulgence in the furtherance of its legitimate object. They must know regarding reproduction, and the girl especially should realize how her indiscretion may result in conception or venereal infection. Our only hope for the coming generation is in knowledge. If we are sincere in our humanitarian endeavors, let us cast aside all thought of false modesty and maudlin sentimentality, and let us warn the young against the dangers that confront them by a consistent exposition of the truth. Herein is the only possibility of effective prophylaxis.

Permit me an additional word regarding the Society of Sanitary and Moral Prophylaxis. I am the first Illinois member, and for that reason I now impose on your courtesy and bespeak your active interest in the work of the society as others are doing in the different State medical societies throughout the country. In Dr. Morrow's presidential address he says: "A free discussion is, of course, an essential preliminary to any well-considered action, especially when such action proposes to deal with what is confessedly the most difficult of all the problems of social hygiene."[5] In speaking of the proposed work of the new society, he says: "It should be a campaign of education, a crusade against ignorance." In justification of such action, he adds: "There exists in all classes of the public the densest ignorance as to the dangers of these diseases and their modes of communication, direct and indirect." Referring to the need of knowledge of the sexual act, he remarks: "Young men should be taught that the reproductive function is given for a higher purpose than mere sensual gratification, that it is susceptible of control, discipline, and proper direction;" and in protest against the false modesty that so long has interfered with the inculcation of a knowledge of the truth, he continues: "The chief obstacle to the dissemination of this prophylactic enlightenment inheres in the very name and nature of the diseases themselves, or, rather, in the atavistic impregnation of the public with the idea that knowledge of the reproductive system and its diseases is shameful and even demoralizing, that such knowledge is not proper or fitting for the young." He says, further, and most truthfully, as we are all forced to acknowledge: "The entire system of our educational machinery is organized upon a basis of silence and secrecy in regard to the reproductive function which, from a biologic point of view, is the most important function of the body. It would appear that the aim of parents and instructors is to give the young, when launched into the world, a brevet of ignorance of all matters pertaining to sex and sexual hygiene."

I take pleasure in quoting these statements, for they coincide with the views which I have so often expressed during the past seven years. Publicity is indeed the first essential; knowledge of the truth is, in effect, the greatest safeguard. Bulkley and Margaret Cleaves[6] have shown the need of education in sexual hygiene for the young men and women of the working classes. Bangs and Grandin[7] have asserted that the general public should be enlightened as to venereal diseases. Bransford Lewis[8] has shown the absurdity of false modesty. Education is our strongest weapon and the most rational means at our command in the fight, not only against the venereal diseases, but also against rape, criminal

abortion, infanticide, marital infelicity, divorce, prostitution, and sexual perversions and crimes. It will diminish masturbation and save many a young girl from seduction. It will restrict illegitimacy; it will tend to make the marriage contract a surety against the transmission of disease, and the perpetuation of degeneracy; it will help answer the alcohol question; it will add to the health and the happiness of humanity.

The general proposition is now very well understood, and the great majority of the thinking men in the profession acknowledge the advisability of instruction, and are coming pretty generally to a conclusion regarding the best means of furnishing the necessary knowledge.

The existence then of the venereal diseases should be made known to all and the possibility of innocent infection should be explained. Why not? The danger is imminent, the results are disastrous, the only possibility of safety consists in knowledge of the facts and the means of prevention. Do not say it is immodest. Would we hesitate, on account of modesty, to save a woman from drowning in the river just because she was nude? If we would not, we must not deny to those who are in danger of disease and death that knowledge which alone can save them. If we persist in such denial, we do not regard, as our first duty, the preservation of the human race, and we share in the responsibility of destruction by ignoring what we know to be the most rational means of prevention. It becomes therefore the duty of every practitioner of medicine, now more so than ever before, to give instruction regarding the venereal plague in its different relationships. Ignorance has been the curse of the past; knowledge will prove the salvation of the future. Prudery shall no longer deter us in the performance of our duty. With a persistent effort, with combined endeavor, we will dissipate the darkness of ignorance by an exposition of the facts that we know. Fearlessly, confidently, resolutely, let us bear the great light of truth into the world.

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92 State Street.

The Treatment of Epistaxis.—Mendini recommends the introduction into the bleeding nasal passage of a tampon soaked with one part of a 1-1000 adrenalin solution and ten parts of salt solution; if this does not control the hemorrhage the passage must be packed with strips of gauze. In most cases this will be sufficient and it is rarely necessary to place a tampon in the posterior nares. In removing the tampons it is advisable, after the first few strips have been taken out, to drop into the nostril a small quantity of a solution composed of cocaine hydrochlorate one-fifth, 1-1000 adrenalin solution one, and distilled water ten. The vasoconstriction caused by this application produces enough shrinkage of the nasal mucosa to permit the tampon to be removed *in toto* without difficulty.—*Nouveaux Remèdes.*

A RARE CASE OF PRESUMABLY CONGENITAL LUXATION OF THE ARYTENOID CARTILAGE.

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Notwithstanding its minuteness the cricoarytenoid articulation is one of the most important and most used joints of the body, inasmuch as perpetual movements are performed by it during the whole postfetal life of the individual, both when he is awake and when he sleeps. With every inspiration the processus vocalis moves outwards, and during expiration it approaches the middle line again; the largest movements, however, are executed during phonation, to secure which the integrity of the arytenoid articulations is of high importance. For this reason very pronounced symptoms might be expected, when the articulation is diseased; but such symptoms are often absent when only one of the joints is pathologically altered, because the other normal one in these cases by making larger movements is able to perform the duties of both.

The disorders of the cricoarytenoid articulation, that will be discussed in the following lines viz., luxation, has evidently rarely been observed, as appears from the small number of published cases I have succeeded in collecting. Here, as in other joints one may distinguish between traumatic, pathological, and congenital luxations, while to classify them according to the direction in which the arytenoid cartilage is dislocated, can scarcely be of great practical importance. 1. The cricoarytenoid articulation lying well hidden and protected by the firm thyroid cartilage cannot be directly reached from the surface of the body, and for this reason traumatic luxations, produced by a cause acting from without must be very rare. I know of only one case having been published (by Hopmann[1]). A girl in falling down hurt her larynx against the edge of a table, and immediately afterward became aphonic with slight hemoptysis and painful swallowing. Besides other lesions, laryngocopy showed tumefaction of the right arytenoid cartilage. The cartilage was far broader than normal, rotated broader than normal, rotated inward and forward, and remained immovable during attempts at phonation. Also the vocal cords were injured as in the only case I have found, where the dislocation was produced by muscular action alone. This latter case is mentioned by Schnitzler[2] as "a classical observation of luxation of the arytenoid cartilage (caused by vomiting) accompanied by a longitudinal rent through the vocal cord of the same side. In Fig. 7 (phase of respiration) however only the mentioned rent in the right vocal cord is seen, but no luxation, while Fig. 8 (phase of phonation) shows a luxation of the left arytenoid cartilage without lesions of the vocal cords.

Without doubt the pathological luxations form the most numerous class of dislocations in the cricoarytenoid articulation, having been observed during the course of syphilis, tuberculosis, typhoid fever, variola and diphtheria. However the published cases are few in this group also. The first case, that of Sidlo,[3] is very interesting in several respects, amongst others because it shows how difficult it can be to diagnosticate even extensive alterations of the larynx from the laryngoscopic image. The trouble began rather suddenly with coughing, painful swallowing, and dyspnea; both inspiration and expiration were accompanied by a hissing sound that might be heard at a distance. Four weeks after the

beginning of the disease the patient was admitted to the hospital, and laryngoscopy then showed symptoms of a violent acute laryngitis. The swollen vocal cords touched each other in their foremost part and remained stationary during respiration; during phonation they approached, but the rima glottidis still gaped in its posterior part. Two months after admission to the hospital the appearance of the mucous membrane of the larynx was normal, but the arytenoid cartilages and the vocal cords had now approached each other closely, and the latter showed, "motus perversus" during respiration, approaching yet more closely during inspiration, while during expiration they separated just a little. As the arytenoid cartilages and the posterior wall of the larynx appeared normal, paralysis of both posterior cricoarytenoid muscles resulting from paralysis of the recurrent nerve was diagnosed. The linear rima glottidis, that in Sidlo's eyes "resembled a thread from which a Damocles' sword was suspended over the head of the patient," by catheterization was brought up to half its natural size, but six months after admission to the hospital the patient developed pneumonia and died, tracheotomy having been necessitated in a few days. The post-mortem examination showed[4] dislocation of both the arytenoid cartilages onto the anterior surface of the lamina cartilaginis cricoid., where they were placed in a horizontal position. Cicatricial tissue closely united the surfaces of the arytenoid cartilages facing each other; on the posterior wall of the larynx there was a stellate cicatrix, according to Prof. Toldt, of syphilitic origin. The posterior cricoarytenoid muscles and the interarytenoid muscles were atrophied, but the recurrent nerves were intact. The reason why no alteration of the posterior wall of the larynx had been observed with the laryngoscope was that large layers of muciparous glands were situated behind the arytenoid cartilages and simulated the normal configuration of this part of the larynx to such a degree that even at the post-mortem examination the true diagnosis was not made on inspection of the larynx, until its cavity had been laid open by severing of the anterior wall.

A rare case of luxation of both the arytenoid cartilages has been described by B. Fraenkel.[5] A patient became hoarse after an attack of typhoid fever, and three days after he got up sudden dyspnea came on, which necessitated immediate tracheotomy. Laryngoscopic examination showed the vocal cords completely immovable and close to each other during quiet respiration. The right arytenoid cartilage had fallen completely forward and to the left; its apex with the cartilago corniculatus crossed the middle line and approached the left ventricular band. The left arytenoid cartilage was situated quite posteriorly and to the right; its apex also crossed the middle line toward the right and filled the right recessus pyriform., so that it looked as if the apex of the cartilage had grown together with the posterior wall of the sinus. It was possible to lift up the arytenoid cartilages and to replace them in their normal position. They even were easily moved by the probe, but at once fell back in their abnormal luxated position. When the cannula was closed the patient could speak with a distinct and loud, but not very pure voice; on the other hand, even a forcible inspiration failed to enlarge the very narrow and almost invisible opening of the glottis. Luxation onto the anterior surface of the lamina cartilaginis cricoid, was also observed in a patient presented by Heymann[6] in the laryngological society of Berlin. Here the left arytenoid cartilage rested on the vocal cords; as the patient had diphtheria thirteen years before, I mention the case in this class (as a pathological luxation), having been unable to find a more explicit description of it.

In the mentioned cases of pathological luxation the dislocation must have been caused by inflammatory ulcerative processes in or in the vicinity of the articulation, perhaps, as Fränkel suggests, in many cases by a perichondritis cricoidea, perhaps also by the formation of shrinking cicatricial tissue. That no scars have been detected by the laryngoscopic examination is not astonishing, as these must have been situated on that part of the mucous membrane of the cartilages, which cannot be seen by the observer. In some cases also the muscles attached to the arytenoid cartilage may contribute to the production of the luxation. Far clearer is the etiology of the dislocation in those cases in which a tumor forces the cartilage to leave its normal position as in the two patients observed by Jurasz.[7] In the one patient a struma on the posterior wall of the pars laryngea pharyngis pressed the left arytenoid cartilage forward, and in the other the same cartilage was dislocated inward and forward by a cyst of the size of a hazel nut in the left plica aryepiglottica.

The published cases of the third class, the congenital luxations, seem not to be more than three, to which I am going to add a fourth, observed in the ear and throat clinic of the Kommune Hospital, Copenhagen. As will be seen from the following descriptions, the previous cases in all probability appertain to the second group, the laryngoscopic examination revealing alterations that must be considered as results of an inflammatory process. Stoerk has observed two patients with the disorder under discussion,[8] both of which had since their childhood spoken in falsetto. The first had diphtheria as a child, and Stoerk thinks it possible that the luxation in this case may have been caused by the formation of a scar; the other had not ever suffered from diphtheria. In the first case, where suffocation used to threaten during colds, laryngoscopic examination showed the right arytenoid cartilage pressed to the right but with rather normal outlines; the left was about four times its normal size, the mucous membrane, however, not being swollen, but the outlines were quite abnormal. Only so much could be observed that the left arytenoid cartilage with its vocal process and muscular process were not in the sagittal axis of the larynx but in the transverse, so that the vocal process crossed the middle line to the right. Even during forcible inspiration the vocal cords remained immovable (according to Stoerk's illustration nearly in cadaveric position), but closed during phonation. The second patient showed the vocal cords close together without the slightest motion during deep inspiration. The left arytenoid cartilage had three times its normal size, its outlines being quite distinct. As in the first case, it had changed its moral sagittal position to a transverse so that the left vocal process was found nearly where ordinarily the axial point of the right arytenoid cartilage is situated. The right arytenoid cartilage was pressed outward and backward and took a sagittal position. Provided that Stoerk's view of the cases as a luxation inwards together with a rotation round a vertical axis, causing the vocal process to cross the middle line, be correct,*

* Looking at Stoerk's illustrations, especially No. 1, I feel tempted to think that the left arytenoid cartilage has been luxated onto the anterior surface of the lamina cartilaginous cricoid (*i.e.* round a transverse axis), and that the luxated but otherwise only little altered arytenoid cartilage, seen from behind, has *simulated* an enlargement. But of course I dare not go against Stoerk's authority.

the considerable enlargement of the arytenoid cartilage can hardly be explained otherwise than as a result of a chronic perichondritis, passed without symptoms. Such a slow inflammatory process Semon also thinks may be the etiology of the luxation of the right arytenoid cartilage in the

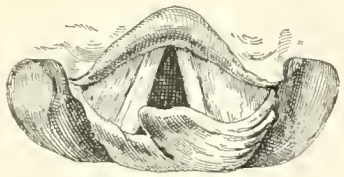

Fig. 1.—Laryngoscopic image during respiration.

case, observed and published by him.[9] The voice of this patient was a little hoarse, highpitched, but not falsetto. The left arytenoid cartilage and vocal cord remained immovable during respiration and phonation, the arytenoid cartilage being fixed in the phonatory position. The right arytenoid cartilage was placed directly behind the left, and even at some distance behind it. Both the arytenoid cartilages were somewhat tumefied, and the upper surface of the cricoid thickened. By attempts at phonation the right arytenoid cartilage moved from behind forward and towards the median line, which at even crossed; but even during phonation its anterior surface did not touch the posterior surface of its immovable left fellow. Semon's second conjecture, that the etiology might be found in a congenital malformation appears less probable to me on account of the mentioned ankylosis of the left arytenoid cartilage and the tumefaction of the arytenoids and cricoid.

The patient observed in the ear and throat clinic of the Kommune Hospital, Copenhagen, was a girl fourteen years old. Family history good. According to the mother's statement, the patient had been hoarse since her birth, and the hoarseness had only become a little more pronounced after a scarlatina in her childhood. The patient had never suffered from pain in the throat, accompanying speech or deglutition (excepting the onset of the scarlatina); neither had she suffered from dyspnea or coughing. In the fall of 1905 the patient was treated twice for rheumatic fever in the hospital. During her first stay in the hospital the patient suddenly became very hoarse and dyspneic; no sore throat or painful swallowing. At the request of the physician in charge, Prof. Flöystrup, a laryngoscopic examination was made and symptoms of an acute laryngitis detected besides the alterations described in the following lines after the notes taken during her last stay in the hospital. The right side of the larynx was quite normal, but the left wall of the vestibulum laryngis with the left arytenoid cartilage was turned over into the cavity in nearly a horizontal position and covered the posterior half of the rima glottidis and of the left ventricular band. The outlines of the left cartilaga corniculatus and cuneiformis were clearly visible. In trying to correct the deformity with a probe, a rather considerable resistance was felt, and the cartilages, when let go, at once recovered their former position. The left superior corner of the cricoid plate and its nearest surroundings seemed somewhat more protruding than on the right side. The left vocal cord remained totally immovable in slight abduction both during respiration and phonation; during the latter it appeared somewhat incurved and narrower than the right. The right vocal cord did not reach the left during phonation, but the apex of the left cartilage corniculatus penetrated a little into the right ventricular band, and the arytenoid and cuneiform cartilages on the right side were pressed towards the cavity, so that this part of the right wall of the vestibule of the larynx lay pressed firmly against the turned-over part of the left wall and partly covered it. The voice not properly to be called hoarse, but not pure; no dyspnea.*

This case of luxation in the left cricoarytenoid articulation is in all likelihood to be considered as a congenital malformation. That it is congenital must be inferred from the fact that the patient has been hoarse since her birth. And that it is not the result of an inflammatory process is probable because the luxated cartilages and parts of the mucous membrane have fully retained their normal appearance, just as also the right cricoarytenoid articulation is normal. Yet it would not be correct absolutely to deny the possibility of the dislocation having been caused by a very circumscript inflammatory process early in life (perhaps already in the fetal period). But the necessary supposition of so narrowly confined an inflammation—necessary because no other visible alteration of the tissues has been left save the luxation—makes this hypothesis improbable. Neither can arguments for the inflammatory hypothesis be taken from the fact that the left arytenoid cartilage made considerable resistance against attempts at reposition, as it is well known from other luxations that fibrous adhesions normally form between the luxated part and its new surroundings. For this reason and because the muscles (especially cricoarytenoid, post and lateral) have lost their power over the cartilage, the vocal cord necessarily remains immovable under phonation and respiration. One might perhaps feel tempted to consider the mentioned protrusion of the left superior corner of the cricoid plate as a result of a passed inflammatory process. More probable appears to me the assumption that the protrusion is seen because the outlines of the plate here become more distinct, the mucous membrane being tightened by the luxated arytenoid cartilage.

In order to make the analogy with luxations in other articulations still more complete, a habitual (sub-) luxation in the cricoarytenoid articulation has also been described. So Gradenigo[10] has observed in one of his patients how the right vocal cord sometimes, on phonation being attempted, suddenly remained immovable during the passage from respiratory to phonatory position. At the same time it became shorter, because the right arytenoid cartilage was moved by the m. vocalis and glided for-

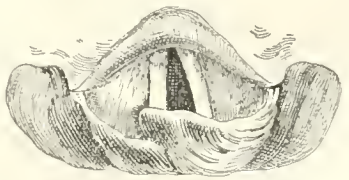

Fig. 2.—Laryngoscopic image during phonation.

ward on the articulating surface of the cricoid, making a rotatory movement round its vertical axis.

Finally I shall try to give a brief résumé of the picture characteristic of luxation of the arytenoid cartilage, as it can be formed from the above observations.

*For the opportunity of publishing this case I am indebted to the director of the clinic, Prof. Holger Mygind.

The Etiology is most often an inflammatory or ulcerative process in or in the vicinity of the cricoarytenoid articulation, rarely a trauma; less frequently still do congenital luxations seem to be observed.

Symptoms.—At times dyspnea, especially during intercurrent acute inflammations of the upper air passages. The dyspnea may increase to suffocation, particularly when both arytenoid cartilages are luxated, and necessitate tracheotomy. The voice may be hoarse, a falsetto, and so forth, but is generally well preserved. Pain accompanying deglutition is observed only during an acute stage of the causal inflammatory process. Laryngoscopic examination reveals the only pathognomonic symptom, the dislocation of the arytenoid cartilage with the contiguous aryepiglottic fold. The vocal cord on the same side during respiration remains immovable in the middle line, in cadaveric position or in a position between these two; during phonation in some cases it may approach to the middle line.

The diagnosis, made from the laryngoscopic image, cannot be confounded with other laryngeal disorders, if the cartilage and the mucous membrane have retained their normal appearance; otherwise confusions with new growths are possible. As shown by Sidlo's case, existing luxations (on both sides) cannot always be diagnosticated.

Therapy.—For those cases in which the cartilage can be moved, a reposition may be attempted with a probe or other suitable instrument, but the alterations of the articulating surfaces and their surroundings will, as a rule, make it impossible to get a good result from the manipulations. Stoerk has devised and tried an operation which consists in removal of some of the mucous membrane in such places where he could expect the resulting cicatrices to draw the luxated cartilage back to its old place. But only when the cartilage is easily moved or (Semon) the adhesions are easily destroyed may a satisfactory result be hoped for; Stoerk had none.

If dyspnea is present, dilatation of the rima glottidis ought to be tried, eventually tracheotomy.

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A Fluid in which instruments may without detriment be allowed to lie during office hours is suggested by Wille. It consists of water with 1.5 per cent. of borax, 3 per cent. of carbolic acid, and 2 per cent. of formalin. After use the instruments are cleaned with soap and water, rinsed off, and returned to the fluid, the author's experience during four years having shown that the antisepsis secured by this means is sufficient to insure safety.—*Centralblatt für Gynäkologie.*

SOME CLINICAL REMARKS ON TRAUMATISM AS AN ETIOLOGICAL FACTOR IN APPENDICITIS.

By W. J. MACDONALD, M.D.,

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Much has been written at various times concerning the probability of an external injury having any direct effect in the causation of appendicitis. In a somewhat comprehensive review of the literature one is struck by the tenacity with which all the early writers promulgate the theory of appendicitis being secondary only to infection somewhere else; and the great consensus of opinion was that in the cecum was to be found the original focus of disease. The memorable paper of Dr. Reginald Fitz of Boston, published in the *American Journal of the Medical Sciences* for October, 1880, marks the point to which the pendulum had swung in that direction, and, as a pendulum ever swings to extremes, may it not be that it has already swung far in the opposite direction?

Just as tenaciously as did the papers of Dupuytren, of Goldbeck, and of Albers ascribe the primary lesion to the cecum, do the textbooks of today hold to the contrary, some even saying that traumatism is scarcely to be considered as a cause of appendicitis.

With the pathology of this lesion as taught today, we are all familiar. The low vitality of a vestigial organ renders it capable of presenting but feeble resistance to bacterial infection, while circulatory disturbances readily produced by imprisoned fecal matter, or by the accidental twisting or kinking of the organ, greatly accelerate the probability of a speedy absorption of the products of the intestinal microorganisms. With this we are thoroughly in accord; but is it not possible, yea, even probable, that in some given cases the inflammatory condition in the appendix resulting in perforation may be propagated thereto by continuity of tissue? Whether it is of frequent occurrence, or the rare exception, remains to be learned from the deductions of the statistician. The question of how a blow, or a fall, or a strain can have any direct effect on this rudimentary organ, lying somewhat freely in the abdominal cavity, and well protected by superficial soft parts, must be somewhat problematical.

These patients give a somewhat different clinical history from those attacked in the usual orthodox fashion, and usually date their illness from some definite injury, external or internal. In this class of cases the death rate is particularly high, the inflammatory condition never being confined to the appendix at the commencement, but having spread there from some contiguous organ, where, with the help of the colon bacillus, or some other kindred infection, the condition becomes acute, a perforation occurs, and the patient quickly succumbs to general septic peritonitis. In this class of cases, too, even more than in some others, is the wisdom of early surgical intervention demonstrated. In a series of clinical histories given below I have endeavored to show how the subsequent appendicitis was directly due to a previous bodily injury, and it may be that this most frequent of all intraabdominal lesions is more frequently the direct result of a so-called accident than we are aware.

Case I.—Appendectomy; operation nine days after injury; tip of gangrenous appendix adherent

to right ovary; gangrene had spread to cecal wall; resection of gangrenous bowel by V-shaped incision; recovery. On Sunday evening, May 1, 1904, I was called to see Mrs. W. L., aged 24, who was complaining of nausea and "cramps in the stomach." Her face bore an anxious expression, and she presented the appearance of one extremely ill. On questioning her closely I obtained the following history: When a child of thirteen or fourteen she had fallen heavily, and suffered a severe blow on the lower part of the abdomen, following which she commenced to suffer from vague right-sided abdominal pain. Failing to obtain relief, her mother took her to Toronto, where she consulted two eminent surgeons, who pronounced the trouble chronic ovaritis. For a couple of years she continued to suffer more or less, but a trip South for the winter appeared to dispel the trouble, and she was again quite well. About one week previously to my having seen her, while sweeping the house, she had "overreached" herself, and severely strained the right side, when the symptoms of her old trouble at once reappeared. For a time she seemed quite crippled with it, but it gradually wore down to a dull ache, which constantly remained. On the Sunday morning in question while in church she was suddenly seized with abdominal pain, which she attributed to a tight belt which she was wearing. After luncheon she went for a short walk with her husband, but on account of the presence of constant pain, and much distress in the stomach, they returned home early, when, for the first time, she vomited freely. The pain now became general over the whole abdomen and quite severe. During the evening vomiting continued at intervals, the pain diminished, and by midnight when I saw her had apparently almost subsided. Her temperature was now normal and pulse eighty-six, though the peculiarly drawn and anxious expression referred to above impressed me at the time. On palpation the abdomen was slightly tender throughout, though nowhere could any hypersensitiveness be elicited, and the slightest rigidity was indiscernible.

Throughout Monday her condition remained unchanged, with the exception of a gradually rising pulse and temperature, and on Tuesday morning, when the pulse had risen to 102 and temperature to 101, I determined to open the abdomen. There was then no rigidity, and but very slight tenderness. A peculiar feature of the case was the intense desire of the patient to be operated on, and she kept telling us to hurry or it would be too late.

On opening the peritoneum the intestines presented a normal appearance, but the appendix was found totally gangrenous and adherent by its tip to the right ovary. The gangrene had spread to the cecal wall, of which a patch two inches in diameter presented a dark, glistening green color. A short transverse incision one and one-half inches in length was made downward and at right angles from the center of the original wound, to facilitate the resection of the gangrenous mass and separation of the ovarian adhesion. The mass was removed by a V-shaped incision in the bowel. There was no perforation. An uninterrupted recovery followed.

Was this case of appendicitis attributable in any way to either or both of the previous injuries? Did her first injury produce the ovaritis from which she was suffering, thus causing the tip of the appendix to become adherent thereto? Did the second injury revive the former trouble, and the inflammation quickly spread to the adherent appendix?

Case II.—Ileocecal intussusception carrying appendix with it; appendix acutely inflamed and perforated at base; fecal matter free in abdominal cavity; general septic peritonitis; reduction of intussusception; appendectomy; death. During the night of Thursday, June 16, 1904, I was called to see Mrs. M. B., aged 43, suffering from abdominal pain and complete constipation. Until the preceding Tuesday she had enjoyed the best of health, on which day she had driven to a neighboring town, and, when alighting from the vehicle, in order to protect her skirts from mud on the wheels, she had jumped to the ground, alighting rather heavily. On the way home she complained of some wandering pains in the abdomen, but, with the exception of vomiting two or three times, slept fairly well throughout the night. During Wednesday and Wednesday night the pain increased in severity, and several large doses of Epsom salts failed to procure a motion. On Thursday the pain began to subside, and when I saw her in the night she felt quite comfortable, I only being called to relieve the constipation.

I found her with a temperature of 101°, pulse, 144, and abdomen greatly distended and tympanitic. There was slight tenderness throughout, though nowhere was there any acute tenderness. Constipation was complete, neither feces nor flatus having been expelled since shortly after she jumped from the buggy on Tuesday. Abdominal palpation revealed nothing, but on rectal examination an indistinct hardened mass was discerned in the right lower abdomen. No traces of blood or bloody mucus had passed. The *facies hippocratica* was marked. Nothing was given by mouth, and high rectal enemas were negative of result. With a tentative diagnosis of intussusception immediate laparotomy was advised and performed.

On opening the abdomen to the right of the median line, and immediately over the situation of the mass indistinctly distinguished per rectum, the peritoneal cavity was found filled with acutely inflamed and greatly distended small intestine. Free fecal matter was present. The mass above referred to proved to be an ileocecal insussusception, which had progressed several inches, dragging the appendix with it, the tip of the latter organ, acutely inflamed, presenting from under cover of the insussusceptions. On accomplishing the reduction of the intussusception, a gangrenous perforation, the size of an ordinary slatepencil, was found near the base of the appendix, through which fecal matter was oozing. The appendix was removed, the abdomen cleansed as thoroughly as possible, and abundant drainage instituted. From the shock of operation the patient rallied well, the bowels moved on the second day, but on the third she rapidly sank and died.

Had the initial injury on Tuesday anything whatever to do with the final fatal peritonitis? This peritonitis was due to the escape of fecal matter through the appendiceal perforation, which in turn was the result of an acute inflammation in the appendix caused by compression between the intussuscipiens and the intussusceptum which interfered with the circulation, and established gangrene in the organ. Did the injury on Tuesday start the intussusception?

Case III.—Appendectomy; acute symptoms

supervened on injury to right testicle; operation four days after injury; appendix, of which the mucosal and submucosal coats were gangrenous, was removed; recovery. At 7 o'clock on Monday morning, October 10, 1904, I was called to see J. L., a young man of twenty, who had previously enjoyed the best of health. On the Friday before, while working on a ladder, he had slipped, and, alighting rather heavily on the perineum, had painfully bruised the right testicle. On Saturday he could not go to work, and on Sunday the testicle became increasingly tender and commenced to swell. About 4 o'clock on Monday morning he was awakened by intense testicular pain, so severe that he could not go to another part of the house to awaken his parents, and as calling out increased the pain to such an extent as to become almost unbearable, he was forced to lie as he was until morning. When I saw him the right testicle was as large as the closed fist and acutely tender; the tenderness had spread up the cord and manifested itself somewhat in the region of the bladder, though in the appendical region deep pressure could be made without producing any discomfort. He was vomiting at intervals, and his whole trouble appeared to be centered in an acute orchitis. Catheterization gave some relief, and, in order to procure as much ease as possible, was done every four hours. When I saw him later in the day he was much the same as in the morning, though the symptoms were somewhat accentuated. There was no abdominal pain, but deep palpation over the appendix at this time elicited exquisite tenderness. Temperature, 101°, pulse, 108. During the evening the testicular pain increased, and the organ became much more swollen. Abdominal tenderness on palpation became marked, though at no time was there any complaint of abdominal pain, this symptom being entirely referrable to the testicle. Late in the evening the temperature was 103 and pulse 120. Operation was advised, but declined. From this time until the next afternoon, when operation was performed, there were frequent attacks of vomiting, accompanied by exacerbations of pain in the testicle. Catheterization had to be more frequently performed, he expressing the opinion that it was the only thing which gave him any relief at all.

A right lateral incision, somewhat lower than the usual one for operations on the appendix, revealed an appendix, greatly darkened, and adherent by its tip to the right side of the fundus of the bladder. This adhesion was divided between two ligatures, and the appendix, of which the mucosal and submucosal coats were gangrenous, was removed. The abdomen was closed with layer sutures of catgut. The catheter had to be passed but once after operation. In twelve hours the testicular pain had disappeared, and in forty-eight the organ had almost regained its normal size. An uninterrupted and speedy recovery followed.

Although no history of any previous abdominal trouble was forthcoming, still such must, at some time, have been present to produce the adhesion above referred to. Did the aforementioned injury on the ladder cause this adhesion to stretch, and, by so doing, limit the circulation in the appendix, and thus cause it to become a prey to acute infection? Did the accumulation of urine in the bladder cause tension on the inflamed organ, and was this the reason that catheterization gave such relief?

DEATHS OF ATHLETES AND FATALITIES IN ATHLETIC GAMES DURING THE YEAR.*

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Late in the year 1904 the writer determined to collect the statistics relating to the deaths of athletes and the fatalities in athletic games during the year 1905, hoping in doing so to decide if possible the susceptibility of athletes to certain diseased conditions, and the most dangerous or fatal games indulged in.

The whole number of deaths collected amounted to one hundred and twenty-eight, of which fifty were due to diseases and seventy-eight to accidents of different kinds. Cerebrospinal meningitis was stated to be the cause of death in nine cases; cardiac disease in eight; pneumonia in seven; pulmonary tuberculosis in seven; Bright's disease in five; appendicitis in four; typhoid fever in four; suicide in two; apoplexy in one; suppurative tonsillitis in one; splenic anemia in one; senility in one.

In the accidental deaths football was the game mentioned in twenty-eight cases; baseball in twelve; horse racing in nine; boxing in six; gymnasium feats in three; auto driving in two; the other fatalities being equally divided between golf playing, hammer throwing, bicycle coasting, handball, polo playing and wrestling. Of the fifty deaths due to disease the ages at death were stated in twenty-nine instances, the average age being thirty-one years, the oldest age eighty-seven years, and the youngest eighteen years. In the accidental deaths the ages were stated in thirty-nine cases, the average age at death being twenty years; the oldest age sixty years, and the youngest twelve. The average age at death of the whole number was twenty-six years and one month.

The causes of death in football were stated as follows: Abdominal injuries, seven; dislocation of spine with paralysis, three; concussion of brain, five; fracture of skull, five; cerebral hemorrhage, two; fracture of rib (the same being driven into the heart), two; fracture of spine, one; acute peritonitis, one; convulsions, one; infected wound of knee-joint, one. The causes of death in baseball were stated as follows: Shock (from blow over cardiac area), five; head injuries, four; cardiac failure while running to base, one; blow in abdomen, one; heat exhaustion, one. Fractures of the skull were the causes of death in the nine jockeys. In the swimming accidents exhaustion by being caught in a current was the cause of death in three cases. Cramp caused one death. The causes of death in the remaining two cases could not be determined. In the boxing accidents blood clot in brain was the autopsy report in two cases. Shock from blow over heart was the cause of death in one case. In the other three the cause of death was not determined. In the three gymnasium accidents fracture of the cervical vertebræ was the cause of death in all three cases, one of the victims being a young girl of sixteen years. One individual died from cardiac paralysis while playing handball, another sustained a fracture of the skull while bicycle coasting, another died from a fracture of the skull which was caused by the blow of a golf stick, while another died from a fractured skull, the result of a false hammer throw.

There were other accidental deaths of athletes having nothing to do with athletics, such as rail-

*Read before the Norwegian Hospital Alumni Association, March, 1906.

road accidents, street fights, etc. One peculiar instance may be related in which a young and very promising athlete came to his death while splitting wood, a piece of the splintered wood being driven into his abdomen with a promptly fatal result.

Cerebrospinal meningitis being the cause of death in nine victims first attracts our attention, but we can very readily pass over this disease as the number of cases mentioned was undoubtedly due to a continuance and more extended prevalence of the disease from the excess of 1904, which, as we know, was an epidemic year for this disease. It would appear to prove, however, the assertion previously made by the writer[1] of this article, that athletes succumb from infectious diseases as readily as others, and that in some instances they appear to be peculiarly susceptible to infectious diseases.

The next disease or condition to be considered in this connection is known as cardiac disease, which, of course, means any of the cardiac diseases which can be differentiated by the careful diagnostician. Eliminating cerebrospinal meningitis for the reasons stated, we have as a great cause of death in athletes cardiac disease. It may be noted that many of the accidental deaths already related had as their chief characteristic a sudden failure of the heart. Pneumonia ranks high as a cause of death in athletes for the same reason, viz., a damaged heart. Although the best authorities agree that athletics have a tendency to impair the heart, only lately we have the opinion from Dr. Anderson of Yale that he has statistics[2] which appear to prove the contrary. Since the year 1855 there have been fifty-one deaths of Yale athletes out of a total of 761, with heart disease as the cause of death in two. To quote the *Medical Director*: "It is a widespread opinion that athletes are liable to heart trouble, but only two Yale men of this sturdy little army have died from this cause."

President Eliot[3] of Harvard says: "I would say that there are no more fatalities from heart disease among athletes than would be natural in the same number of men anywhere."

The other side of the subject may be reviewed by noting the opinions of different writers who have made athletics more or less a study. Professor James[4] of the Illinois State University declares on the subject that nearly all football players, baseball men, and lawn tennis experts have weak hearts and are more liable to diseases of other forms than men who exercise moderately. Regarding the crack tennis player, he says: "There is scarcely one of the top-notchers but has suffered from heart disease, many of them in severe form. Many have died of heart disease between the ages of forty and forty-five years, when they should have been at their best physically."

Dr. William W. Hitchcock,[5] in an article entitled "The Importance of the Early Recognition of Arterial Changes and of Chronic Vascular Hypertension in Relation to Life Insurance," says: "Athletes with arterial hypertrophy suffer frequently from high tension, with its entailed dangers."

H. B. Anderson[6] in the *British Medical Journal* declares that we need only recall how often it happens that the cardiac muscle is insufficient to withstand the requirements of ordinary quiet life, to understand how powerful a cause of mischief severe exertion may be.

As to the effect of repeated or habitual exertion within wise limits, it is known that athletic and other exercises, when properly regulated, are beneficial to the heart by producing physiological hypertrophy of the organ and lowering the average of peripheral resistance. Clinically speaking, the military surgeons first directed attention to, and carefully investigated the effects of overexertion on the heart. It was found that many cases of cardiac trouble existed in the otherwise healthy soldiers. Aside from certain modifying conditions in soldiers' surroundings, which appear to increase the liability to injury from overstrain, the tendency of overexertion in civil and military life is to produce cardiovascular lesions. Exercises in which the legs are employed are especially likely to be associated with cardiac trouble. These cases of overstrain may be classified as acute and chronic. The former is generally noted in the young, weakly, or untrained, as the result of severe or prolonged exertion. The "irritable" heart is more often the result of repeated or prolonged exertion, or of overexertion developing gradually. Mechanical stress not only injures the myocardium, but it is also a cause of aortic valvular lesions. It may even damage sound valves. In the obese there is a condition of chronic overstrain, for there is a relative disproportion between the size of the heart and the work it has to perform. The size of the heart is proportionate to the size of the skeletal muscles under ordinary circumstances, and the work of the heart is proportionate to the bulk of the body.

Maurice Champeaux[7] declares that it is a fact well established by physiology that the amount of food ingested ought to be in relation to the work done by the body. When the work increases, food ought to be increased in proportion. Training brings about an overworked condition, and the organism becomes a prey to intoxication. Discord then exists between the necessities and conditions of life. On the other hand, the term adaptation represents the physiological state exactly opposed to that of training. The bodily functions are at a maximum. There is an absolute accord between the necessities and conditions of life. In the army the aim should be toward adaptation and not toward training. It is necessary to work with moderation and with reason. An overworked condition should be avoided, and each organism should be adapted to the exigencies of its particular physiological condition.

Pneumonia and pulmonary tuberculosis rank third as causes of death here detailed. In New York State for the year 1905[8] pneumonia was the chief cause of death (10.4 per cent.), with tuberculosis second and giving 10 per cent. Anderson's schedule of Yale athletes before referred to ranks tuberculosis as the chief cause of death, with pneumonia second on the list. J. W. Fisher of one of our large life insurance companies presents the following causes of death among the insured: Tuberculosis, 13 per cent.; pneumonia, 9 per cent.; casualties, 7 per cent.; kidney disease, 6 per cent.; cardiac disease, 6 per cent.; typhoid fever, 6 per cent.; cancer, 5 per cent.; suicide, 2 per cent.

A comparison of the foregoing statistics would make it appear that athletes die most frequently from cardiac diseases, pneumonia, and tuberculosis.

The one death mentioned at the age of eighty-seven was due to old age. This old athlete was a boxing instructor who was known always to have led the strenuous life in all things as well as athletics, vices included. Of the accidental deaths, the first game to be considered is football. In the statistics herein collected we find that twenty-eight deaths, or 33 1-3 per cent., were due to this popular game. Of these twenty-eight football players, seventeen were high school players, all immature boys of eighteen years or under. Three were physically fit college men. The others were amateurs. The majority of these fatalities occurred during what is

called mass play. A few of the victims had been warned by their medical attendants to refrain from indulging in the game, owing to weak hearts, weak constitutions, etc. Fatalities and serious accidents have become so numerous in football that many opinions in a direction to annihilate the game have been expressed by different men and writers of note. Some of them are as follows: W. C. Redfield[9] believes that football has become more dangerous than war, a percentage of deaths and injuries for 1905 being greater than the number killed in the Japanese navy during the Russian-Japanese war. Dr. S. Weir Mitchell[10] considers football barbarous in the extreme. President Eliot of Harvard declares the evils of football as follows: It causes an unreasonable number of serious injuries and deaths: not one in five of the men that play football several seasons escapes without injury properly called serious, and of the twenty to thirty picked players who play hard throughout a season hardly a man escapes serious injury. The public has been kept in ignorance concerning the number and gravity of these injuries, the prevailing practice being to make light of or conceal the injuries sustained. Many of the serious injuries are of such a nature—sprains, strains, wrenches, dislocations, ruptures of ligaments and muscles, and shocks to the brain—that in all probability they can never be perfectly repaired. In any hard-fought game many of the actions of the players are invisible to the spectators, and even to the referee and umpire: hence much profitable foul play escapes notice. The game offers many opportunities for several players to combine in violently attacking one player. Regarded as a combat between highly-trained men, the prize ring has great advantages over football, for the rules of the prize ring are more humane than those of football, and they can be and are often enforced. The fight in a prize ring between two men facing each other is perfectly visible, so that there are no secret abominations as in football. Yet prize fighting is illegal.

In an article, "The Physical Aspect of American Football,"[11] Nicols and Smith give their experience as physicians to the football squad of Harvard University during the last football season, extending from September 14 to November 25, 1905. Each player was required to report every injury, no matter how trivial it seemed to him, to the surgeon in charge. The list of the injuries received was 145. The authors came to the following conclusions: (1) The number, severity, and permanence of the injuries which are received in playing football are very much greater than generally is credited or believed. (2) The greater number of the injuries come in the "pile" and not in the open plays, although serious injuries are received in the open. (3) The number of injuries is adherent in the game itself, and is not due especially to close competition, as is shown by the fact that the proportion of injuries received in games and in practice is about the same. (4) A large proportion of the injuries is unavoidable. (5) The proportion of injuries is incomparably greater in football than in any other of the major sports. (6) The game does not develop the best type of men physically, because too great prominence is given to weight without corresponding nervous energy. (7) Constant medical supervision of the game where large numbers of men are engaged is a necessity and not a luxury, although it is a question if a game requiring the constant attendance of two trained surgeons is played under desirable conditions. (8) The percentage of injury is much too great for any mere sport.

One college has taken such a decided stand against the game of football that two large donations have been made by sympathizers, the donations amounting in the aggregate to $250,000. The financial aspect of the matter undoubtedly has a great deal to do with the continuance of football among college athletics, for the reason that it pays better than all the other college athletics combined. That the game is brutal and as a rule rather uninteresting to the spectators, except where the loyalty to one side or the other is concerned, there can be no doubt or question.

Twelve deaths from baseball is not a large number when one considers that the game is played seven months in the year, as compared with the short football season, lasting about one month and a half, and that almost all the deaths were purely accidental and not because of some trick or maneuver in the game. Fatal blows over the cardiac area, as well as misdirected abdominal blows are simply accidents more or less unavoidable, where so many indulge in a game. The sport, in other words, cannot be called brutal because of these accidents any more than it could be blamed for one player dropping dead while running to first base, or for the death of another from sunstroke or heat exhaustion.

In the swimming accidents one thing might be pointed out, which is that the heart should be in very good condition before one ventures into the water, for the reason that there is so much resistance to overcome that the circulatory organs are staggered perceptibly unless in very good condition. A person with any kind of a diseased cardiac condition should take a milder form of exercise.

In the six deaths caused by boxing it is interesting to note the small proportion of fatalities due to this sport, and that all the accidents were in young men who did not excel in the art. As a rule they were amateurs with very little ring experience. In this connection it may not be amiss to state that no serious injury or death has occurred in the prize ring among top-notchers in fifteen years' time, the last death being that of one Bowen, who fell, striking his head against a brick wall which was a part of a poorly constructed ring. A first-class boxer always trains faithfully for a bout, and he is as a rule in the best possible condition at such times to receive punishment. He is by nature a rugged specimen of humanity with a naturally strong constitution, else he would never take to or choose such a rough game. These are probably a few of the reasons so few accidents occur in the ring, as well as the privilege a contestant has at any time to discontinue in a contest when he sees that it will injure him to continue further. The average well-contested boxing bout is not considered brutal, yet glove contests are allowed in only three states in the Union. There has never been a law enacted against football in America. Of two evils, the law discriminates against the lesser in this instance.

As a matter of history, football was prohibited in Scotland by James II and James IV, and in England Edward II held out pains and penalties for "hustling over large balls." It was also declared illegal in the time of Henry VIII, and strenuous efforts were made by Elizabethan statesmen to suppress the game, but without success.

Conclusions.—First: That athletes are prone to cardiac lesions, whether a simple physiological hypertrophy, a hypertrophy with dilatation, an endocarditis, a white spot on the heart, or myocarditis, as pointed out by Richardson[13] of London, or the different valvular conditions.

Second: That pneumonia ranks high as a cause

of death in athletes because of the cardiac embarrassment in connection with this disease.

Third: That athletes appear to be susceptible to infectious diseases, and when affected with these diseases succumb to them as readily as others.

Fourth: That pulmonary tuberculosis is a cause of death in a large percentage of athletes.

Fifth: That the average age at death of athletes is far below that of the average person in the ordinary walks of life.

Sixth: That the game of football as played in America during the season of 1905 was the cause of an appalling number of serious injuries and fatalities, and that it is very evident that something will have to be done to eliminate the dangerous features in the game, especially mass play.

Seventh: The idea in all kinds of athletics should be to improve and make men, not to maim, cripple, and bury them.

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TREATMENT OF TYPHOID FEVER.

By J. R. LANDERS, M.D.,

BERNADOTTE, ILL.

William Ewart, in the *British Medical Journal* of recent date, states that he believes that the aim in the treatment of typhoid fever most requisite is to feed the patient and starve the disease, remarking also that as it is hopeless to disinfect the feces, the only course left is to suppress them. Agents employed in local treatment are paraffin and charcoal, neither of which, he says, is capable of arresting the growth of Eberth's bacillus in the bowels, but he asserts that they both are nevertheless used in the cases with benefit. The maximum adult dose he has used is two teaspoonfuls of liquid paraffin every four hours. This he considers a non-irritating mechanical laxative, emphasizing that frequency of dose is indicated, both for the sake of lubrication and cleansing. The use of charcoal is advocated with the statement that although not a germicide, nevertheless it absorbs the toxins. He further makes use of castor oil every morning if the bowels fail to act at least once a day, and considers it an important part of his treatment, for the reason that under empty bowel conditions, paraffin and charcoal are brought into direct contact with the diseased surface. He specifies that mineral salts, organic acids, etc., should be derived from a vegetable diet—their natural source—though he allows phosphates, given in syrup, as a medical food. Watery extracts of vegetables and fruits, freed by boiling from excess of coagulable albumen, are given.

From the statement I have quoted Ewart would have us infer that the food should be of such a character as to leave no organic residue, no chemical precipitate. The aim to feed the patient and starve the disease may be all right, but it may be that we find the charge misses the bull's-eye or is impracticable; however, we will not question it further. But that "it is hopeless to disinfect the feces," I fear is a point not well taken, conspicuously so when in the very next paragraph he says the only course left is to suppress them, also that if the bowels do not act at least once a day, castor oil is to be given.

I am not ready to contend that we can absolutely and certainly disinfect the feces, but I do contend that we can do so relatively or up to a normal condition, *i. e.* that we can render the alimentary tract normally clean and the fecal contents as aseptic as they are in health, which answers all practical purposes. Anyway, I am ready to state and believe it can be demonstrated that surely it is as feasible and as practical to disinfect the feces as it is to suppress them, and when we have used intestinal antiseptics with the result of less odorous, less offensive, stools, we have more nearly accomplished our purpose of disinfecting than Ewart has attained the object of suppressing, especially since he orders castor oil to move the bowels daily, obviously and evidently not expecting or looking for suppression. When giving intestinal antiseptics, we hope and expect to disinfect the feces, and when we have put a stop to intestinal putrefaction and the stools become inodorous, we have realized our expectation. As to absolute positive asepsis, I fear it is seldom attained even of the surgeon's hands and field of operation, but practical asepsis can be obtained and is of none the less utility because not absolute. I do not see why Dr. Ewart emphasizes the necessity for the frequent doses of paraffin "for the sake of lubrication and cleansing," because he intimates that a clean tract is impossible. And if we do not try to disinfect the feces because it cannot be done absolutely, why try to cleanse the tract when it cannot be done positively and absolutely. Notwithstanding, if paraffin is cleansing, we will not question its use further. Charcoal is used not as a germicide, but because it absorbs the toxins. Then there is no use doing this unless the charcoal absorbs *all* toxins.

I am treating this matter thus for the reason that I have noticed that not a few have denounced and decried the use of intestinal antiseptics because we can not render the intestinal tract positively aseptic. To say the least, this is small ground to stand on, too circumscribed for argument. If forty men are drowning, don't save one because you can't save the other thirty-nine, or, more aptly, don't save the thirty-nine because the fortieth is hopelessly beyond reach. Such is to my mind substantially the argument against the use of intestinal antiseptics. However, I may add *en passant* that many have found out contrary to their belief or expectation that intestinal antiseptics is no "*ignis fatuus*," but has come to stay because it has been proven and is being proven every day that it is a power immeasurable, most frequently applicable, and without a peer in the whole field of therapeutic endeavor.

That the intestinal canal is the place where the typhoid bacillus takes up its abode, there with the *bacillus coli commune* finds a congenial habitat from whence it is revived, refreshed and sends out reinforcement, certainly none have disapproved. That saprophytic bacteria and their toxins are potent auxiliaries and contribute no little to the virulence of the bacillus of Eberth, and are possibly necessary to insure infection, I have not seen disputed, and I verily believe. It is not difficult of belief that the bacillus of typhoid fever could pass through the alimentary tract in colonies upon colonies without harm, detriment, or damage to its host if it failed to meet its congeners, the *Bacillus coli commune* and other saprophytes and their toxins. In other words, if the *prima via* is in a normal condition or the con-

tents in a normally aseptic state, infection could not, would not occur. So then if we render the breeding ground disagreeable, uncongenial, and unsuitable for bacillic generation and multiplication, we destroy the ability of the bacilli to send reinforcements by limiting and curtailing recruiting power, to the end that the phagocytes do not find the enemy invading the blood in increasing numbers to overwhelm them, but decreasing from want of reinforcements. Then if simultaneously with intestinal antiseptics we increase the phagocytes, we have the case in hand so those dangerous conditions which show up in later stages of typhoid fever, such as hemorrhage, perforation, phlebitis, etc., do not occur and consequently require no mention of treatment.

The sulphocarbolates of lime, sodium and zinc have been my preference as intestinal antiseptics, as they are with thousands of other physicians. I have tried many intestinal antiseptics, but nothing has seemed so satisfactory as the chemically pure sulphocarbolates of lime, sodium and zinc, but they MUST be pure, and it is *not every specimen* found in the drugstore that comes up to the standard. If diarrhea exists, the zinc salt is indicated. If there is the opposite condition or the astringency of the zinc salt is not wanted, or is not well borne by the stomach, the sodium salt is satisfactory. If there is rapid destruction of tissue, the sulphocarbolate of lime meets the requirements. If you do not believe in the antiseptic action of these salts, if you will exhibit them singly or combined in any case when you have intestinal sepsis with malodorous mephitic stools, give daily from one to four scruples of these salts—one scruple and one-half to two is usually sufficient—and note the change in the character and odor of the stools. The result will surely be convincing. The stools will not be surgically aseptic, and no one would care to use them as an ointment, but they will be practically, normally aseptic, and as aseptic as socalled healthy stools should be. But if further test is needed or desired, the bismuth test of Bouchard may be employed. If you give the sulphocarbolates in typhoid and give to effect till the stools become inodorous, the temperature will be found nearing the normal and all symptoms will be ameliorated. Jactitation, headache, restlessness, delirium, all disappear, or are markedly improved. It is not expected that this can be done unless the sulphocarbolates are effectively and promptly put to work at the beginning and pushed persistently till inodorous stools are in evidence. It is *not* claimed that the sulphocarbolates will do miracles and bring about recovery after fatal conditions have supervened, though the prompt, decided and continuous improvement that frequently follows their use as compared with their non-use is truly extraordinary and remarkable. So then, I would say, be sure of the purity of these salts and give boldly till the effect desired is produced, for we may rest assured they will do the work.

This done, we have inhibited the growth and prevented multiplication of all saprophytes as well as the bacillus of Eberth and, at the same time, lessened and prevented not only absorption of these poisons from the alimentary tract, but any and all poisons that are hurtful or injurious; which leaves the system to fight and dispose of the bacilli and toxins *only* that have already got into the blood when the phagocytic action of the leucocytes is required to assail and destroy these invaders. Then comes the question as to whether or not the leucocytes have the strength to do this, and if they have not, how can we increase the phagocytic power in the system? It has been demonstrated that by exhibiting nuclein we can increase the white blood cell at will. Whether this is done by causing a rapid maturation and division of the leucocytes wholly or otherwise, is not the province of this paper to discuss. Suffice it to say that by the administration of nuclein we can reinforce or augment leucocytosis to almost any necessary degree to the complete overthrow of invading bacteria. This done, there scarcely remain conditions calling for other treatment except possibly insomnia or delirium, which, in high tension, calls for veratrine or aconitine or gelsemine, monobromate of camphor for low muttering, and hyoscyamine in hallucinations and insomnia. Meet the cause of insomnia with the indicated remedy. If the bacilli and toxins have not been allowed full sway and to become thoroughly intrenched in the system, the call for hypnotics, etc., will not be material.

As to the diet, I have not intended to say much. The patient should have a diet that he can handle and appropriate. The socalled antipyretics have no place in this disease, unless, perchance, in very sthenic cases. They depress the heart and will frequently deceive or delude unless the temperature in the rectum be relied upon. The sponge or full bath is preferable and should be used, looking to the preservation of blood integrity and central nerve cell security. If to what has been said we add mild salines as required to keep the bowel cleared out, and do not after the beginning attempt to stimulate the liver until high fever has passed, it will be noticed the disease has run a mild course without adverse resultant conditions, the sequel of hyperpyrexia and of allowing the poisons a free hand, or overwhelming the patient with antipyretics, marked by ataxia, etc. Alarming hemorrhages do not occur. Perforation has not taken place in my knowledge, neither have I seen phlebitis result.

I have used the method as briefly outlined for years and have no reason to regret it, no death has occurred in my practice. I have treated cases alongside of other physicians in the same family, my longest illness was three weeks, others' longest illness ten weeks. I have not intended to enter into the minutiæ of treatment or prophylaxis. I simply give a general outline, and let each one mature his own treatment for the individual case. I mean to state positively that the method will absolutely prove efficient; I do not mean mayhap or perchance it will, but I make the positive assertion—*it will.* Very many other remedies aside from what I have mentioned may be called for and should be used to meet the conditions that may arise.

To clean and keep clean—normally aseptic—the *primæ viæ;* to disinfect the feces until inodorous; to reinforce the leucocytes to increase and intensify phagocytic effort; to prevent unwarranted destruction of tissue from high temperature, is the dominant idea in treating typhoid fever. The treatment as outlined is the dominant one, which, when abbreviated, amplified, or varied to suit the individual case, if intelligently directed and faithfully carried out, I do confidently believe will so modify the course and lessen the mortality that it can no longer be said that the tendency of typhoid fever is to death and that the disease runs its course, at all hazards, regardless, and in spite of, all treatment. But it will supplant the hopelessness of nihilism and lift the Cimmerian clouds of pessimistic despair and give the cheering, hope-inspiring sunshine of optimism portending the more auspicious, gratifying, confident therapeutics which we ardently and fervently hope may ultimately prevail.

SUMMER DIARRHEA IN INFANCY.*

By GEORGE THOMAS MYERS, M.D.,

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THE conditions included under the head of summer diarrhea in infancy are the most perplexing the practitioner is called upon to treat. None require closer study and observation of individual cases, considering the early age of the patient, the undeveloped organs of digestion, energetic and proper treatment from the beginning. I shall speak of the various forms as they exist primarily, collectively with ileocolitis, and cholera infantum, considering the latter as more virulent infections due to the same cause. In a large majority of instances, from a clinical and pathological standpoint, it is extremely difficult and in some cases almost impossible to differentiate one form from the other. This assertion has been proven at the bedside and by autopsy. Our only correct means of ever classifying summer diarrhea will be from bacteriological examinations of the stools. The various workers along this line have enlightened us little at present concerning the exact microorganisms found at different stages of the condition, and parts of the digestive canal most affected. Bassett, Duval, Booker, Baginsky, Flexner, and Cohen have been energetic workers in this direction. In a broad sense, summer diarrhea is spoken of as too frequent and loose bowel movements, arising from an increased motor and secretory activity of the intestinal canal. Scientifically, it is an existing symptom of many pathological conditions in the alimentary tract. If we will believe, as Kerley well puts it: "It is a disease due to virulent microorganisms, and the child is poisoned when ill from this disorder," much will be accomplished.

These organisms at present have not been isolated. They may be found as normal inhabitants of the intestinal canal, and as a result of any abnormal local irritation become pathogenic, most often from improper feeding. This is especially true of the colon group of bacilli, any marked disturbance of digestion causing them to become virulent. The streptococcus, *Bacillus proteus vulgaris, Bacillus pyocyaneus,* Shiga bacilli, and any number of saprophytic bacteria, invariably entering the body with the food in some manner, as in contaminated milk, supposed to be concerned in the causation of the disease, are abnormal inhabitants of the intestinal canal. This is the direct mode of infection. Undigested milk furnishes an ideal culture medium for the growth of bacteria at the temperature of the body, resulting in autoinfection. The disease is more prevalent in hot weather, beginning the latter part of May, continuing through June, July, and August with great virulence, decreasing in severity in September, ending the latter part of October in many cases. I have seen several cases in which it was impossible to get the patient upon the weakest modified milk formula until November without a reappearance of a diarrhea. The thermic changes cause a weakened digestion, and the heat of the summer months a proliferation of the bacteria in the milk, putrefactive toxic material resulting. When infants are fed on such milk absorption is the natural occurrence.

The infectious origin of diarrhea is the prevailing opinion of many. Bad hygienic surroundings, institutional life where children do not get the necessary amount of fresh air and sunshine, feeble constitution, those suffering from malnutrition and athrepsia or any slight digestive disorder causing a diarrhea predisposes to the disorder. Undigested food acting as a foreign body produces an inflammation of the already weakened mucous membrane of the intestines.

The age most frequently affected (from personal statistics and a conservative comparison of various authors), is from the fourth to the twentieth month, artificially fed infants more than when breast fed. The greatest factor concerned in the production, in my mind, is the feeding of infants upon cow's milk that has been brought from a distance in warm weather and kept in hot cans before being prepared for feedings. Milk in the summer months should be kept below 45° F. for artificially feeding infants. The younger the infant, especially when artificially fed, the greater will be the mortality. The lesions, found at autopsy, vary considerably in different parts of the canal, in severity, and in different cases. Holt, in his postmortem examinations, found the colon, lower ileum, and stomach most frequently involved, duodenum and jejunum next. Kerley found in his postmortem examinations, in the severe toxic cases that die within a few days, slight changes in the intestines, small areas of congestion, a few areas of desquamated epithelium, and minute swellings of the lymph nodes. The intestines may be the seat of all degrees of inflammation, from simple catarrhal, and simple follicular hyperplasia, to follicular ulceration, and false membrane formation. In the subacute and chronic cases, dying after two to six weeks' illness, the pathological findings vary from a slight superficial abrasion of the mucous membrane, to large deep ulcerations, involving all coats of the bowels with a degeneration and spreading of the epithelium lining the lower part of the ileum and colon. Booker found streptococci present constantly in the deep ulcerations. In these cases the stools are numerous, eight to twenty-four in twenty-four hours, yellow, yellowish green, green, brown in color, small in amount with undigested milk, no odor at first.

In a few days blood and mucus appear in the stools. I have seen in a few cases pus and large quantities of exfoliated membrane giving a horrible odor. Fecal matter is small in amount, often well digested. When the stools are green, having mucus and blood, the mucus predominating, no odor is appreciable. Vomiting is not always present, the temperature runs from 100° F. to 104° F. The abdomen is painful and tender, especially so over the colon, meteorism is marked, tenesmus is characteristic and frequently causes a prolapse of the anus with each stool.

Under prompt treatment these symptoms generally abate in a week to ten days, blood disappearing from the stools, more fecal matter appearing in each defecation, tenesmus and pain not so pronounced, temperature lower and the child's expression brighter. Mucus and the green color may persist for weeks in each stool. This illustrates a typical case of ileocolitis. In speaking briefly of cholera infantum, the prevailing opinion among many pediatrists is that it is extremely rare, and in nearly every case it is fatal. Cotton, in his article on summer diarrhea, states, speaking of an eminent pediatrist, that it is very rare, having seen only three cases of undoubted existence. During my service at the New York Infant Asylum I saw one case which presented the symptoms written of this form of summer diarrhea. The history and symptoms, from my note at the time, are as follows: The child in perfect health, about eight months old, weight seventeen and a half pounds, bottle fed after two months, never had been sick prior to this acute attack of illness, excepting a mild diarrhea three months previously, responding in three days after withdrawing

*Read before the Norfolk, Virginia, Medical Society, May 9, 1905.

the formula, and administering two teaspoonfuls of castor oil; bismuth mixture, two teaspoonfuls every two hours; barley water No. 2, four ounces at a feeding, seven feedings, with plenty of cooled boiled water during the intervals of feeding. The stools appearing normal on the third day, a weak modified milk formula was begun, with no bad results. This was pushed every fourth day in strength, until the infant at the time of this attack of so-called cholera infantum, was getting the following: Cream, 5 ounces; milk, 20 ounces; barley water No. 2, 23 ounces; granulated sugar, 2 ounces; eight ounces at a feeding, six feedings. I was called to see the child the afternoon of July 25, 1903, and the nurse reported that the infant was having severe convulsions; rectal temperature, 105° F. Visiting the ward at once, I found it having severe clonic convulsions, with short intervals of relaxation, vomiting sour curdled milk, offensive serous discharges from the bowels, skin cold and clammy, radial pulsation not perceptible, heart-beats 180 per minute, feet and hands cold, with marked cyanosis. Features drawn, abdomen distended and tympanitic. I immediately gave lavage with normal saline solution, temperature 100° F., having the nurse irrigate the colon with normal saline solution 60° F. I then administered hypodermatically morphine sulphate 1-100 gr., with atropin sulphate 1-600 gr., and repeated the dose every two hours, the convulsions and bowel movements continuing. The stools being constant, I ordered in an hour an irrigation of 2 per cent. tannic acid solution. No improvement resulting in the child's condition after three hours I administered subcutaneously normal saline solution, four ounces, with brandy, one ounce, in the cellular tissue between the scapula. The child died in eight hours from the beginning of the attack, vomiting and purging, with convulsions until death. Unfortunately an autopsy was not permitted.

The most frequent cases we are called upon to treat are milder in character, not in 1 per cent. of summer diarrhea having severe direct infection from the beginning. Nearly all the cases start gradually with eructations of undigested milk and vomiting, or a convulsion may be the only premonitory symptom. The temperature may range from 101° F. to 103° F. After a few bowel movements the stools are yellowish green, loose and more frequent, containing undigested milk, gas with each marked. Shortly the stools become green, or dark brown with larger particles of undigested milk, and more frequent in occurrence, the odor becoming offensive. In a few days the stools contain mucus, and from eight to twenty-four occur in as many hours. The infant is fretful, pale, losing its plump contour, the muscles are flabby, there is great thirst, a wearing cry, the tongue is often coated, the mucous membrane of the mouth is congested, stomatitis and thrush frequently develop. The weight chart shows an appreciable loss, which in the mildest cases is five to six ounces, in the more severe cases twelve to fourteen ounces a week. I have records of one particular baby which lost a pound and a half from Monday until Friday. The buttocks often become excoriated and in a few cases have the appearance of being scalded. A rash often appears over the body. In the subacute and chronic cases furuncles appear over different parts of the body, and decubitus is a troublesome complication. If the case is not properly treated from the onset ulceration of the intestines takes place and ileocolitis develops. A sudden diarrhea often develops in breast-fed children. I do not intend to differentiate the diseases that are ushered in with diarrheal symptoms, simply naming them. The exanthemata, often pneumonia, tonsillitis, and malaria. Making a careful physical examination at each visit, the symptoms of these diseases will be evident. Before entering upon the treatment of summer diarrhea I wish to impress upon you forcibly a practical point advanced by Kerley. "Primarily in summer diarrhea we do not have an inflammation or an 'itis' to deal with." The trouble is in the intestinal contents, and not the intestinal structure. Taking this fact into consideration, and removing the cause, the infant in a large percentage of cases will have a quick and favorable recovery. Upon the first indication of altered digestion, discontinue the milk at once, whether artificially or breast fed. There is a diversity of opinion when to resume the weakest modified milk formula. This will depend upon the individual case. In the large majority of instances it is not wise to do so until the normal function is restored. Then do so gradually with low proportions of fat and proteids upon rational methods. Percentage feedings are theoretical. First of all remove the cause. If vomiting is present give lavage with boric acid solution, 1 to 2 per cent., or normal saline solution. I prefer to introduce a small rubber catheter (No. 13 American scale), through either naris, lubricated only with the solution, having it attached to a small glass funnel with patient in dorsal position upon table and head turned to either side. The solution should be 100° F., in a quart pitcher, and the lavage should be continued until the solution returns clear. I have never seen any bad results following this method. After lavage give calomel, 1-10 grain doses every half hour, until one or two grains have been given, according to age. I follow the calomel in six hours with one to two teaspoonfuls of castor oil. For cases not having vomiting give calomel in fractional doses, frequently repeated, or castor oil, one to two teaspoonfuls administered without lavage, according to age. Never administer castor oil if vomiting is present. Other cathartics that have proven useful are gray powder, 1-4 grain doses every half hour, according to age; bichloride, 1-200 to 1-100 grain, repeated in accordance with the age. The stools after the administration of mercury are naturally turned green. My experience with the various intestinal antiseptics advocated from time to time in this disease have not been satisfactory; I confine myself to the preparations of bismuth, frequently repeated in large doses. At the New York Infant Asylum the following mixture was very beneficial: Bismuth salicylate, 1 to 5 grains; bismuth subnitrate, 10 to 20 grains; aromatic syrup of rhubarb, 2 to 6 minims; distilled water to make 1 to 2 drams, and repeated every two hours. The preparations of bismuth should be pushed until the stools assume a blackish color. It is well to irrigate the bowel with normal saline solution, or boric acid solution, 1 to 2 per cent., at a temperature of 100° F., in the beginning of the attack once every day. Have the child in bed, turned upon its left side, the right thigh flexed over the left, the buttocks slightly elevated, and use a small rubber catheter (No. 14 American), attached to a fountain syringe, elevated only three feet. Lubricate the catheter with vaseline, pass the tube into the bowel, while the solution is flowing; this will distend the intestine in advance of the tube, and facilitate its passage with less probability of rupture; the tube should be inserted as high as possible into the bowel. When the stools are frequent, twenty to twenty-four in a day, rectal irrigation is contraindicated; if they are infrequent with blood and mucus and are very foul, irrigate once or twice a day. Frequently when rectal irrigations are given every four hours, mucus persists in the stools, and it is extremely depressing

to the infant. Irrigation never should be sanctioned oftener than twice a day. Kerley advocates using a solution of tannic acid, 1 to 2 per cent., in cases having much blood and mucus. I have seen good results following its use. In all irrigations of the bowel with boric acid solution, and normal saline solution, the quantity necessary depends upon how much is required for it to return clear, generally from one to two pints. When heart stimulants are required preparations of alcohol should not be used as a routine. They often cause derangement of the stomach. Brandy, one to two teaspoonfuls, well diluted, is the best form to use; administer it in the feedings or alone, well diluted with cooled boiled water. Strophanthus, digitalis, and strychnine are useful heart stimulants in this disease, preferably administered hypodermatically, as the absorptive power of the stomach is doubtful. When given by the mouth strophanthus causes less gastric disturbance than digitalis. The temperature can be controlled by cold packs, sponging, and saline rectal irrigations at a temperature of 60° F.; this should be given with caution, as often the infant collapses after its use. Opium in any form should not be used to control the diarrhea if the condition looks at all favorable to other measures, and not then unless the stools are eight to ten in twenty-four hours, frequent and watery. Of the various preparations Dover's powder, ¼ to ½ grain according to age, is the best form to use. Deodorized tincture of opium, ¼ to 1 minim; paregoric, 5 to 10 minims, are used according to age. It is imperative in this disease to have hot water bags to the feet. In the large majority of cases the peripheral circulation is poor. The most important indication in the treatment of the disease is the feedings, after the withdrawal of the milk. I am in favor of dextrinized gruels, preferably barley water made as follows: Barley flour, ½ ounce, made into a paste, then add a pint of warm water, boil for twenty minutes and add enough boiled water to make it a pint. Allow to cool to a temperature of 100° F. and strain. This mixture we designated at the Infant Asylum, Barley Water No. 1. It approximately contains proteid, .1 per cent.; fat, .014 per cent.; carbohydrates, 1 per cent. Barley Water No. 2 contained barley flour, one ounce to the pint, prepared in the same manner. Arrowroot water, and rice water, are also useful, prepared in the same manner. In each of these gruels salt and sugar can be added according to the desire of the physician. Albumen water contains approximately in nutritive value two-thirds of an ounce of milk; consequently many children fail to digest it, causing as much trouble as the milk. Beef-juice as ordinarily prepared contains .6 per cent fat, proteid 2.9 per cent. Broths contain approximately 1 per cent. of proteids. In view of these approximate nutritive ingredients, it is evident that they may cause disturbances of an already existing condition. Breast-fed infants should be treated by starvation from twenty-four to forty-eight hours, and then be given Barley Water No. 2 and cooled boiled water with sugar often during the day. In critical cases, diluting the breast milk with cooled boiled water often proves serviceable. In one particular case, premature birth seven and a half months, the only thing the child would retain was a solution of gum arabic, one ounce to the pint, prepared as the barley water mixtures. This in composition is identical to cane sugar. This was continued for forty-eight hours, when the stools and regurgitation discontinued. After two days one teaspoonful of whole milk was added to twenty-four hour feedings, increasing the milk gradually each day. The child at present is twenty-two months old, perfectly healthy, and weighing twenty-seven pounds on the 8th of the past March. No evidence of rickets. I will state that in connection with the feedings it received inunctions of sweet oil, one ounce every day, after its morning bath, when it was very ill. Lime water added to feedings should only be considered as a diluent, not as an antacid.

Breast milk and cow's milk are both acid. Therefore alkalies have been used empirically. They prevent the formation of dense curds that would leave the stomach slowly, and be difficult of digestion in the intestines. Whey is a useful article to add as a diluent in beginning milk formulas, and is prepared from whole or skimmed milk, preferably the latter in severe cases. To one pint of milk add one teaspoonful of essence of pepsin; heat to 110° F. until coagulation takes place. Break up and strain through cheesecloth. This approximately contains 1 per cent. fat and proteids, sugar 5 per cent.; when from skimmed milk, not any fat. In cases having persistent vomiting with a slight diarrhea the feedings should be given by gavage, making the intervals of feeding longer than usual. Always give lavage once a day, in the morning, when feeding by gavage. This method is warmly advocated by Kerley, and has proven exceptionally satisfactory in the hands of many pediatrists. As so many complicated methods are in general use to feed infants, in this condition when they can withstand milk, I shall only mention the one I used at the New York Infant Asylum, a modification of Kerley's. It is simple, practical, with approximate percentages. One pint was the basis of measure that we all are familiar with. Whole milk was used in different proportions, adding gravity cream when necessary. Whole milk generally contains in nutritive value, fat 4 per cent. proteid 3.5 per cent., and carbohydrates 4.5 per cent. Gravity cream generally contains, fat 16. per cent., proteid 3.2 per cent., carbohydrates 3.2 per cent.

Mixtures as follows: Milk, 2 ounces; barley water, 14 ounces; granulated sugar, 1 ounce. Fat, .549 per cent.; proteid, .578 per cent.; carbohydrate, 5.5 per cent.

Milk, 4 ounces; barley water, 12 ounces; granulated sugar, 1 ounce. Fat, 1.042 per cent.; proteid, 1.067 per cent.; carbohydrate, 5.5 per cent.

Milk, 8 ounces; barley water, 12 ounces; granulated sugar, 1 ounce. Fat, 2.025 per cent.; proteid, 2.045 per cent.; carbohydrate, 5.5 per cent.

Gravity cream, 1 ounce; barley water, 15 ounces; granulated sugar, 1 ounce. Fat, 1.052 per cent; proteid, .2084 per cent.; carbohydrate, 5.5 per cent.

Gravity cream, 2 ounces; barley water, 14 ounces; granulated sugar, 1 ounce. Fat, 2.012 per cent.; proteid, .4022 per cent.; carbohydrate, 5.5 per cent.

Gravity cream, 1 ounce; milk, 2 ounces; barley water, 13 ounces; granulated sugar, 1 ounce. Fat, 1.552 per cent.; proteid, .773 per cent.; carbohydrate, 5.5 per cent.

Gravity cream, 2 ounces; milk, 2 ounces; barley water, 12 ounces; granulated sugar, 1 ounce. Fat, 2.542 per cent.; proteid, .967 per cent.; carbohydrate, 5.5 per cent.

Gravity cream, 2 ounces; milk, 4 ounces; barley water, 10 ounces; granulated sugar, 1 ounce. Fat, 3.035 per cent; proteid, 1.456 per cent.; carbohydrate, 5.5 per cent.

Gravity cream, 3 ounces; milk, 2 ounces; barley water, 11 ounces; granulated sugar, 1 ounce. Fat, 3.538 per cent.; proteid, 1.162 per cent.; carbohydrate, 5.5 per cent.

Multiples of these formulas were used when more than a pint was necessary for twenty-four hours' feedings. Condensed milk diluted with barley water in proportions 1-32, 1-24, 1-12, is beneficial for a

short period to tide over difficult cases that are unable to tolerate cow's milk in any dilution. Barley water is the best diluent to use immediately after a diarrhea. Dextrinized mixtures are serviceable in converting the starch into maltose, rendering them easier to digest. All feedings in summer, and after slight diarrheal conditions, should be reduced in nutritive strength from a quarter to a half, by the addition of either barley water or boiled water in place of the milk. Plenty of cooled boiled water between feedings is essential. Among the essential things to observe in this disease are the following: The usual symptoms of too strong milk mixtures are anorexia and vomiting. Too much fat causes colic, green stools, increased peristalsis, and regurgitating undigested curds. Proteid in excess is followed by colic, curds in the stools and constipation. Proteid causes most of the trouble in infants' digestion. Sugar in excess causes acid stools, regurgitating small amount of food after feedings, meteorism, and colic. Infants generally digest carbohydrates well. Sterilization and Pasteurization should not be practised if the milk can be kept below 45° F., since these procedures render the milk harder to digest, and do not kill the spores. A suitable raw whole milk properly modified is the ideal method of treating summer diarrhea cases when milk can be tolerated. Change of air from the city to the country, and to the seashore, is extremely beneficial to these infants. The large floating hospitals leaving New York daily during the summer months for several hours a day have diminished the mortality greatly in that city in this disease. In conclusion it is important to bear in mind these practical points: 1. Warm sponge bath daily. 2. Clean utensils in preparing the feedings. 3. Make twenty-four hours feedings, keep on ice and use as required. 4. Milk kept below 45° F. for infant feedings. 5. Nipples kept in boric acid solution after using, having only one hole; infant held upon nurse's lap during feedings. 6. Scald bottle after each nursing. 7. Feedings should always be given warm, at a temperature of 100° F.; cold mixtures cause regurgitation and diarrhea. 8. Plenty of cooled boiled water during intervals of feedings. 9. Wash mouth before and after feedings with boric acid solution. 10. Gavage in difficult cases. 11. Dextrinize gruels and modified milk formulas. 12. Remove napkin and disinfect soon as soiled. 13. Stools turn green from oxygen of the air after standing. 14. For convulsions and poor circulation give a mustard bath. 15. Give inunctions of cocoa butter and sweet oil, one ounce, after morning bath in feeble and athrepsia cases. 16. Plenty of fresh air daily. 17. Clothing should be light; often in the tenement houses in New York City the mother has enough clothes upon the infant for the coldest day in winter. 18. Isolate diarrheal cases.

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37 GRANBY STREET.

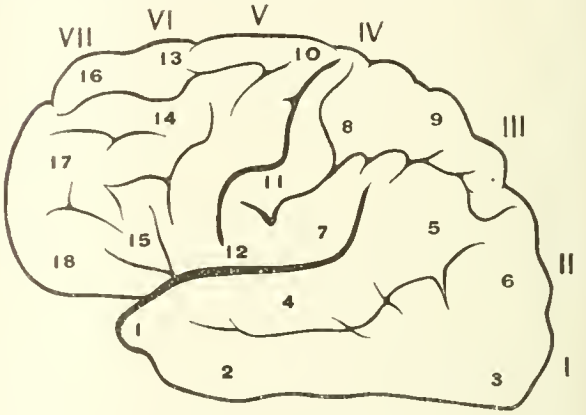
CEREBRAL SEGMENTATION.

A NEW METHOD OF READING THE BRAIN.

BY WALLACE WOOD, M.D.,

NEW YORK.

THE most interesting thing in the world, the most important, the most vital, that crumpled-up sheet of



LEFT HEMISPHERE.

FIG. 1.—Left hemisphere, with indications of lobules and suggested function: 1, 2, 3, the segment of the posterior base—nutritive sensibility, visceral sensibility, generative sensibility; 4, 5, 6, audition, written words, vision; 7, 8, 9, pain, pleasure, and personal sensibility; 10, 11, 12, the Rolandic lobe—spirit of the legs, arms, and mouth; 13, 14, 15, the expressional segment—gestures, writing, speech; 16, 17, 18, zone of the "head and eyes."

wax, the cerebral cortex, is a manuscript in hieroglyphics which we have barely begun to decipher.

How are we taught to read the cortex? We read

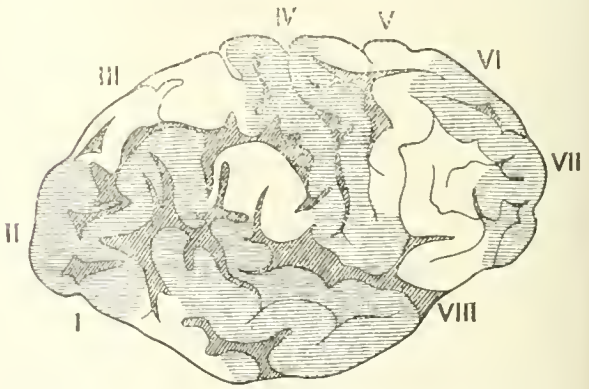
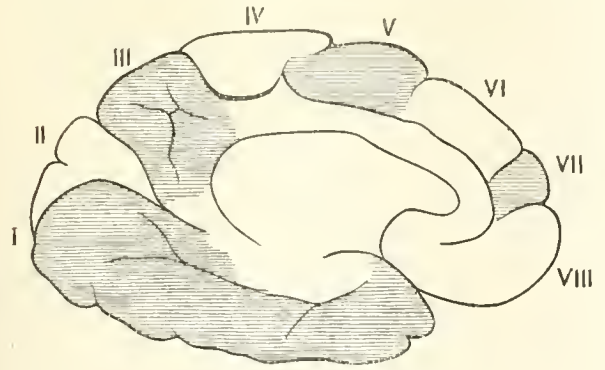


FIG. 2.—The right hemicerebrum, the transverse zones being shaded alternately; II, the auditory visual zone; III, the parietal sensory zone; IV, the Rolandic lobe; V, the pre-Rolandic (experimental) zone; VI, the second prefrontal zone; VII, the first prefrontal zone; VIII, the sub-prorean region.

first the great lobes, the frontal, parietal, occipital; next we read the fissures, the Rolando, the Silvius, then the gyri, first frontal gyrus, second frontal

gyrus; next the physiological centers, "leg," "arm," "mouth," "taste," "vision."

That the cerebrum of the larger mammalia in its development undergoes lateral segmentation is



Lobules of a Left Hemisphere.

Fig. 3.—The left hemisphere, mesial surface, the key lobules which ndicate the heads of segments being alternately shaded; the following are the suggested functions: I, the suboccipital (secretory); II, the cuneus (visual); III, the quadrate (sensory); IV, the paracentral (motor); V, the posterior; metopic (gestures language); VI, the anterior metopic (head uphft); VII, the rectangle (attention; abstraction); VIII, the gyrus vestibuli (volition).

plain. We see and demonstrate the long, longitudinal fissures in sheep, ox, dog, or man. That the cerebrum of primates, more especially man, tends to undergo also transverse segmentation will be found on closer inspection.

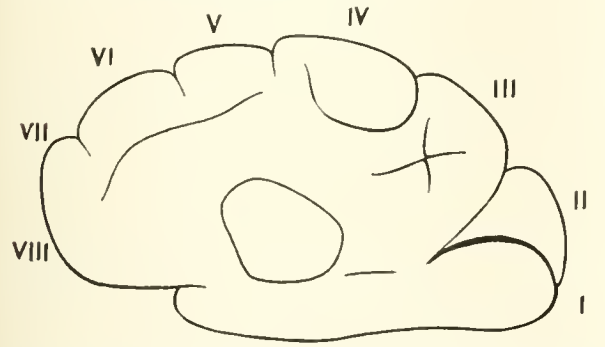
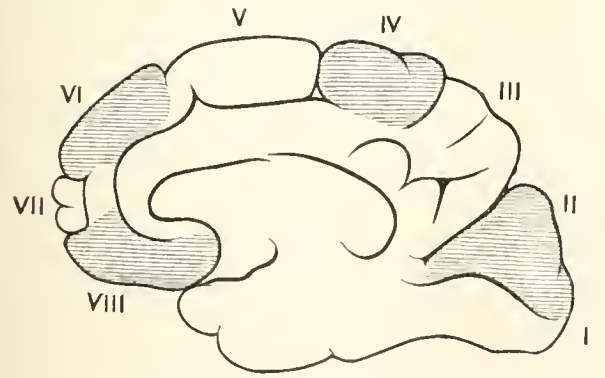


Fig. 4.—The right cerebral hemisphere, mesial surface, the marginal lobules being partially indicated: I, the suboccipital; II, the cuneus; III, the quadrate; IV, the paracentral; V, the posterior metopic; VI, the anterior metopic; VII, the retangle; VIII, the gyrus rectus; each of these lobules is the head of a possible segment.

The fissure of Rolando is most clearly one of these transverse tendencies. In front of it appears another transverse fissure which is broken by a gyrus. Posterior to the Rolandic is the parietal



Lobules of a Right Hemisphere.

Fig. 5.—The right hemisphere (from the Atlas of Brissaud); the light marginal lobules are carefully studied out: I, lingualis; II, cuneus; III, quadrate; IV, paracentral; V, posterior metopic; VI, anterior metopic; VII, rectangle; VIII, sub-prorean.

fissure both wide and deep; the occipital fissure cuts in the same direction, while further on the intertemporal fissure, and lastly the Sylvian itself will be found to fall into this line.

We now begin closer inspection. The cortical surface tends to form lobules of definite shape, and these tend to form lines of segmentation.

The human cerebrum tends to be segmented like an annelid or like the vertebral column.

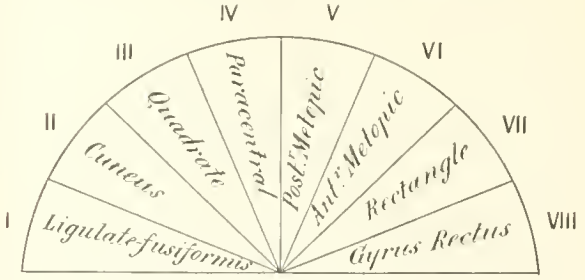


Fig. 6.—Schema for the eight marginal lobules of the mesial surface of the left hemisphere.

One of the transverse segments lies so clear cut and so plainly in view as hardly to require demonstration. This is the Rolandic region, or zone, divided into three lobules. This stands as the type of this segment. In front of this lies another transverse region, the zone of expression, while behind it lies a third, described by C. K. Mills and designated "sensory."

Three transverse zones then are well defined—the sensational, the motor, and the expressional. These dominate the cortex and the others fall into line before and behind them.

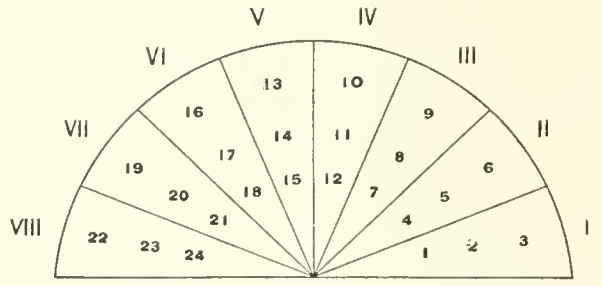


Fig. 7.—Brain Reading. Practical method of reading the cortex (physiological, pathological, or psychological); the division is into eight natural segments, each into three lobules or parts of the segments.

The front of the expressional segment is the pre-expressional, while posterior to the "sensory," the parietal, lies very clearly the associated auditory and visual in a line extending from the temporal eminence to the occiput.

This segmented arrangement is not arbitrary, but

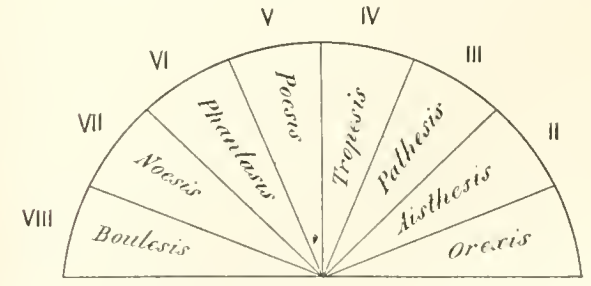


Fig. 8.—Psychological Functions. Suggested psychological functions of the eight cerebral zones or segments.

real; the key to it is found by turning the hemisphere over and inspecting the mesial surface.

Let us go round the sphere and count the lobules from pole to pole; they are eight in number, they are perfectly well defined, and each lobule is the head of a cerebral segment. We enumerate from posterior to anterior: 1. The ligulate-fusiformis, the under occipital lobe; 2. the cuneus; 3. the pre-

cuneus or quadrate; 4. the oval or paracentral; 5. the posterior metopic of Brissaud, the vertical or preparacentral; 6. the anterior metopic of Brissaud, the crest or coronal, the counter balance apparently of the quadrate; 7. the rectangle or prorean directly in front; 8. the gyrus rectus or subprorean lobule which broadens the orbit and terminates the marginal gyrus.

As a verification one may take any collection of hemicerebrums or look through the atlas of Retzius or that of Brissaud, these eight marginal lobules are unmistakable.

Each of these mesial lobules is the head of a transverse cerebral zone or segment.

Turn the hemisphere over. Let us consider these zones or segments seriatim.

First, the temporal base of the brain, which is also the spheroido-occipital zone or segment and shows three lobules, the spheroidal pole seat of gustatory sensibility, the under temporal lobule seat of visceral sensibility, and the under occipital lobule seat of genital sensibility.

Second, the temporo-occipital zone or segment, the three lobules of which are the temporal eminence (auditory area), the angular gyrus (memory of written words, etc.), and the over occipital lobe the area of vision, of which the cuneus is a mesial fold.

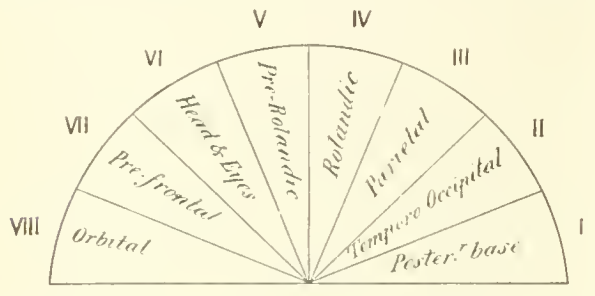


Fig. 9.—Cranial Surface. Schema for the eight segments or zones of the cortex, the key to which is found in the lobules of the mesial surface.

The third zone or segment is the parietal, consisting of three lobules, the quadrate, the superior parietal lobule, and the very small lobule, anterosuperior to the auditory area, which in animals is the motor for the ear and in the physiological diagrams is marked muscular sensibility. Psychologically it ought to be the lobule of the temper. This parietal zone has been especially studied by C. K. Mills.

The fourth transverse zone, the strongest of all, the keystone of the area, is the Rolandic area, the Rolondo zone, the Ferrier motor.

Here are three pairs of very powerful psychodynamos. These are the cerebral haunches, the cerebral arms, and the cerebral jaws. In this zone lies the spirit of the whole range of the mililant and industrial activities.

We come now to the fifth or prerolandic zone, the segment of expression. The lowest link is in the thin frontal gyrus, it is the cap and foot of motor speech brought to light by Broca. Look a little higher, above it is the cap and foot of written speech; and this is not all, for above this on the margin we may see the cap and foot of still other speech or language, the cap and foot of speech shrugged, implored, or gesticulated. Such is surely the meaning of the movements of the posterior metopic lobule.

In front of this expressional segment or zone of communication is an area marked "Head and Eyes," and here we appear to arrive at the acme centers of altruism and imagination, while still further, prefrontal, in a descending curve, lie the centers of attention, abstraction, volition.

Thus from stern to prow we are enabled by means of the mesial key lobules to mark out all the ribs of the ship.

That the cerebrum should be found to be articulated from stem to stern like a ship, like a myriapod, or like a vertebrate, need be no surprise. Articulation is the law of nature.

The cerebral segments are well defined on the mesial surface in the embryo. See the atlas of Retzius. An unexpected proof of the theory is to be seen on the diagrams in the histological researches of Campbell, the recent work subsidized by the Royal Institution.

The schema here presented is believed to be practical and convenient for every kind of localization, anatomic, physiological, pathological, and psychological.

New York University, Washington Square, April 10, 1906.

A MODIFICATION OF THE INCISION FOR EXPOSING THE MASTOID BONE.*

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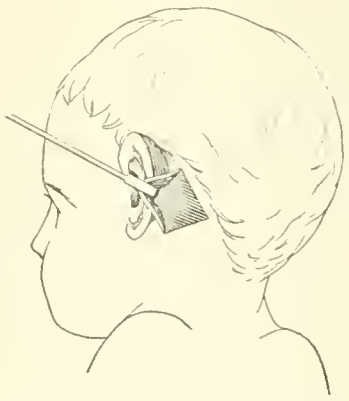
One might naturally be expected to offer an apology for undertaking to suggest the modification of an incision which has so long been universally accepted as the rational procedure for exposing the mastoid bone. The post-auricular incision, however, has been employed, as have so many other accepted methods of operating, more because surgeons of the present and immediate past, either through lack of time or inclination, have been more desirous to explore newer fields of surgery than to perfect those methods already long ago devised and employed with reasonable success. While the modification that I have recently been employing for operation on the mastoid bone may not be regarded in the light of an innovation, it does possess advantages that seem rational, as will be observed from the accompanying diagrams.

The incision is triangular instead of being straight or slightly semicircular as in the usual method, beginning about one-half inch back of the superior post-auricular attachment, extending through all the tissues obliquely backward and downward along the hairy margin, to a point just below the middle of the posterior border. From this point the incision is again carried through all the soft tissues forward and downward to the posterior border of the digastric fossa. By this incision one avoids all the post-auricular vessels and nerves, except possibly some of the minute auricular branches of the occipital, and even they may be avoided if the lower incision of the triangle does not have to be extended too obliquely downward. It is of no little importance to avoid division of both vessels and nerves, and especially the vessels, in this region, as about all the blood supply comes from the carotid arteries, and the extensive sloughing which often occurs after division of the post-auricular vessels will be prevented if the blood supply can be preserved and trauma from retraction of the flaps is avoided.

It becomes, therefore, a decided advantage in

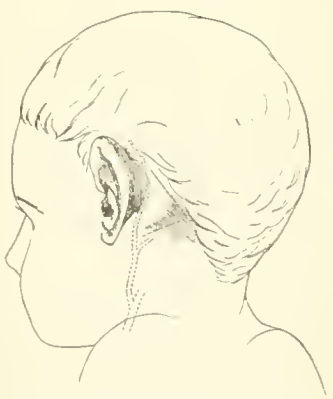
*Read at the meeting of the Philadelphia County Medical Society, February 28, 1906.

the steps of the operation of exposing this bone for the purpose of exenterating its cavity, at the same time to employ an incision that seems to me to supply every necessity. In the first place, it furnishes a roomy field for dealing directly with the bone; secondly, the entire soft tissues over-



lying the mastoid, which are always infected, are lifted, together with their periosteum, in one sheet, and it is usually possible to include within this single flap all the infected tissue over the mastoid. This is an important step towards lessening subsequent extension of the infection to the surrounding tissues, as so often happens when the incision is made, as ordinarily, through the infected area. As a further step toward lessening the extension of the infection through this infected flap tissue, packing can be so placed within the bony cavity as completely to separate the flap from the outer incised margin, and so leave it apart from the surrounding tissues for seventy-two hours, at the expiration of which time the perfect drainage which takes place from the two planes will have lessened, if not entirely removed, all infection within it, when suturing can be employed, or it can be left to heal by granulation.

Drainage from the bony cavity will be perfect, as the lower incision of the triangle, extending from above downward, will insure drainage from



the entire mastoid surface. There will be no necessity for traction, other than is required to hold the single flap forward, which can best be done by using a single tenaculum. This should be an additional means of lessening the sloughing which commonly results from the forcible retraction of the two flaps when the usual post-auricular incision is employed.

The flap as here indicated will also conform very closely to the outline of the mastoid bone, and, when considered safe to replace the flap immediately after operation, it will come directly in contact with the exenterated bone cavity and thus favor prompt dermatization. The lateral sinus can be explored through this incision without extending it backward, and scarring will be less conspicuous because of its proximity to the hairy margin.

Osteoperiosteal Lipomata.—Schwartz and Chevrier, in summing up the treatment of periosteal lipomata, liken it to that of lipomata in general. The method of choice is extirpation. This method, however, may be subject to question when the lipoma is of slow growth, for in that case the tumor is benign. The size of the tumor, and certain rare functional troubles which may result from its exaggerated development, and its situation, must be considered. In cases of rapid evolution, extirpation should be immediate. Later the growth may be difficult to enucleate, and in certain cases the general condition is affected, as in very young children. Extirpation should be complete in order to avoid recurrence. Sometimes such extirpation present difficulties. Careful dissection is necessary in certain cases. Sometimes several incisions are indicated. In some cases the operation demands two sittings separated by days or weeks. The pedicle should be entirely detached from the periosteum. Sometimes it is well even to take away the periosteum at this point, and it is better to resect an exostosis if the tumor is attached to one. It must be admitted that periosteal lipomata demand more complex intervention than do ordinary growths of this nature.—*Revue de Chirurgie.*

Diplococcemia in Croupous Pneumonia.—Guglielmo Memmi says that it is universally admitted that the blood of pneumonia patients may contain the bacillus of Fränkel, but there is considerable difference of opinion as to the frequency of their appearance, and its significance. The author's observations include eighty cases, in all of which he made bacteriological examinations of the blood. There were twenty-five positive results. Of the whole number of patients fifty-six recovered, and in only six of them was the bacillus of pneumonia found in the blood. Of twenty-four fatal cases, the bacilli were found in the blood of nineteen. The bacilli are found in the blood very early, even as early as the second day; in the period of resolution and during convalescence they were not found. In most cases the bacillus was of the characteristic form; in fifteen cases the virulence of the bacilli was tested by inoculation of animals. In seven cases it was highly virulent, the animals dying within twenty-four hours. The author concludes that there may be bacilli in the blood without a true pneumococcic septicemia.—*La Riforma Medica.*

Results Obtained at the Hérold Hospital from the Fresh-Air Treatment of Tuberculous Children During the Years 1903, 1904, and 1905.—M. H. Barbier speaks of the excellent results that have been attained by the fresh-air treatment in the case of tuberculous children. Every arrangement is made for the comfort and protection of these little patients at this hospital in the outskirts of Paris. The site of this institution commands an extensive view. When the temperature permits, the children pass all of the time out of doors. In the summer they are under cover only at night. The diet is that of the hospital, to which is added the yolks of two eggs and from one hundred to one hundred and twenty grams of raw meat. The writer reports encouraging results from this method of treatment, giving a list of the various lesions affecting the patients. In a large number of the patients there has been an increase in weight and strength; the chest has broadened, the color has returned. In brief, the symptoms of tuberculous intoxication have disappeared and the blood has become regenerated. This report offers another proof of the efficacy of pure air in the treatment of this disease.—*Gazette des Hôpitaux Civils et Militaires.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, June 2, 1906.

WEICHARDT'S TOXIN OF FATIGUE.

IN the *Centralblatt für Bakteriologie* for March 10, 1906, there appears an article by Wolff-Eisner which deals with the recent work done by Weichardt upon the problem of muscle fatigue. The observations of this investigator have not been extensively repeated, in spite of his own urgent request for confirmation, for the purpose of which he has given detailed descriptions of his technique, and it does not appear that the subject has aroused the interest in the scientific world which its extraordinary promise both in therapeutic possibilities and in etiological revelations seems to merit.

Among the most puzzling problems with which physiology has had to deal has been the question of muscle fatigue. It has long been assumed that during this process of diminishing irritability which we know as fatigue, substances are produced which exerted a poisonous influence upon the muscle tissue. This opinion is based upon the facts that a tired muscle can be restored almost completely by being flushed out, through its own vessels, with salt solution; and that fatigue can be rapidly produced in a normal muscle by injection into it of the extractives obtained from muscles already fatigued. Exactly what these toxic substances were was not known, but it was supposed that they were definite products of metabolism, and sarcolactic acid, creatin, creatinin, with various other proteid derivatives, have been held responsible.

This was, crudely stated, the position taken by physiologists until 1904, when Weichardt came forward with a startling hypothesis. He stated that he believed fatigue to be due to a definite toxin, analogous entirely to the toxins of tetanus and diphtheria, or to poisons of the ricin and abrin type, and against which a specific antitoxin could be produced. To him the previously accepted views did not seem satisfactorily to explain the phenomena observed during the "training" of athletes or of soldiers, in which prolonged and disciplined exercise make it possible for individuals to support easily an amount of work which would prove exhausting or even fatal to the untrained. Increased work, under any circumstances, means increased metabolism, and a consequently more rapid accumulation of its products. It is therefore entirely reasonable on these grounds to doubt the existing opinion on the subject. Weichardt believed that the explanation for these phenomena of "training" must lie in the possession by the athlete of a specific "antibody" which neutralizes the "fatigue toxin" as soon as it is formed.

With this idea before him, Weichardt produced fatigue in guinea pigs by forcing them to pull against resistance, and then the muscles of these animals were removed under the most stringent aseptic precautions. All fluid as far as possible was pressed out of them and from this muscle juice all the products of metabolism heretofore held responsible for fatigue were removed by dialysis. The substance thus obtained was found to follow, in most respects, the laws governing other toxins. By its injection into animals, Weichardt could produce, by small doses, rapid fatigue; by large doses, death, accompanied by all the symptoms observed in the original animals during the process of mechanical tiring. The temperature in both cases acted identically; at first rising, then rapidly falling, and continuing to do so until death. The substance was very sensitive to heat, its toxicity being destroyed by an exposure to 56° C., and in solution it became ineffectual after only a few hours' standing, unless kept at extremely low temperatures. Finally, it was possible, by the treatment of horses with this material, to produce an antibody in the serum of these animals which neutralized the action of the toxin both *in vivo* and *in vitro*.

Weichardt has gone further in his work to determine the more intimate nature of the toxin, a question which cannot well be followed here. At any rate, his results, surprising as they are, are based upon conscientious scientific research, and should others follow the confirmatory work of Wolff-Eisner they would threaten to revolutionize our present views of muscle fatigue. A direct result of his observations upon animals undergoing extreme fatigue, the influence upon the temperature, might already be put to practical use, in that an individual undergoing the physical strain of an athletic contest or a forced march, would seem to have entered into a period of danger as soon as his temperature had begun to sink below normal.

The new paths of theory as to the etiology of many clinical conditions marked by great physical depression, and the therapeutic conclusions to be deduced therefrom, tempting as they are, cannot be entered upon until there has been further confirmation of the attractive theory of the "fatigue toxin."

THE CLINICAL SIGNIFICANCE OF CASTS IN THE URINE, IN THE LIGHT OF MODERN RESEARCH.

SINCE casts of the renal tubules were first described by Henle in 1842, speculation, based on clinical and experimental study, has been going on as to their true meaning as evidences of renal disease. The mode of origin of casts is still unsettled, the older view of Rovida being that they are products of secretion of the tubular epithelium, while Ribbert's experiments on animals showed later that casts are probably the results of an exudative process within the tubules.

Nearly all the modern text-books on urinary examination consider casts as pathological elements—

as signs of some renal derangement. Thus Heitzmann ("Urinary Analysis," etc., New York, 1906) says that since casts are always the products of an inflammatory process, they cannot occur without an inflammation in the kidney. Lenhartz ("Clinical Microscopy," etc., 1904) avers that casts are always evidences of an inflammatory process in the kidneys, and in the majority of cases are indications of a true nephritis. Ogden ("Clinical Examination of the Urine" 1903) regards hyaline and granular casts as signs of some form of renal disease, though not characteristic of any one form. According to Croftan ("Clinical Urinology," 1904) hyaline casts are not indications of an existing nephritis, but show that such a process is about to begin, and they are always associated with at least a functional derangement of the kidney. Purdy, whose text-book is still a standard, states that he never has seen hyaline casts without an existing or preexisting albuminuria, and goes so far as to consider small hyaline casts as the chief "evidences of an interstitial nephritis." Nevertheless, the accumulating evidence of the last few years unquestionably points to the frequent occurrence of casts in the urine of persons with apparently normal kidneys, and although the presence of hyaline casts is still regarded as an evidence of "bad risk" by many life insurance companies, a few of the modern text-books on the urine admit the frequent absence of clinical significance, at least in the hyaline type of renal cylinders. Among the authors who take this view of the matter may be mentioned von Jaksch, who emphatically states that casts in themselves are not pathognomonic of disease of the kidneys; Tyson who says that casts are found frequently in urine free from albumin, and in perfectly healthy people; Hensel and Weil ("Urine and Feces," 1905), who found hyaline casts frequently in normal urine, and who believe that these casts by no means always imply a nephritis; and Saxe ("Examination of the Urine," 1904), who maintains that hyaline casts are found in practically every specimen of urine, if carefully looked for, and are certainly met with in the urine of persons in whom no albuminuria or any other sign of renal involvement had ever been observed.

In view of the differences of opinion among the authors quoted, the question as to the true meaning of casts still remains an open one. The occurrence of casts, particularly of the hyaline, granular, and epithelial types, in diseases other than those of the kidneys, is now well established through the researches of Nothnagel, Knecht, Mayer, Kossler, Wallerstein, Senator, Kobler, and others. The occurrence of casts in the urine of persons with normal kidneys and in apparently perfect health after the ingestion of alcohol or irritating foods, and after violent and prolonged exercise, has also been studied in detail by Penzoldt, Hubach, Lutje, and others. Penzoldt, as well as Lutje, regards casts as pathological phenomena, and Hubach was unable to find casts after the ingestion of irritating articles of food (mustard, radishes, etc.).

One of the most interesting of the recent articles on this subject is that of Klieneberger and Oxenius (*Deutsches Archiv für klinische Medicin*, Vol. LXXX), who examined 93 apparently healthy young men, and found casts in 89.24 per cent. Of these, 76.28 per cent. had hyaline casts; 4.30 per cent. granular casts, and 4.30 per cent. epithelial casts, while albumin was present in 58.06 per cent. of these subjects. The authors believe that the majority of these young men had suffered from contagious affections in childhood, and that these had left traces in their kidneys in later life. It seems scarcely credible, however, that in 89 per cent. of healthy young men there should be renal lesions such as we have been accustomed to associate with the presence of casts.

Philosofoff of St. Petersburg (*Russkii Vratch*, No. 50, 1905) is the most recent contributor to this discussion. His experimental study aimed to determine whether the occasional occurrence of casts in the urine of healthy people is physiological, or is an early sign of nephritis. For this purpose he examined the urine of fifty healthy young men, whose history was free from alcoholism and acute nephritis, and who had been under observation for a long time on ordinary hospital diet. These men were kept completely at rest during the period of observation. In seventeen of these he found hyaline casts; in twelve he found granular casts, and in thirteen, cylindroids. In other words, in 52 per cent. of these young men there was some type of cylindrical element in the urine.

In another series of experiments on individuals free from renal disease, Philosofoff gave a diet which included pepper, onions, mustard, alcohol, and turpentine in considerable amounts. The urine was examined within from five to fifteen hours after the ingestion of these irritants, and in six out of nine cases—that is, in 6 per cent.—hyaline casts were found; in three, or 33 per cent., granular casts were discovered. It was further noted that in all these cases the number of casts was greater than in subjects who had been kept on a normal diet, but it is possible that in the cases in which irritants were taken there was a more rapid precipitation of the casts owing to the presence of a more abundant deposit of oxalates.

These experiments seem to justify the conclusion that the presence of casts is not necessarily an evidence of kidney disease, and that the occurrence of a few isolated hyaline or even granular casts, as for example one or two of these elements on each slide, does not seem to offer positive proof of a renal disorder.

ATROPHY OF THE GLANDS AT THE BASE OF THE TONGUE AS A SIGN OF SYPHILIS.

A CORRECT decision in the diagnosis of syphilis is always important, though at times exceedingly difficult. The primary lesion may be overlooked or forgotten, and the secondary phenomena may be little marked and fail to attract attention, so that the question as to the nature of the antecedent disease may be raised only on the appearance of obscure tertiary symptoms or the development of grave parasyphilitic sequels. While the recognition of any disease may at times be possible from the presence of one or perhaps a few distinctive symptoms, it is the part of wisdom not to reach a conclusion in this connection too hastily or without full consideration of all the data in any given case. Syphilis assumes many guises, and failure in its identification is to be

avoided only through most careful observation and intelligent analysis of the evidence at hand. The clinician will therefore be grateful for knowledge of any symptom that helps to make or to exclude the diagnosis. A good many years ago Virchow pointed out a smooth atrophy of the follicles at the base of the tongue in cases of late syphilis, the glands normally present in that situation being diminished both in number and in size. The histological alterations were supposed to result from injury to the glandular structure by the immigration or new formation of syphilitic tissue cells, with secondary death and extrusion of the cells; or perhaps from impaired nutrition of the glands in consequence of syphilitic endarteritis. The condition has since been studied by other investigators, with, however, somewhat contradictory results.

For the purpose of determining the usefulness of the sign in the diagnosis of syphilis during life, Dr. N. B. Potter (*Boston Medical and Surgical Journal*, March 8, 1906) made a study of upward of 300 cases of various kinds, finding the symptom present in about one-half of the patients exhibiting what was considered reasonable evidence of previous syphilis and in only about 10 per cent. of cases without satisfactory evidence of previous syphilitic infection. The observations were made by palpation, as visual examination proved entirely untrustworthy. The patient is instructed to protrude his tongue as far as possible, and it is grasped by the left hand of the observer with a piece of gauze or a soft towel, while the index finger of the right hand is carefully introduced along the dorsum of the tongue to the circumvallate papillæ. The territory behind the triangle of papillæ is now delicately explored. From these observations the conclusion is reached that when the papillary glands at the root of the tongue are normal syphilis is probably to be excluded, while typical atrophy of these glands in an individual below the age of fifty years is indicative of syphilis. On the other hand, a moderate or slight degree of atrophy is of little diagnostic significance. The observation is so readily made and the results it is capable of yielding are often of such great importance that the sign should be invariably looked for, so that its relative frequency and its value as a diagnostic sign may be placed on a firm basis.

An International Society of Tropical Medicine.

The commercial exploitation of the various tropical possessions of the civilized nations and the awakening of medical interest in the diseases of these regions which has attended the march of empire, has led to the accumulation of a great stock of observations of all sorts relating to conditions and possibilities the stay-at-home practitioner has very little occasion to bother his head about. The number of important discoveries in relation to the diseases of hot countries that have been made within the last few years is very considerable, and for the delvers in this virgin soil there still remain many nuggets of medical lore to be uncovered. Tropical diseases are assuming greater importance for the inhabitants of the temperate latitudes also, as the possibility of their importation increases together with the growing amplitude of communication with the hitherto neglected portions of the earth, so that it behooves the medical profession to lose no opportunity for facilitating research into these maladies. Even from the standpoint of numbers alone the medical men whose field of activity is "somewhere East of Suez," are now entitled to consideration, so that it is rather astonishing to learn that at the coming meeting of the British Medical Association, to be held at Toronto, a section of tropical diseases finds no place on the program. In an appeal for greater recognition of the work of tropical investigators appearing in *The Journal of Tropical Medicine*, James Cantlie deplores this omission at the Toronto meeting and states that although efforts have been made to induce those in authority to remedy this defect, nothing has come of it. The interest evoked by the Society of Tropical Medicine in this country has been sufficiently great to demonstrate the value of association in the study of disease in hot countries, and we echo Dr. Cantlie's regret that this opportunity for the interchange of views by those especially versed in the subjects coming under this head should not be granted. Dr. Cantlie is led by this rebuff to suggest the formation of "A Tropical Medicine Association," which will be able to secure for tropical medicine the recognition in Great Britain which its importance demands. The proposal is a good one, for such an independent society would doubtless do better work than it could as a mere section of the British Medical Association. The idea might be worth developing to the extent of establishing an international society. Such a course would have many self-evident advantages, and we commend a consideration of it to those specially interested in the study of the pathological conditions peculiar to hot climates.

Governmental Meat Inspection.

Whatever may be the feelings with which those interested in the livestock and meat packing industries regard the Beveridge Meat Inspection bill, which was passed by the Senate on May 25, there is no doubt that the people of the country at large will be greatly relieved when its provisions are put into force. While no layman can realize to the full the disgusting possibilities and actual perils to health that attend meat packing done in a slovenly or dishonest way, or even meat packing carried on under conditions in which any solitary precaution that ingenuity can devise is neglected to the slightest degree, the nauseating details said to attend the preparation of this class of foodstuffs have lately been so forcibly presented to the public through various literary channels that the psychological moment for reform seems truly at hand. If the conditions in the great packing houses are as bad as they have been painted, no legislation intended for their improvement can be too drastic, while if the packers are innocent of wrongdoing they have nothing to fear from the proposal to make the inspections more rigid. It is, unfortunately, not very probable that the secrets of the packing house have been exaggerated in the telling, and we can but hope that the entire matter will now be put on so firm a basis of governmental supervision that even the pathologically trained imagination of the physician need conjure up no unpleasant specters of diseased animals, filthy surroundings, or unclean workmen, when he partakes of such flesh food as his nature may incline him to use.

Ringworm in School Children.

Some weeks ago the Medical Record spoke in terms of commendation of a plan of treatment for ringworm advocated by Dr. David Walch of London. The essential feature of this procedure was

the application of a coating of collodion to the affected area in order to prevent the spread of the infection to other children. That this plan is thoroughly practical is attested by the fact that the method has been in use by the New York Health Department during the past ten years, therefore long before Dr. Walch published the details of his method. The instructions issued by the Department for the guidance of the nurses to whom the children requiring such treatment are sent by the medical school inspectors, contain the following directions for the treatment of favus or ringworm of the scalp: In mild cases, the affected areas are to be scrubbed with green soap, epilated, and covered with flexible collodion. In severe cases the diseased patch is to be painted with tincture of iodine before it is covered with the collodion. Ringworm of the face and body is treated by scrubbing with green soap and painting with flexible collodion. In this connection it may be of interest to reproduce also the Department's routine for the treatment of pediculosis capitis, naturally a condition frequently encountered. The hair is to be thoroughly saturated with a mixture consisting of equal parts of kerosene and sweet oil. The next day this application is removed by the use of a solution of potassium carbonate, one teaspoonful to a quart of water, followed by soap and water. Hot vinegar is advised for the removal of the "nits."

News of the Week.

The San Francisco Relief Contributions.—The Secretary of the Medical Relief Committee has rendered a statement of the amount that has been so far raised by the medical men of Manhattan, Bronx, and Richmond. The sum is over $6,000, and there is every reason to anticipate the receipt of another thousand. It is understood that the physicians of Kings County (Brooklyn) have raised about $1,500 or $2,000. Through the instrumentality of one of the Fellows of the New York Academy of Medicine the Chamber of Commerce has set aside $5,000 to be used for the special relief of medical men and their families, in connection with the fund being raised by the Medical Relief Committee, so that altogether, directly and indirectly, the medical men of Greater New York will have raised about $14,000 or $15,000.

A New Georgia State Medical Association.—The organizers of a new Georgia State medical association have been holding a meeting at Atlanta for the purpose of perfecting the details of the project. The new society is intended to be independent of the national association, and membership in it is open to all duly qualified regular practitioners of Georgia. The circular letters sent out are said to have met with a very favorable reception throughout the State.

Examinations for the Army Medical Corps.—A preliminary examination of applicants for appointments in the Medical Corps of the Army will be held at various military posts throughout the United States on July 31, 1906. The prescribed maximum age is thirty years, and persons whose age exceeds that limit are not eligible. Applications must be filed prior to June 30. Full information may be obtained from the office of the Surgeon-General of the Army, War Department, Washington, D. C.

Atlantic City Academy of Medicine.—At a meeting of this society, on May 11, Dr. Charles L. Dana read a paper on cerebral vertigo, and Dr. William Seaman Bainbridge one entitled "A Brief Résumé of the World's Recent Cancer Research, With a Report of a Few Cases of Special Interest."

The Autopsy Question.—The Board of Coroners of Manhattan has held a special meeting to consider what action to take regarding the new form of death certificate issued by the Board of Health. This makes no mention of coroner or coroner's physician, and by implication gives to hospital pathologists the authority to make autopsies at discretion. The coroner's office has notified the hospitals that trouble would follow any attempt to alter the old order of procedure and that any hospital pathologist performing autopsies without the permission of the friends of the deceased would be prosecuted. The Board of Coroners adopted a resolution censuring the Board of Health for printing the new form of certificate, and another one denouncing physicians who obtained consents to autopsies by fraud. An ordinance was also drafted which is to be presented to the Board of Aldermen and is intended to prevent the transfer of dangerously sick patients from one hospital to another.

American Society for the Study of Alcoholic Inebriety, and Other Narcotics.—The thirty-sixth annual meeting of this society will be held in the Hotel Vendome, Boston, Mass., June 5, 6, and 7, 1906. The Sessions will be held from 9 A. M. to 10.30 A. M. each day. The president of the society is Dr. W. S. Hall of Chicago, and the secretary, Dr. T. D. Crothers of Hartford, Conn.

New York Academy of Medicine.—The Council of the Academy of Medicine states that it wishes to secure for the library all such material as will illustrate the historical growth of medicine and the development of its special branches. It is desired to secure old instruments illustrating earlier methods and the development of new procedures in surgery, physical examination, and diagnosis. Prints and portraits showing modes of life and practice, costumes and customs are desired. Fellows of the Academy are requested to present such material to the Library's Museum Department. They will be carefully preserved, classified, and, so far as the accommodation allows, will be displayed.

American Laryngological, Rhinological and Otological Society.—The twelfth annual meeting of this society will be held in Kansas City, Mo., on June 11, 12, and 13, 1906. The profession is invited to attend the various sessions of the society. The president is Dr. Jas. E. Logan of Kansas City, and the secretary is Dr. Wendell C. Phillips of New York.

Jewish Maternity Hospital.—This institution has recently been incorporated by the State Board of Charities and the Board of Directors has under consideration several plots of land on the lower East Side of this city. As soon as the selection has been made, ground will be broken for the erection of a hospital building which is to be thoroughly modern in its equipment. Until this building is ready for the reception of patients, an outdoor service will be carried on. Physicians desiring to be appointed to the outdoor service, which will be inaugurated in about a month, are requested to apply to Dr. A. M. Hilkowich, 207 East Broadway.

National Volunteer Emergency Service Medical Corps.—In a circular letter issued by this organization, physicians, pharmacists, nurses, and medical students are invited to become members, as it is desired to have representatives in every city and town. The object of the association is to provide aid to sufferers from great calamities such as fires, floods, earthquakes, epidemics, etc. It is stated that this

purpose is not antagonistic to the work of the Red Cross Society, with whose operation it is not intended to interfere, the projected scope being more technical and professional in nature. Dr. J. Adelphi Gottlieb is the Surgeon Major-General and Mr. Percival Kuhne is Paymaster-General. Dr. Nicholas Senn is President of the Advisory Medical Council. The temporary office of the organization is at 225 W. One Hundred and Sixth street, New York City.

A Tragic Occurrence was the death of the prominent Portuguese oculist, Dr. Mascaro, who suddenly became unconscious while reading a paper before the section on ophthalmology at the Lisbon Congress. He did not recover consciousness, and died on the same day. Dr. Mascaro was independent of practice and devoted himself to the treatment of the poor, for whom he had founded a private free hospital and training school for the blind.

Smoke Nuisance Fine.—The engineer in charge of the plant of an electric lighting concern was sentenced on May 21 to pay a fine of $50, or serve ten days in the city prison, for having violated the smoke ordinance. Seventeen other smoke nuisance cases were on the calendar that day: four were held over for trial at a later date and the other offenders were allowed to go under suspended sentence.

Cures of Leprosy Reported.—According to the daily papers, three cases of leprosy have been discharged as cured from the State Lepers' Home at Indian Camp, Iberville Parish, La. The patients were two women aged 50 and 30 years respectively, and a boy of 13 years, and had been inmates of the institution for several years. The plan of treatment pursued is said to have included the use of icthyol, potassium chlorate, strychnine, salicylate of sodium, arsenic, and chaulmoogra oil. A report on the subject has been submitted to Governor Blanchard by the Board of Control of the Louisiana Leper Home.

Chicago Health Matters.—Except for diphtheria and scarlet fever, the number of cases of the contagious diseases reported to the Department for the week ended May 19 shows a decrease from the preceding week, and for the first time since the early part of last December, no influenza bacilli were found in any of the cultures examined in the laboratory. Three cases of smallpox were discovered during the week and removed to the Isolation Hospital. Of these patients one was a resident of the city, 21 years old, never vaccinated. The source of infection was not ascertained. The second case was that of a colored woman from Texas, in the eruptive stage on arrival. The remaining case, that of a colored man from Memphis, Tenn., was in the fifth day of the eruption on arrival. Neither of these had ever been vaccinated. There are now eleven smallpox patients in the Isolation Hospital. This time last year there were eighty-five.

Red Cross Hospital.—The cornerstone of the New York Red Cross Hospital was laid on May 22 by Mr. William T. Wardwell, the president of the institution. The plot of ground on Central Park West, between Ninety-ninth and One Hundredth streets, on which the building is to be erected, was the donation of Mr. Wardwell. The building will have a frontage of 80 feet and a depth of 67 feet, and is planned with a wing at either side and a court in the center opening on the avenue. It is to be four stories high, but it is planned to increase this later by several stories. The wards will accommodate 125 patients and there will be a number of rooms for private patients. The hospital will maintain an ambulance service and is intended to serve the district on the upper West Side between Roosevelt Hospital and St. Luke's Hospital.

The New Bellevue Hospital.—Dr. John W. Brannan, President of the Board of Trustees of Bellevue Hospital, has been served with an order to show cause before Judge H. Fitts of the Supreme Court at Albany, why a peremptory mandamus should not be issued compelling the Board of Trustees of Bellevue Hospital to submit to the State Board of Charities plans and specifications for the $15,000,000 worth of improvements contemplated at Bellevue Hospital in alterations, repairs, and the erection of Pavilions A and B. If the mandamus should be issued and the State Board of Charities decide against the present plans, the work would be greatly delayed, as the present contracts would be canceled and possibly suits for damages would be brought against the city by the contractors.

Dr. G. Walsh, who has been in the United States Medical Corps in Panama, will soon return to Chicago and assume the post of Senior Physician at the Dunning Infirmary.

Dr. S. G. Cook has resigned his position of chief of the Board of Police Surgeons on account of his health. Dr. J. J. Quigley has been appointed to succeed him.

Cuban Quarantine.—The sanitary authorities of Havana have issued an order declaring a quarantine, beginning on May 24, against ports in Louisiana, Mississippi, Alabama, and Texas, the presence of yellow fever in these States being suspected.

New Immigration Law.—The Dillingham Immigration bill, which was passed by the Senate on May 23, contains several provisions which radically alter the existing law. Among other changes, the head tax is raised from $2 to $5, and an illiteracy clause is inserted which draws the line sharply at all intending immigrants who are unable to read.

Conviction of an Illegal Practitioner.—A young woman, claiming to be a "supernatural interpreter of disease" and known as the "girl with the *x*-ray eyes," was convicted last week of practising medicine without a license and sentenced to pay a fine of $150 or go to prison for sixty days. The woman's arrest was secured through the agents of the County Medical Society, which conducted the prosecution through its counsel.

The New York Association for Improving the Condition of the Poor began its fresh-air season on May 23, when 175 women and children were taken to Sea Breeze, Twenty-ninth street and Surf avenue, West Coney Island. While the association cannot care for all the needy mothers and babies in New York City, it has invited hospitals, clinics, dispensaries, schools, physicians, and employers to inform it of those in need. The association will act promptly and will undertake to have done all that is possible, considering the needs of the family and the resources of the city.

Arkansas State Medical Association.—The next annual meeting of this society will be held at Little Rock. The election of officers at the Hot Springs meeting on May 10 resulted as follows: *President,* Dr. C. T. Duennen, Hot Springs; *First Vice-President,* Dr. St. Cloud Cooper, Fort Smith; *Second Vice-President,* Dr. J. J. Morrow, Cotter; *Third Vice-President,* Dr. L. J. Gillespie, Hope; *Secretary,* Dr. C. C. Stephenson, Little Rock.

Illinois State Medical Association.—The following officers have been elected by this society for the ensuing year: *President,* Dr. J. F. Percy, Galesburg; *First Vice-President,* Dr. H. A. Nickerson, Quincy;

Second Vice-President, Dr. J. H. Stowell, Chicago; *Treasurer*, Dr. J. Brown, Decatur; *Secretary*, Dr. E. W. Weis, Ottawa. The next meeting will be held at Rockford.

Obituary Notes.—Dr. Boerne Bettman formerly President of the Illinois State Board of Charities and Instructor on the Staff of the College of Physicians and Surgeons, and for years a prominent practitioner in Chicago, died on May 25. He was born in Cincinnati in 1858, where his father was a physician. He received his medical education in Cincinnati, but took a graduate course at Heidelberg. He then came to Chicago, where he had since been engaged in the practice of medicine, giving also much time and care to matters of public health. Dr. Bettman is survived by a widow and two children, a son and a daughter.

Dr. William J. Gilfillan died on May 23 at the home of his nephew, Dr. George G. Cochran, in Brooklyn. He was born in Ireland sixty-six years ago, and was educated at Queen's College, Dublin. He studied both law and medicine at Columbia University, and served in the Civil War as Naval Surgeon. He had been connected with the Brooklyn Health Department for many years.

Dr. J. F. Edwards of Raritan, N. J., died on May 23. He was graduated from the New York University Medical College in 1848.

Dr. Jacob F. Raub of Washington, D. C., died on May 21, at the age of sixty-six years. He served in the Civil War and went to Washington from Bethlehem, Pa., in 1890. For years he had been medical examiner in the pension office.

Dr. N. J. A. Mueller of Dyersville, Ia., died on May 17 at the age of sixty-two years. Dr. Mueller was born in Germany and had practised in Iowa since 1866.

Dr. Lyman Skeen of Ogden, Utah, died on May 14 at the age of thirty-four years, after an illness of two weeks from tuberculous meningitis. He was born in Utah and received his medical degree from the University of Virginia. He had practised in Ogden since 1903.

Dr. J. J. Trudell of Rutland, Vt., died of tuberculosis on May 18, at the age of forty-three years. He was born in Canada and received medical degrees from the College of Physicians and Surgeons in Montreal, and the University of Vermont. He practised in Amesbury, Mass., for ten years and removed to Rutland in 1897.

Dr. Cornelius Beard of New Orleans died on May 15, at the age of seventy-nine years. Formerly he was well known as an oculist, but he gave up practice years ago.

Dr. T. C. Montague of Fredericksburg, Va., died on May 16, at the age of sixty-eight years. He was graduated from the Richmond Medical College in 1860 and served through the Civil War as surgeon in the Ninth Virginia Cavalry. At the close of the war he removed to Roseville, where he practised for some years, and in 1891 he removed to Fredericksburg.

Dr. Henry Lee Cabell of Cedarville, Va., died on May 17, at the age of seventy-eight years. He received his medical degree from the University of Pennsylvania in 1851 and fought in the Mexican War and in the Confederate Army.

Dr. Henry A. Brous of Philadelphia died on May 10, at the age of fifty-one years. He was graduated from the Kansas Agricultural College in 1874 and from the Jefferson Medical College in 1878. Seven years ago he left Philadelphia and went to Manhattan, Kansas, where he remained till the time of his death.

Correspondence.

FIFTEENTH INTERNATIONAL MEDICAL CONGRESS.

(From Our Special Correspondent.)

FIRST-AID DRESSINGS—YELLOW FEVER—TROPICAL HEMOGLOBINURIA—EXAMINATION OF BLOOD SPOTS—PATHOLOGY OF TABES—GENERAL PARALYSIS—DEMENTIA PRÆCOX.

Lisbon, April 29, 1906.

Barthélémy discussed the question of first-aid dressings in the Navy. He described his experiences with field dressings during the Dahomey war in 1892 to 1893. The dressing material was arranged in such a way that slight wounds could be dressed in two minutes and more serious injuries in five. Since 1903 dressings of this sort had been used in the French navy in three different sizes. Such dressings were also most useful in the merchant marine and were particularly suitable for use on vessels not provided with a surgeon. The author also discussed the application of first-aid dressings on the battlefield and stated that by their use the care of the wounded could be greatly expedited.

Gorgas of U. S. Army presented a communication on the etiology and prophylaxis of yellow fever. The American Commission which in 1900 investigated the question in Cuba had established the fact that the stegomyia mosquito transmitted the disease and that the period of incubation was three to six days. The most important element in prophylaxis was the extermination of the insects. He described the manner in which all collections of stagnant water were either to be done away with altogether or covered with a layer of oil at least once a week in order to destroy the mosquito larvæ. All windows and other openings were to be provided with screens, and the houses should be fumigated frequently. During the first days of the disease it was particularly necessary to guard against the bites of the stegomyia.

Moffat of Uganda read a paper on the prophylaxis and treatment of tropical hemoglobinuria. After fifteen years of experience with this condition he had reached the conclusion that out of one hundred cases of hemoglobinuria fifty would recover without any treatment, thirty-five would get well under proper care, and fifteen patients would die in spite of all efforts. He considered hemoglobinuria a complication of swamp fever, and therefore the best treatment of hemoglobinuria was the prophylaxis of swamp fever. Every patient should be put to bed immediately and not leave it until twenty-four hours after the disappearance of the last symptom of the malady. Quinine could be given in very large doses in hemoglobinuria, and the cold coal tar products, morphine, and strychnine were the most satisfactory other remedies.

The same subject was also discussed by Spindion of Athens. He considered that in addition to swamp fever there was a form of the disease produced by the administration of quinine and its salts, and he laid stress on the difficulty and importance of differentiating these conditions.

Ferreira Da Silva of Oporto reached the following conclusions regarding the medicolegal examination of blood spots: (1) The spectroscope and Teichmann's test sufficed for the identification of blood. (2) It was advisable to treat the spots with van Deen's or Richter's reagent. (3) Riegler's test had not been sufficiently tested for ordinary use. (4) The tests of Meyer, Rossel, and Klunge should be used in doubtful cases to supplement the preceding. (5) and (6) On account of its importance from a forensic standpoint the differentiation of the varieties of blood should be attempted only in well-equipped laboratories. (7) This was best to be effected by the Uhlenhuth-Wassermann method. (8) In order to differentiate the blood of closely related animals the potency of the antiserum was to be standardized very carefully according to Uhlenhuth's recently published technique. (9) If the results were not consistent no definite diagnosis could be made. (10) The methods of Marx-Ehrenroth and Sachs-Neisser required considerable time, but were useful when extremely small blood spots were to be investigated.

David Ferrier of London presented a report on the pathology of tabes. He first considered the lesions of the disease and then from the standpoint of the anatomical changes he criticised the current theories of the etiology of the malady. These comprised the following: The theory of interstitial sclerosis following endarteritis, Redlich and Obersteiner's theory of leptomeningitis, Marie's theory, according to which tabes is the result of syphilis of the lymphatic system of the spinal membranes; the theory of neuritis following a localized meningitis, and finally, the theory of Thomas and Hauser, according to which tabes is to be regarded as a dystrophy, affecting principally the sensory neurons. Ferrier regarded this last view as the proper one. He then discussed the rôle played by syphilis in tabes and

in general paralysis, which he regarded only as a different localization of the same disease. In the former disease there existed abnormal activity of the sensory neurons and in the latter it was the pyschomotor neurons that were affected. In the last portion of his discourse Ferrier sought to explain the pathological physiology of the atactic symptoms in tabes by ascribing them to an impairment of the conductivity of the nerves leading to a lack of harmony between the cortical and spinal centers.

Morini contributed a study on general paralysis in Spain. He said that in most of the asylums in that country from 5 to 6 per cent. of the patients suffered from general paralysis, though this percentage was somewhat greater in the northern part of the peninsula, where alcoholism was more general. Among the female patients only 1 per cent. had this disease. Most of the cases were in those between thirty-two and forty years of age. Dwellers in cities were twice as liable to general paralysis as those living in the country, and the disease was commoner among the married and those having responsible positions. In 90 per cent. of the cases syphilis was thought to be the underlying cause, while in 8 per cent. alcoholism was considered etiologically important. In 2 per cent. of the cases no cause could be discovered.

Tschisch of Dorpat read a paper on the forms and pathology of dementia præcox. He considered that in all cases of this disease a hereditary tendency might be traced, but the first evidences developed very early. The child was backward in development, became more and more stupid from year to year, and finally ceased entirely to progress. The disease was not amenable to treatment and developed regardless of external conditions. It was as frequently observed in the country as in the city, and masturbation played no part in its origin. In general, it might be said that the disease was the more severe the earlier it began. Cases of dementia præcox were observed which did not begin until the age of eighteen or twenty years and in which the acute period was so slight that only very good observers could detect the disease. When it developed very late the disease might resemble the picture of paranoia with delusions of grandeur and of persecution. While cases kept under careful supervision improved enough so that light work could be performed, this was not usually the case, and cure was impossible.

Mott of London stated that in general paralysis there were infiltrations of the pia mater and the arachnoid with lymphocytes and embryonal cells. A similar condition existed in the lymphatics accompanying the vessels, and there was also a new formation of capillaries and neuroglia tissues. The ganglion cells were deformed, degenerated, and had lost their connections with each other. The fibers, especially the association tracts, were atrophied. He also discussed the morphological changes in the alcoholic psychoses and in dementia præcox.

OUR LONDON LETTER.

(From Our Special Correspondent.)

BARON TAKAKI — CLASSIFICATION OF STREPTOCOCCI — MALIGNANT DISEASE OF VULVA — ST. BARTHOLOMEW'S — KINGS COLLEGE HOSPITAL — BOLINGBROKE HOSPITAL — OPEN-AIR LEAGUE — INQUEST — OBITUARY.

LONDON, May 11, 1906.

BARON TAKAKI, formerly Director-General of the Medical Department of the Japanese Navy, has this week delivered three lectures at St. Thomas's Hospital, where he became a student in 1874 and greatly distinguished himself. He won, among other prizes, the Treasurer's Gold Medal and the Cheselden Medal for Surgery. He then filled the surgical and medical residential appointments, and he has since, in the course of a brilliant career in his own country, retained a high regard for his old English hospital.

Drs. Andrewes and Horder have made a preliminary communication to the Pathological Society on the classification of the streptococci which are pathogenic to man. They found the chemical tests introduced by Dr. London gave constant results, but other characters had to be taken into consideration. Five groups of pathogenic forms could be recognized by (1) *Streptococcus pyogenes* and *erysipelatos*, (2) a type related to the *Streptococcus brevis* of the mouth and intestines, (3) *Streptococcus fæcalis*, (4) ordinary pneumococcus, (5) an aberrant pneumococcus. Intermediate forms occurred. It was suggested that a given streptococcus could be referred to one of these five types and antisera prepared accordingly. This was illustrated by malignant endocarditis. The commonest type present in this is not *Streptococcus pyogenes*, but one of those saprophytic organisms found in the intestine or mouth. Sixteen cases were examined, thirteen of them by blood culture on one or more occasions during life. Of the sixteen, only two were certainly *Streptococcus pyogenes*. No fewer than eight were of the unnamed type common in the saliva. Four were specimens of *Streptococcus fæcalis*. In two the reactions were not satisfactorily completed. The organisms isolated during life were mostly verified by the same reactions post-mortem. The two cases in which *Streptococcus pyogenes* was present were very acute, indicating that in subacute or chronic cases one of the other types was probably the cause. This observation is not without significance clinically and pathologically. It traces the source of the organisms most often picked up from the blood-stream by a damaged valve and explains the disappointing results of serum treatment in malignant cases, as well as the chronicity of other cases which may exist for a considerable time without much constitutional disturbance.

Dr. Lewers read notes of three cases of malignant disease of the vulva at the Obstetrical Society on May 2. 1. Squamous carcinoma in a primipara aged 47, recurring and removed four times. Now well, four years after the last operation. 2. Squamous also, in a multipara of 52; removed, with glands, September, 1899. Free from recurrence, March, 1906. 3. Multipara of 34, eight months pregnant, operated on for carcinoma, March, 1905; delivered naturally four days later. Recurrence in May. Glands removed. Recurrence in June; removal, and another recurrence. *x*-rays tried without effect, and she died three months later. Case 3 is noteworthy from the age of the patient and complication with pregnancy. Dr. Lewers thought Paquelin's cautery better than the knife in these cases, and in this was supported by Dr. Inglis Parsons, though another member preferred the knife and suture. That cancer can be inoculated seems a reason for using cautery. That local recurrence in the vulva is not altogether unfavorable may be argued from Case 1.

St. Bartholomew's Hospital was thrown open to visitors on Wednesday. The new out-patient and special department, having risen forty feet above ground, was inspected. The cost of the extension is to be £120,000, towards which £100,000 has been received. It is now decided to build a pathological block at a cost of about £20,000. Towards this £120 was produced by an entertainment held the same evening in the great hall of the hospital. This was somewhat of a novelty, being a series of dances arranged to illustrate the music and dance of Europe in the sixteenth, seventeenth and eighteenth centuries. Before each dance Mr. Cunningham Woods briefly recapitulated its history and the relation of its music to the forms adopted by some of the great composers.

The Drapers' Company promised conditionally £5,000 to the Kings College Hospital removal fund and afterward doubled the amount. The company has now canceled the condition and presented the £10,000 to the fund.

The Princess Royal, on Saturday, laid the first stone of a new block of the Bolingbroke Hospital, which is being reconstructed at a cost of some £30,000 and is to consist of three blocks of wards and one for offices and residential quarters. This hospital has for some years been conducted as a paying one for middle class patients. The Duke of Fife who accompanied the Princess, commended the paying principle as the wisest of all, and said if more generally adopted it would meet to some extent the financial difficulties which hampered all our hospitals.

An "open-air league" has been started to cooperate with other agencies in the crusade against consumption. Lectures, pamphlets, and house-to-house visitation are to be employed to educate the public on the value of open windows. The establishment of efficient sanatoria at low cost is to be attempted. It is stated that this can be done for £100 per bed. A farm-sanatorium for the cured patients is another item of htis new association, on the advisory committee of which are several well-known physicians.

The inquest concerning the death of Major Whyte, to which I referred last week, has again been adjourned after hearing some of the almost incredible evidence of several "practitioners of Christian Science."

Professor Metchnikoff is coming to London and will deliver the Harben lectures of the Royal Institute of Public Health on the 25th, 28th and 30th of May.

Surgeon-General Sibthorpe, C.B., I.M.S., died on May 4, aged 59. He took his L.R.C.S.I. in 1869 and became a Fellow of the sister college in 1880. He served in the Burmese campaign, 1885-6, was present at the capture of King Thebaw, was mentioned in dispatches and awarded the medal and clasp. He also served in the Afghan war and received similar distinctions. In 1897 he received the C.B. He was the author of a work on Clinical Research in India.

Dr. Matthew Baines, late Surgeon-Lieut.-Colonel First Middlesex Royal Engineer Volunteers, died on the 5th inst., at an advanced age. He had been during his long career on the staff of the West London Eye Infirmary and other institutions. He was an associate of Kings College, of which he was a student, and Knight of Grace of St. John of Jerusalem. He took his first qualifications as long ago as

1845. In the same year he added M.B., Lond., taking the Gold Medal and the University Medical Scholarship. In 1850 he proceeded to the M.D. He wrote a little on sanitary questions.

The death of another aged officer is also announced, Dr.-Inspector-General T. R. Warren, R.N. He joined the navy soon after taking his M.R.C.S. in 1832. Served in the China war, 1856, and received the medal and clasp. When at the West Indies Station he received special marks for service rendered voluntarily in Granada during an epidemic. He was in the fleet that accompanied the King to India when Prince of Wales. Subsequently he served at Malta and Plymouth. On retirement he was awarded a Greenwich Hospital pension.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

ACETONE BODIES IN GYNECOLOGICAL AFFECTIONS—PROTARGON—SKIN GRAFTING—PULSATING LIVER—ANEURYSM OF THE INNOMINATE—HABITUATION TO ARSENIC.

VIENNA, May 5, 1906.

At the meeting of the Association of Physicians Baumgarten and Popper presented a preliminary report on the excretion of acetone in diseases of the female pelvic organs. In 100 cases of gynecological affections of the most varied sorts, including normal or complicated pregnancy, inflammatory conditions, puerperal sepsis, abortion with and without fever, carcinoma of the uterus, fibroid tumors, menorrhagia, and a cyst with torsion of the pedicle, Legal's test was negative or only traces of acetone were indicated by it, and diacetic acid was never present. On the other hand, considerable amounts of acetone and diacetic acid were detected in seven cases of extrauterine pregnancy. Oxybutyric acid could not be demonstrated. Of these cases three were instances of tubal pregnancy with rupture accompanied by considerable hemorrhage, for which laparotomy and salpingectomy were necessary. Four were cases of hematocele, of which two were treated by laparotomy and two by vaginal incision and drainage. As regards the etiology of the excretion of such considerable amounts of acetone bodies it was said that the abnormalities of metabolism usually regarded as underlying acetonuria could be excluded in these cases. In some cases in which the history and physical signs appeared to indicate the presence of a hematocele but acetone and diacetic acid were not present, operation showed that ectoptic pregnancy did not exist. The authors therefore believed that in difficult cases which required differentiation between adnexal tumors and cysts on the one side, and hematocele on the other, the persistent appearance of large quantities of acetone and diacetic acid in the urine might be regarded as corroborative evidence in favor of the diagnosis of hematocele.

Stoerk has described some recent observations on protargon. This body was obtained by Liebreich from the central nervous system in 1865. Stoerk has discovered that this substance causes the white color of the kidney of pregnancy, as it is deposited in the form of polygonal granules or needle-shaped crystals at the base of the epithelial cells of the renal tubules together with globules of fat. It is taken up from this situation by phagocytic cells, for which it seems to have a chemotactic attraction. Protargon is also found in the atheromatous or syphilitic patches of the blood-vessels and in neoplasms, especially in xanthoma and xanthelasma, as well as in the adrenals. It may be distinguished from fat through its optical properties. The protargon obtained from the adrenals or from the central nervous system differs from that obtained from pathological structures in containing phosphorus and nitrogen, which elements are absent in protargon obtained from the latter source. There is therefore some doubt whether the latter substances should be considered as protargon, and it seems likely that they are decomposition products of protoplasm.

Lotheissen has operated on a girl of twenty years who was completely scalped in a machinery accident. The denuded area measured 36 by 28 cm., but it was completely covered with Thiersch grafts in several sittings. As closure of the eyelids was impossible and the eyebrows were lacking, hairy flaps were grafted in from the pubic region. Some of the hairs were retained and closure of the eyelids could be effected. The prognosis of this unusual injury has become much more favorable since the practice of skin grafting has been introduced, for now cure may be expected in about five months, whereas formerly almost half of the patients died of erysipelas, pyemia, or meningitis.

Jagic observed in Nothnagel's clinic a woman thirty-six years old who presented a genuine pulsating liver. Four years ago she had suffered from articular rheumatism; at present there were the signs of a stenosis of the left venous ostium, and further examination revealed marked negative venous pulsation in the neck and distinct pulsation of the somewhat enlarged liver; this was not due to transmission of the apex beat to the liver, but was a true liver pulse which was synchronous with the cervical venous pulse. The liver collapsed at the time of the apex beat and expanded during diastole. Possibly in this case there was a combination of mitral stenosis with patent foramen ovale.

Brosch has described the following interesting case which came under his observation in the military hospital. A man of thirty-seven years, of athletic build, died suddenly after a short illness. The autopsy revealed dilatation of the heart and of the entire aorta, and an aneurysm of the innominate artery as large as an egg. The right subclavian artery and the carotid sprang from the median lateral aspect of the sac by an almost completely closed linear opening. A further abnormality which may have had some connection with the development of the aortic disease was found in the larynx. Almost the entire upper third of the epiglottis was missing and the upper edge of this structure was formed by a fairly horizontal, somewhat rounded, ragged border. The microscopical examination of the numerous elevated patches present in the aorta showed swelling, fatty degeneration, and moderate calcification in the intima. In the aneurysmal sac and in its neighborhood there were also marked changes in the media, the muscle fibers having completely disappeared in some places and numerous cellular foci being present. These lesions indicated that the condition was probably the result of a syphilitic infection acquired years ago and apparently cured, since the patient was the father of three living children.

Hausmann has made experiments relating to the subject of habituation to arsenic. He was able to produce habituation to the drug in chickens and to a less extent in dogs. A conspicuous feature was the very great individual differences presented by the experimental animals in their tolerance of the arsenic, so that in some cases it was possible to produce habituation while in others this result could not be reached. At first the poison is excreted almost entirely through the feces, and then there is a period during which the amount of the stools decreases very considerably while that present in the urine does not exhibit any increase. It is therefore likely that the long-continued administration of the drug causes it to be eliminated in some other form, but in what way this is effected cannot as yet be determined. Hausmann has never yet observed any abstinence symptoms even when the drug had been used in large amounts for years. The accounts of the injurious effect of the sudden stopping of the administration of arsenic in man are probably to be explained on the ground that the condition of the patient is usually abnormal when the use of the remedy is begun, so that a rapid relapse after temporary improvement may easily simulate abstinence symptoms.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

VITILIGO — APPENDICOSTOMY FOR SPRUE — PROPHYLAXIS OF CHOLERA—MULTIPLE KELOIDS FOLLOWING HYPODERMIC INJECTIONS—THE PLAGUE—MALARIA.

MANILA, P. I., April 11, 1906.

THE regular monthly meeting of the Manila Medical Society took place at St. Paul's Hospital at 8.30 P.M., April 9, 1906.

Several clinical cases of vitiligo were presented by Dr. Bartels. He stated that his observation in the Philippines was that these cases occurred only in females. Dr. McDill also presented several cases, one of them a tuberculous elbow. He remarked that in the United States tuberculosis formed about 15 per cent. of all the surgical cases, but that in the Philippines he believed that the percentage was very much less. He stated that he was not yet prepared to speak definitely upon this subject, because his experience had not been large enough, but the indications were that surgical tuberculosis was a rather rare affliction in the Philippine Islands, and this was particularly strange in view of the fact that pulmonary tuberculosis is so very common among the natives.

He presented another case, one of sprue, in which an opening had been made in the appendix for the purpose of irrigating the colon, which had been regularly done for some days. He stated that, so far as he was aware, this was the first case on record in which surgical relief of this kind had been attempted for that disease. The prognosis in this particular case was not very favorable.

Dr. Ralph T. Edwards of the Bureau of Science gave a brief description of his experience in "Provincial Inoculation with Cholera Prophylactic." He stated that the prophylactic used was that prepared by Dr. R. P. Strong. In his experience in inoculating about six thousand persons, he found that the reaction was very slight, and that the only disturbance felt was a slight fever, and anorexia the next day, but that twenty-four hours later the symptoms of

the inoculation passed away. No untoward results were encountered. He stated that, while it was impossible to demonstrate beyond question that the prophylactic was of assistance in stamping out the cholera in the towns in which it had been used, yet he was inclined to the belief that, judging from the rapid cessation of the disease in those villages in which inoculation was done, it had a decided influence in that direction.

In the discussion that followed, one of the speakers stated that it was to be very much regretted that the present outbreak of cholera in the Philippines did not afford an opportunity for making a proper and adequate test of the usefulness of stamping out cholera by means of the cholera prophylactic. He said it had been used in Bilibid Prison, and that about two thousand of the four thousand inmates in that institution were inoculated; that the disease disappeared four days after the inoculations commenced, but that it was also true that no cases occurred among the uninoculated. Therefore the results could perhaps with more justice be credited to the ordinary sanitary measures which were used than to the prophylactic.

In the town of Angat, where the prophylactic was used, the sanitary measures with the view of combating the disease were started at the same time that the inoculations were begun, and in a few days the disease completely disappeared; in this instance the good results could scarcely be credited to the inoculations; that in the town of Siniloan, where such remarkable success was had in stamping out the disease, the sanitary measures were started a few days before the work of inoculation began, and three days after the arrival of the inoculators the disease had entirely disappeared. This town has a population of about four thousand, and only about two thousand were inoculated. In view of the fact that no further cases occurred among uninoculated as well as among inoculated, this again was an unsatisfactory test.

The general impression seems to be rapidly gaining ground that while the prophylactic inoculations against cholera will be of some assistance in stamping out the disease in the future, yet it can never take the place of the ordinary sanitary measures, owing to the physical impossibility of inoculating a large number of people in a short period of time. It will be valuable principally in affording those an opportunity who desire to be protected from cholera to come forward and be inoculated, and will be especially important for sanitary inspectors, physicians, and others whose work is at short range with the disease.

Dr. Maximilian Herzog of the Bureau of Science gave brief notes on "Three Cases of Multiple Keloids in Chinamen, Following the Habitual Hypodermic Use of Morphia," and presented a number of photographic illustrations of cases. He stated that in his experience in other countries no cases of this kind had come under his observation.

The annual increase in the number of cases of plague, which occurs about this season each year, particularly in China, has commenced somewhat earlier in Amoy and Hong Kong than heretofore; accordingly the Quarantine Service has imposed a quarantine against steerage passengers bound from Amoy to the Philippines.

In Manila, for the first time in more than a year, plague-infected rats have again been found. The Bureau of Health is taking the same measures in the district in which the infected rats were obtained as if the cases actually occurred among human beings. It is hoped that the outbreak can be avoided altogether, or, at least, greatly minimized by the measures which are being taken.

The lay press reports a severe outbreak of malarial fever among the troops at Camp Stotsenburg. This is a matter of considerable importance to the military authorities at this time, because the two regiments which are now en route to the Philippines are to be stationed at that post, in addition to the three that are already there. One hundred and forty-three cases are reported in the hospital.

OVARIAN GRAFTING.

To the Editor of the Medical Record:

Sir:—The query as to who was the mother of the child, in the case of ovarian grafting reported in the Medical Record for May 5 is being discussed from various points of view, the general sentiment being in favor apparently of considering the mother who bore the child as the real mother. The position taken by Dr. Perry of Avon must, however, be given serious consideration. He says that the mother who bore the child (Mrs. W.) simply carried the product of the fusion of the sex cell from Mrs. P. and the sex cell from the husband of Mrs. W. The child was then simply parasitically carried by Mrs. W., and Mrs. P.'s sex cell did not forfeit its ancestry, however much it may have adapted itself to its environment in the new hostess. The child and its two mothers have not as yet been brought together, as it is too early to note definite characteristics of resemblance. The question which Dr. Perry brings up relative to the postoperative development of ova from latent embryonic cells of the broad ligament in Mrs. W., must receive consideration in a scientific discussion, but it seems too far away to be given important bearing, on the ground that the experiments of Simon show that grafted ovaries undergo changes which leave them in a condition eventually to furnish ova. The question as to any portion of ovary having been left after the operation upon Mrs. W. is really quibbling. No part of either ovary was left. That point was one that had been eliminated as a practical fact, and it needs no genuine consideration.

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Progress of Medical Science.

Boston Medical and Surgical Journal, May 24, 1906.

Remarks on the Infections of Joints.—R. W. Lovett recognizes (exclusive of tuberculous and chronic disease), four groups of joint infections: (1) Acute osteomyelitis of the articular end of one of the long bones involving the joint secondarily; (2) acute suppurative synovitis or joint abscess; (3) acute plastic synovitis leading to joint obliteration and (4) acute serous synovitis. With reference to the exact nature of acute rheumatic arthritis, he finds that the synovitis of this disease does not differ clinically or pathologically from the synovitis of infectious diseases, except that it is more benignant. It can be produced by the injection of cultures of pyogenic organisms, and pyogenic organisms have been found in the joint effusions. The specific character of these has not been accepted. No satisfactory explanation of rheumatism has ever been offered, and the history of late years shows a steadily larger number of "rheumatic" cases constantly being classed among the infections. It cannot as yet be regarded as a specific infectious disease, but the evidence rather tends to identify it as an "attenuated pyemia," as it has been called. The evidence is not yet conclusive, and the fact that the symptoms are so readily controlled by salicylic acid in many instances is not in accord with what we know of infections. The author summarizes his views by stating that acute infections of the joints of undoubted bacterial origin occur in all grades of severity in connection with many infections. As a rule any one of two or three types of joint inflammation may occur in connection with any one infection, no one type of joint disease constantly accompanying any one infection. In many cases the source of infection cannot be established, and in such cases the importance of remembering the function of the tonsils and the presence of pyogenic bacteria in the mouth as a ready source of infection is of importance. That acute articular rheumatism is an infection seems probable from bacterial and especially from clinical evidence, but this cannot yet be regarded as definitely proved.

Pruritus Ani: Its Etiology and Treatment.—A series of clinical histories is given by T. C. Hill who classifies the exciting causes as (1) ulcerations or abrasions of the anal canal; treatment, cocaine anesthesia, galvanocautery, vaseline, opium suppository; (2) local catarrh; treatment, secure soft evacuations by aperients, wash the bowel daily with a four per cent. boric acid solution, apply stimulating silver nitrate solutions or Peruvian balsam to any remaining abrasions or ulcerations; (3) external hemorrhoids; treatment, removal under cocaine anesthesia; if the base of the pile is broad it is better to close it with catgut sutures, otherwise it may be allowed to heal by granulations; (4) pockets in the mucosa above Hilton's white line; treatment, swab out with balsam or silver as above noted. (5) Small polyps of the anal canal, protruding internal piles, prolapse of the rectum and anal fissures, as well as other conditions, do doubtless occasionally cause itching about the anus, but very seldom in the writer's experience are they the cause of an old chronic or inveterate pruritus ani. When encountered, however, associated with pruritus, they should be dealt with according to their special surgical indications. To bring about the renewal of new skin which is tough and leathery and covered with dead and sodden epithelium, the author has found nothing better than silver nitrate solution and citrine ointment.

New York Medical Journal, May 19, 1906.

Rectal Anastomosis of the Ureters.—After a brief review of recent advances in the surgery of the ureters, Carl Beck refers particularly to the work of Maydl who showed the profession how to preserve the sphincteric

action of the ureters by implanting their ends together with the vesical trigonum into the sigmoid flexure. Beck himself has performed the operation but once, his patient being a boy of nine years with extrophy of the bladder. Several autoplastic operations had failed. Finally he made a semilunar incision around the upper border of the wall of the bladder and divided the peritoneum underneath in a longitudinal direction. For exact localization small catheters had been introduced into the ureters before. Then the opening was so far enlarged that the ureters could be isolated, so that finally it was possible to suspend the bladder fragment, so to speak, on the ureteral pedicles. The vesical trigonum, together with the ureters, was then exsected in a rhomboid shape and implanted into a longitudinal slit made in the anterior surface of the sigmoid flexure, which was found immediately behind the posterior wall of the bladder on the left. Mucous as well as serous membranes were individually united. For the inner (continuous) suture thin silk was used, while for the serous coats catgut (interrupted) was selected. The afferent portion of the flexure was clamped off before incision. The laparotomy wound could be united after the inner margins were equalized, and the inner borders of the recti muscles mobilized so that they could be brought into apposition. A tube was introduced into the rectum. In spite of severe reaction the boy recovered. He controlled the sphincter well and could at times go for five hours without passing urine. He had, however, occasional irritation of the mucous membrane of the rectum and diarrhea. He died suddenly of pneumonia fourteen months after operation.

Myomectomy.—C. P. Noble traces the historical development of this operation and tabulates his personal cases, consisting of 44 vaginal myomectomies and 22 others in which the myomectomy (abdominal) was combined with some other operative procedure. In the former series there was one pregnancy with delivery at full term, while in the latter there were two pregnancies with one delivery at full term and one miscarriage. One question of practical importance is the relative value of hysteromyomectomy and myomectomy in curing the patient of her symptoms. The author's figures do not vary greatly from those of Winckler, who declared that myomectomy is curative in 73 per cent. while the radical operation is curative in 97.5 per cent. As to the relative dangers of the two operations, statistics of different authorities are given. In the author's own experience in 42 vaginal myomectomies there were 2 deaths, one from embolism after the removal of a sloughing fibrous polyp and the other from an endocarditis which antedated the operation, after the removal of a sloughing fibroid polyp. In the abdominal myomectomies there was one death due to infection of the perineum following a closure of the latter done at the same time. According to the author the field for myomectomy is a limited one. In his own practice there have been sixty-six myomectomies out of a total of 337 operations for fibroid tumors. He is not inclined to broaden the field of myomectomy beyond this proportion. If he were to make any change in his practice, it would be, he says, in the direction of increasing the proportion of vaginal myomectomies in comparatively young women in whom it is still desirable for pregnancy to occur. Vaginal hysterotomy, combined with anterior colpotomy, will enable the surgeon to remove submucous and partly intramural fibroids with safety in many cases.

The Surgical Treatment of Chronic Dyspepsia.—G. E. Brewer notes the advance in the accurate diagnosis of various lesions and symptoms formerly grouped under the indefinite title of "dyspepsia," and calls attention to the surgical measures now in vogue for the relief of respectively ulcer, cancer, and benign pyloric stenosis. The latest statistics of surgical treatment of cancer of the stomach while still unsatisfactory are far in advance of those of other organs such as the uterus, rectum, tongue, and breast taken at the same period after inauguration of radical surgery in these regions. In view of these facts Brewer declares that the physician has no more right to deny his patient with suspected cancer of the stomach an opportunity for radical removal than he has to discourage operation in case of gunshot wound of the abdomen, or to withhold antitoxin from the patient with malignant diphtheria. As to ulcer, the indications for treatment are uncomplicated as open cases are. (1) Intelligent medical treatment for all primary cases of simple round ulcer. (2) If unrelieved after six weeks of this treatment, operation should be advised. (3) Operation in all cases of indurated chronic ulcer, and in all cases of recurrent symptoms after a primary cure. The nature of the operation to be determined after the abdomen is opened, and the condition accurately diagnosticated by inspection and palpation. The symptomatology of benign pyloric stenosis is passed in review and statistics given of the results of surgical intervention in this locality. He believes that the latter warrant the statement that in progressive cases except those due to gumma and those whose condition forbids the use of a general anesthesia, a gastroenterostomy should be performed as soon as the diagnosis is made.

Delayed Value of Surgery in Epilepsy in Certain Cases.—The main argument of W. P. Spratling is that in many cases of surgery of the brain for the relief of epilepsy, favorable results may be delayed for months and even years. Epilepsy from trauma may not arise until years after the receipt of the injury. Certain tissue changes in the meninges must have time to occur, and they are often of slow progression. Surgical operations for the relief of such conditions may do the patient no apparent good at the time, but they may also mark the beginning of an era of improvement that not infrequently terminates in a complete cure. In some of these cases the value of such treatment does not seem to come so much through the removal of pathological tissue, or of irritating agencies whose power to irritate may have become innocuous, as it does through the general impression the operation makes upon the organism. One special case is referred to which illustrates the fact above mentioned.

Journal of the American Medical Association, May 26, 1906.

Mesenteric Diverticulitis.—H. C. Gordinier and John A. Sampson publish the report of a case of intestinal obstruction due to an inflamed intramesenteric diverticulum of the small intestine, in which the puckering and thickening of the mesentery caused an angular bending of the gut with the result mentioned. They discuss the general subject of such diverticula and conclude that they occur more frequently in the small intestine than the autopsy records would indicate, and may frequently have been the cause of minor symptoms, and sometimes may even have endangered life, without the true cause of the trouble being recognized. They are usually multiple, and may involve long areas of the intestine. They consist of hernial protrusions of the mucosa and submucosa through a weakened place in the intestinal wall, usually alongside of the blood vessels at the mesenteric border and push between the two folds of the mesentery. This location renders them less liable to pathological changes than if they hung free or were attached to the abdominal wall, and the semifluid contents of the small intestine also render them less a menace than similar formations of the large intestine. In case they become inflamed, a mesenteritis is likely to occur, with possible results as in the case reported. Their multiple character and the fact that they are commonly intimately associated with the larger blood vessels render them ill-adapted to safe operative procedures. When operative treatment is indicated it must be adapted to the special needs of the case. Acquired diverticula of the large intestine may occur at weakened points in any part of its circumference, and their occurrence on the free border and the harder contents make them more productive of disturbance; a number of cases have been reported. The difficulty of diagnosing the strictures and inflammatory tumors from this cause from cancer and the fact that intestinal diverticula are a frequent source of vesicointestinal fistulæ are mentioned as of especial interest. The authors suggest that these diverticula receive more attention.

The Faucial Tonsil.—After describing Waldeyer's ring and the normal proportions and development of the tonsils, J. G. Wilson notes certain points of surgical interest. The blood supply of the tonsil, instead of being derived from the lingual artery as stated by Gray, comes mainly, he states, from the facial artery in man, either through a distinct tonsillar artery, or, as is more common, from the tonsillar branch of the ascending palatine of the facial. The danger of injury to the internal carotid in operations on the tonsil he considers minimal, with 1.5 cm. of loose areolar tissue in the way, and the ease with which the tonsil can be pulled forward, leaving the artery in place. Hemorrhage may be due in rare instances to an abnormal position of this artery, but the chief source is the tonsillar artery. Ordinarily the risk is slight as the vessels usually contract well. Other vessels, injury of which may cause troublesome hemorrhage, are the ascending pharyngeal, the lingual branches of the anterior and the posterior pillars and plica triangularis, and a branch of the superior palatine artery. Wilson discusses the comparative

anatomy and development of the tonsil with reference to the question of whether or not it is a phylogenetic residue, and concludes from all the facts that there is little support for the opinion that it is a vestigeal organ. As regards the function and secretion of the tonsil, the first fact that presents itself, he says, is that we have here a definite organ actively engaged in the production of lymphocytes, which pass either directly into the lymphatics or through the mucous membrane into the mouth. Concerning this mouth secretion there has been much discussion as to whether it is protective as Metchnikoff thinks, or whether it is not more of an excretion of already utilized products. The general belief seems to be that the tonsil is one of several similar organs surrounding the upper alimentary tract, very liable to disturbance and infection, whose physiological function is somehow concerned with active processes at the beginnings of this tract. One function may be to act as a defensive barrier against microorganisms and, it may be, against other injurious bodies. He thinks too little consideration has been given to the question of the effect of diseases demanding increased leucocytosis on the tonsillar exudations in the mouth, and the relation of this to the disturbances of buccal and gastric activity that occur in these diseases.

Some Common Dermatoses.—Oliver S. Ormsby considers the points of interest in some of the common diseases of the skin which are accompanied by the sensation of itching, with special reference to their differential diagnosis. He defines the terms prurigo, pruritus and itching and states that they have been used so often interchangeably that they would seem synonymous. He states that prurigo is now restricted to the disease first described by Hebra and states that it is a chronic and usually incurable disease. The earliest lesions, he says, are urticarial, after which the classic lesion, a colorless, slightly reddened papule appears. The essential cause is unknown, but the disease is generally classed as neurosis. Poverty and unsanitary conditions are predisposing causes, and males are more often attacked than females. Pruritus, Ormsby states, is a disease, not a symptom. It is a sensory neurosis, in which itching is the sole essential symptom. It occurs usually in adults, a common example being the so-called senile pruritus. In local pruritus the areas most often attacked are the anal, vulvar and scrotal regions, while occasionally the palms, face and scalp are also involved. He reviews the etiology of the condition at some length. He describes the lesions of scabies with the differential diagnosis. In the treatment of this condition he states that sulphur heads the list of remedial agents. In the treatment of pruritus he states that local remedial agents are very important and if properly selected and applied are of great value. The best of these, he states, are carbolic acid in oil or lotion: thymol or menthol, 1 to 4 per cent. in an ointment; resorcin, 0.5 to 2 per cent. in a lotion; camphor in an ointment or dusting powder; chloral in an ointment or lotion, and tar preparations. He also recommends hot water, electricity, and radiotherapy. In all cases free elimination should be encouraged by salines and other laxatives. He outlines in detail the treatment in a case of anal pruritus.

Dyspepsia in Elderly Individuals.—J. S. McLester calls attention to the possibility of gastric cancer when symptoms of indigestion appear for the first time in elderly people or as exacerbations of a previously mild condition. Such cases are naturally first seen by the family physician, and on him devolves the responsibility of seeing that nothing is omitted that will aid in arriving at a proper diagnosis. We have come to suspect cancer when uterine hemorrhage occurs after the menopause, and why, he asks, should we not give to the stomach the same consideration as regards the pathological possibilities when in advanced life it begins to show signs of disease. Examples of overlooked cancer under these conditions, he says, are common, and he reports three cases of his own observation, all hopeless when received at the hospital, which could possibly have been saved with an earlier diagnosis. In these cases of gastric disorder in elderly persons every means of diagnosis should be employed, even to exploratory incision when other methods still leave a reasonable doubt.

The Lancet, May 12, 1906.

Invisible Surgery.—J. L. A. Aymard advocates the use in division of the skin of oblique incision instead of division at right angles to the surface. In view of the thinness of the skin in most places, he believes that except in the immediate proximity of a suture, the tendency of the ordinarily applied dressing is to cause rather separation than approximation of the wound edges. In a slanting cut through the skin, contact is perfect and the greater the pressure, within limits, the better. Healing proceeds as usual, but the granulation tissue with subsequent fibrous and scar tissue is reduced to a minimum. The author describes the details of an ordinary operation as practised in accordance with the ideas above expressed and makes a plea for the massage of wounds and scars, claiming that in this way, in any ordinary wound involving the whole thickness of the skin, the scar may be prevented from forming adhesions.

Primary Intestinal Anthrax in Man; Septicemia; Hemorrhagic Septomeningitis.—The case is elaborately reported by J. H. Teacher, whose patient was a man of thirty-six years. Clinically the case was one of an acute illness, terminating fatally within twenty-four hours, the prominent features being headache, cerebral irritation manifesting itself in restlessness, delirium, and finally convulsions. There was also slight abdominal tenderness which might have suggested peritonitis, but there was no pyrexia. The history afforded no hint as to the nature of the disease. At the post-mortem examination the case presented the features of an acute septicemia and early peritonitis which appeared to spread from a hemorrhagic lesion of the small intestine with ulceration and necrosis internally and signs of an infective process extending up the mesentery. The nervous phenomena were explained by the discovery of a diffuse hemorrhagic condition of the pia-arachnoid, which microscopical examination demonstrated to be an early meningitis due to the bacillus anthracis. The identity of the organism was proved by cultivation and inoculation experiments. The intestinal lesion was clearly the oldest and the conclusion appears fully warranted that the case was anthrax septicemia due to intestinal infection caused most probably by the ingestion of a quantity of anthrax bacilli or spores in food.

The Technique of Colon Irrigation in a Case of Appendicostomy for Colitis.—In a certain case W. Ewart employed for the irrigation of the cecum and colon a No. 8 male India rubber catheter with a soft, pliable copper wire slightly bent on itself at the end so as to avoid injury of the mucosa. The catheter is dipped in glycerine and passed for a few inches. As much as twenty pints of fluid may be used, the patient in the dorsal position being supplied with a good-sized rectal tube with attached outflow pipe. To irrigate the lower ileum the catheter is bent, not too sharply, to about 110°—two and a half inches from its tip. It should be passed downward, inward, and backward. The assurance that the catheter has entered the small intestine is given by the greater length introduced (maximum in this case nine inches), by the subjective sensations of the patient experienced in the hypogastrium even so far as the middle line, by the direct palpation through the abdominal wall sometimes obtained by the operator, and by the skiagram of the stilet *in situ*. Systematic lavage of the lower ileum such as would be suitable for typhoid ulcers, is best performed with two tubes instead of one. The author is satisfied that it is possible to irrigate in this way the lower foot or two of the ileum. He uses a No. 2 and a No. 6 gum catheter. The smaller catheter is passed through the valve first, in the manner described, to the distance desired, and the larger one is then introduced into the cecum, where it acts as a draw-off for the fluid injected higher up. This arrangement might enable antiseptics to be used locally which it might not be desirable to expose to absorption by the mucous membrane of the entire colon. The quantity injected being noted, evidence would be obtained that it had been duly recovered from the cecum either by simple syphonage or if necessary by aspiration with the syringe. For this lavage the patient should assume a three-quarters right lateral decubitus to promote the descent of the injected fluid into the cecum.

Bronchopneumonia and Pyemia.—J. Mackenzie records one fatal case, the primary disease having been measles in a boy of twenty months. Originally strong and well nourished, he was when first seen suffering from measles associated with delirium. Rash appeared on the fourth day, at which time the case presented, except for the delirium, nothing unusual. On the sixth and seventh days of illness the rash had almost gone, but the temperature had not settled and the child was very restless and delirious. Evidence of commencing pulmonary consolidation could be detected at the left base but the nervous symptoms were not such as one might expect at the beginning of an uncomplicated pneumonia with moderate temperature (102°). Examination of the nervous system and of the bones afforded

no evidence of the presence of meningitis or osteomyelitis. On the ninth day of illness delirium was still present and consolidation at the left base was so advanced as to suggest the presence of fluid. The patient died on the eleventh day from the onset of the measles symptoms and on the eighth day from the appearance of the rash and on the fifth day from the detection of the bronchopneumonic signs. The most prominent features of the case were the persistent delirium with moderate temperature and the very rapid and advanced consolidation of the left pulmonary base. Full autopsy findings are given together with bacteriological findings. The author would regard the case as (1) an inflammation due to a virulent *staphylococcus aureus*, which first attacked the smaller bronchi and led to the appearance of signs of pulmonary consolidation; (2) the rapid progress and profuse infiltration and exudation giving rise to complete consolidation and atelectasis of the left lower lobe, and (3) the exalted virulence of the organism producing such a growth in the blood as to give rise to embolic infections of the various internal organs, leading to small abscess formations; and (4) the whole process resulting from infection by a highly virulent organism, the constitutional symptoms of intoxication overshadowed the effects of the local pulmonary lesion.

British Medical Journal, May 12, 1906.

Eucalyptus Poisoning.—J. Orr saw a boy of two years and nine months fifteen minutes after the child had swallowed two drams of oil of eucalyptus. He was unconscious, collapsed, with rapid pulse, stertor, and pin-point pupils. He had already vomited and had begun to purge. Orr gave ten grains of zinc sulphate and later, the child having vomited again, a dram of whiskey. The state of collapse still persisted and strong coffee was given. Soon the pupils began to dilate, consciousness returned, and in one hour the child seemed quite well. There were no sequelæ.

Post-mortem Cesarean Section.—P. Tytler records the case of a woman of twenty-six years who died in his presence from coma following fourteen days of meningitis near the end of the eighth month of pregnancy. Immediate delivery was attempted per vaginam, but it was not possible to dilate the cervix sufficiently to introduce the hand, so a cesarean section was performed with a histoury and the child extracted by the leg. It cried after a few seconds and was soon breathing well and was doing well at the age of ten weeks, though it had a small umbilical hernia. The placenta lay in the line of incision and bled freely.

Berliner klinische Wochenschrift, May 7, 1906.

Disappointment and Hope in the Treatment of Tuberculosis.—Renzi describes as disappointments attempts which he made to improve the condition of tuberculous patients by the use of carbon dioxide, and experiments on tuberculous animals intended to imitate the beneficial influence of emphysema in the human being. These efforts proved fruitless, however, and have been abandoned. The hopeful features of the treatment lie in the application of the principles of pure air, hyperalimentation, and rest. The influence of the former is ascribed not to its excess of oxygen nor to its deficiency in bacteria, but to the absence of the toxic principles present in impure air which greatly lessen the powers of resistance to the tuberculous infection. In this connection the author states that no person reaches the age of thirty years without having acquired a tuberculous infection. In considering the subject of hyperalimentation he states that one of the most important factors is to secure great variety in the diet. The use of sugars appears to be particularly advantageous from time to time, and levulose is the most effective of the list. Dextrin is less useful but on account of its cheapness is to be recommended for poor patients. The effect of rest in the treatment of tuberculosis was demonstrated by the author's experiments on two sets of tuberculous guinea pigs. One set kept in a cage that was maintained in constant motion by mechanical means succumbed to the disease much earlier than the control animals. The inhalation of oxygen was found distinctly advantageous in animal experimentation, but clinical tests have so far proved inconclusive. The author also lauds highly the value of sodium salicylate in tuberculosis, stating that it effects a firmer combination of oxygen with the hemoglobin.

Ochronosus.—Pick describes a case of this extremely rare form of general pigmentation, and in closing his long discussion of the subject states that the pigment deposited is chemically closely related to the melanins. The pigment dissolved in the blood is first precipitated in cartilage and cartilaginous tissues, but later invades also the connective tissue muscle fibers and epithelial cells without impairing their vitality. The coloration produced may give rise to an extremely characteristic pigmentation of the exposed portions of the body such as the ears, sclera, face, lips, and hands so that the diagnosis may be made during life. The kidney may be affected by the process and the pigment or an antecedent of it may be excreted in the urine. The long-continued use of small amounts of carbolic acid may give rise to the condition, as in the author's case, and the endogenous form may be the result of the action of tyrosinase on the alkapton bodies present in the excretions of those suffering from alkaptonuria. The same thing may occur in individuals in whom aromatic hydroxyl products are formed from the albumin molecule through autolytic, intravital, cellular degeneration.

Münchener medizinische Wochenschrift, May 8, 1906.

Anesthesia in Minor Surgery.—Verth describes in detail the technique of the various methods of producing local insensibility to pain that are available for use in minor surgery. These are now so numerous, he says, and can be combined so advantageously as to make it possible to spare the patient almost all pain in most operative procedures. He first describes the method of inducing primary ether anesthesia, which he says suffices for many operations, and is entirely free from danger. It is his practice to give a hypodermic injection of morphine half an hour beforehand. This insures the development of the anesthetic stage after a few inhalations of the ether and protracts its duration, so that usually it is not necessary to repeat the use of the anesthetic. The details of securing infiltration anesthesia are also set forth, and the author calls attention to the fact that this method is not well suited for use in regions that are the seat of inflammatory changes, both because the injections are painful under these conditions and because there is danger of disseminating infection and of lowering the powers of resistance of the tissues. Spinal anesthesia is not considered suitable for minor surgery, but the various forms of nerve blocking are said to be very useful, and their mode of application is given.

Determinations of the Viscosity of Human Blood.—Determann describes an improved form of apparatus for this purpose, the principal advantage of which is that it permits the blood to be taken from the ear by an ordinary puncture instead of requiring aspiration of a considerable quantity from a vein with a syringe as is necessary in the older procedures. In this way alterations of viscosity produced by the excess of carbon dioxide present in blood obtained from a vein that had been congested by the application of a ligature are avoided. Another improvement to which the author attaches considerable importance is the use of hirudin to prevent coagulation of the blood during the time needed for carrying out the determination. An extremely small particle of hirudin, only about 0.00001 gram being necessary, is placed on the skin at the site of puncture before this is made and the outflowing blood becoming subjected to the influence of the hirudin is rendered incapable of clotting for a considerable length of time. Details of technique for the use of the instrument are given.

Symmetrical Gangrene of the Eyelids Following Injury to the Forehead.—Apetz says that symmetrical gangrene of the eyelid is extremely rare, although gangrene of one side or the other not infrequently is seen in certain inflammatory conditions. He describes a case in which both eyelids were affected in this way following trauma to a part situated at some distance from the lid. The patient was an infant of eighteen months that had fallen and received an insignificant abrasion at the left side of the forehead. The wound apparently did well, but on the third day edema of the forehead and of the eyelid appeared, which on the fifth day had become severe and was accompanied by evidences of beginning gangrene of the skin and subcutaneous tissues of all four lids. This progressed until the loss of tissue was of considerable size, but the free border of the lid in each instance was spared by the process. Under appropriate treatment the necrotic areas healed, and when the child was seen, two months later, it was astonishing to find how little deformity remained. There was neither ectropion nor distortion of the cilia. Examination of the pus obtained from the frontal abscess and from the necrotic areas revealed the presence of the streptococcus pyogenes.

Deutsche medizinische Wochenschrift, May 10, 1906

A Diagnostic Serum Reaction in Syphilis.—Wassermann, Neisser, and Bruck describe a method by means of which they have been enabled to obtain a specific

serum reaction for syphilitic material. The procedure consists in mixing inactive serum of monkeys that have been adapted by injections of luetic material, with organic extract or serum from syphilitic individuals and then adding to the mixture fresh normal guinea-pig serum to furnish the necessary complement. The mixture is allowed to stand in order to give time for combination to take place, and then whether or not the complement has been anchored wholly or in part is tested by the addition of an inactivated specific hemolytic serum with the corresponding corpuscles. If the former is the case hemolysis will be wholly absent or greatly diminished. While the method has apparently not yet been perfected to such a degree as to make it available for clinical use, it does afford the possibility of determining whether there are present in the human serum or immune serum specific antibodies against the products of the syphilis organism, and it is therefore possible to determine the presence of syphilitic products in a given organ.

Myiasis and Its Treatment.—Smit describes the symptomatology and treatment of this unusual disease, of which he has observed a number of cases. The flies which most often deposit their ova in the human body are *Lucilia hominivora, Calliphora anthropophaga,* and those belonging to the genue *Œstrus.* The insects choose as sites of predilection for the disposition of their ova diseased or ulcerated tissues such as are found in suppurative conditions of the nose or ear, and in leg ulcers. The symptomatology depends very largely on the region affected, and when the nose or ear is invaded the suffering may be extreme and the prognosis very grave owing to the possibility of cerebral complications. Many methods of treatment have been advocated, but most of them are rather unsatisfactory. The one most often tried, that of mechanical removal of the larvæ is usually very difficult, especially in the nose, owing to the activity of the larvæ in retiring into their little submucous burrows. After trying various other plans the author has found that by far the most satisfactory results are to be obtained by the generous use of calomel as a dusting powder, and he gives the histories of two cases in which this treatment afforded very prompt relief and brought about death of all the embryos in a very short time.

French and Italian Journals.

Typhoid Fever and Pulmonary Gangrene.—Ch. Lesieur and J. Froment cite the history of this case. The patient, a man thirty years old, was brought to the hospital on the eighth day of typhoid. The patient was an alcoholic. The urine was strongly albuminous. Delirium and meningitic symptoms developed. In the fourth week bed sores appeared in the lumbar and dorsal regions, and at the same time an abscess on the elbow. Congestion of the lungs was followed by bronchopneumonia. The patient expectorated large quantities of blackish sputum, which was horribly fetid. Physical examination gave evidence of cavity formation at the base of the right lung. Autopsy showed simple congestion of the left lung. Gangrene had involved the base of the right lung. Peyer's patches were for the most part normal. The encephalon was normal. Cultures from the base of the right lung showed probable Eberth's bacillus. Culture from the pus of the elbow abscess showed staphylococci. Serum agglutination in this case was late, occurring on the thirty-fifth day. Eberth's bacillus was found in the blood on the third day, but disappeared on the thirty-seventh day.—*Lyon Médical,* April 22, 1906.

Ophthalmia of a New-born Child, of Pneumococcic Origin, with Grave Lesions of the Cornea.—F. Chaillous observed this patient, a child seven weeks old. There was an abundant conjunctival discharge and serious corneal lesions. Chaillous, whose first impression was that he was dealing with an ophthalmia of gonococcic nature, made an immediate bacteriological examination of the conjunctival secretion, and discovered in the preparation numerous diplococci. These microorganisms were found mostly among the cells, although some of them were included in the cells. There were numerous polynuclears and some epithelial cells. The colonies were composed of almost pure pneumococci. This observer calls attention to the fact that the diagnosis of ophthalmia cannot be made upon the time of the appearance of the symptoms nor upon the abundance of the discharge. Although pneumococcic ophthalmia as a rule is not a grave affection, it may nevertheless assume such an aspect.—*Revue Francaise de Médecine et de Chirurgie,* April 25, 1906.

Albumin in the Urine of Tuberculous Patients.—Labbé and Vitry call attention to the practice of forced feeding in the case of tuberculous patients who have reached the stage of cavity formation. The writers have, for the purpose of studying the results of this method, carried out a series of experiments in relation to the albuminoids. They have discovered that the capacity of these patients for assimilation of such food is far inferior to the normal, and decreases regularly in proportion as the quantity of albumin ingested is increased. Whatever may be the quantity ingested, the total amount of nitrogen in the urine which is eliminated remains constant. In each patient there is a limit to the excretion of nitrogen. If this figure is exceeded in the feeding, the result is the overburdening of the digestive apparatus.—*La Presse Médicale,* February 14, 1906.

Puerperal Eclampsia with Fifty Grams of Albumin. Recovery.—Rendu reports this case. The patient was a woman 21 years old. The last menstruation took place between April 9 and 14. On August 8 analysis of the urine showed no albumin, but sugar was present. On August 21 sugar had disappeared. On October 2 there was an eclamptic attack. Examination of the urine showed fifty grams of albumin to the liter. Within three weeks slight traces only could be detected. The writer believes that this condition was quite possibly due to the ingestion by the patient of a large quantity of hare. After eating this meat the patient was distressed with intestinal disturbances. The writer suggests that the eclampsia may have been caused by the retention of the toxins.—*Annales de Gynécologie et D'Obstétrique,* April, 1906.

Treatment of 216 Cases of Diphtheria at the Florence Hospital.—G. Barbensi and A. Barchielli report the treatment of 216 cases of diphtheria in three months at the Hospital in Florence. All were treated with a mixture of equal parts of the bivalent serum of Sclavo-Bandi and the antitoxic serum of Belfanti. The Sclavo-Bandi antibacteric serum was also used locally as an application to the throat and nasal mucous membrane, and to the larynx by the Bayeux syringe. There were 106 pharyngeal and 109 laryngeal cases, with a total mortality of 8.7 per cent. Thirty-five cases required either intubation or tracheotomy. The results, while excellent, are no better than under the use of the Behring serum.—*Revista di Clinica Pediatrica,* April, 1906.

Indications for the Removal of the Adnexa in Hysterectomy.—Giovanni Miranda, after considering the advantages to be derived from the conservation of the ovaries when the uterus is removed, and comparing them with the disadvantages, gives us the following conclusions: Such conservative surgery has only the appearance of conservation and has many disadvantages. Hysterectomy should be accomplished with the least danger to the patient and the greatest simplicity to the operator. The removal of an already diseased ovary makes the operation easier than its conservation. Therefore we should without regret sacrifice organs that present no utility when preserved. The disturbances due to removal of the ovaries seldom become at all alarming, and are not much more serious than those due to a normal climacteric. There is no real proof that there is any internal secretion of the ovary that is of value to the organism. Some of the dangers of the ovary when left behind are pelvic hemorrhage, degeneration of the ovary of a malignant nature, and formation of ovarian fibroids. In addition, the retained menstruation is often painful, and adhesions are also a frequent cause of suffering. On the whole, the disadvantages may be said to counterbalance the advantages, and removal is to be preferred.—*Archivio di Ostetricia e Ginecologia,* February, 1906.

Penetrating Wounds of the Gravid Uterus.—Giuseppe de Grecchio and Luca di Napoli have collected from literature 40 cases of wounds of the abdomen received during pregnancy, and to these add two cases of their own. They find that such wounds always result in interruption of the pregnancy. They have also made experiments on bitches, animals that are very tolerant of operations. These animals received wounds of various nature under aseptic precautions, and all recovered from them without any inflammation. In all these cases abortion took place soon after the wounds were received. The uteri of these animals, all of whom were afterward killed, showed healed wounds of the uterus, and the manner of healing seemed to present nothing abnormal. A large amount of amniotic fluid entered the peritoneal cavity in several instances and had no unfavorable effect on the healing of the wounds, causing no peritonitis.—*Giornale della Associazione Napoletana di Medici e Naturalisti,* January-February, 1906.

Book Reviews.

THE TREATMENT OF GONORRHEA IN THE MALE. By CHARLES LEEDHAM-GREEN, M.B., F.R.C.S., Senior Surgeon to Out-Patients, Queens Hospital, Birmingham; Surgeon to the Birmingham and Midlands Hospital for Children. New York: William Wood & Co., 1906.

THE author has presented the treatment of gonorrhea strictly from the modern viewpoint, especially as typified by the writings and teachings of Kollman, Oberlaender, Wossidlow, etc. This is, to our knowledge, the first attempt at a brief treatise on gonorrhea considered from this ultra-modern aspect. As may be expected, prominence is given to the treatment of acute urethritis with the newer silver salts, and of chronic urethritis by means of dilatation, copious irrigation, endoscopic applications, etc. The Janet method of irrigation does not find as much favor in the author's eyes as does Diday's method of irrigation with the aid of a catheter. Janet's method, however, is recommended in the more chronic forms. The author has evidently drawn freely upon the recent book of Oberlaender and Kollmann, "Die chronische Gonorrhoe der männlichen Harnröhre," and gives these authors due credit. The book is written in a clear, concise and systematic manner, and includes a brief consideration of the commoner complications of gonorrhea, with the exception of stricture and of conjunctivitis. The material entering into the make-up of the volume has evidently been thoroughly digested and presented with the conservatism which the treatment of such a subject as gonorrhea properly requires.

A TEXTBOOK ON PRESCRIPTION-WRITING AND PHARMACY, with Practice in Prescription-Writing, Laboratory Exercises in Pharmacy, and a Reference List of the Official Drugs, especially designed for Medical Students. By BERNARD FANTUS, M.D., Professor of Materia Medica and Therapeutics, College of Physicians and Surgeons of Chicago, the College of Medicine of the University of Illinois; also Professor of Materia Medica and Therapeutics, Jenner Medical College of Chicago. Second Edition, thoroughly revised and adapted to the eighth (1905) edition of the United States Pharmacopeia. Chicago: Chicago Medical Book Co., 1906.

THIS book represents an attempt to teach the medical student prescription writing and pharmacy. As such it forms a useful supplement to the average textbooks on materia medica and therapeutics. The author expressly states that he has no intention of making the student an expert apothecary; so there need be no fear on the part of the future physician that he will be called upon to learn anything unnecessary. The volume consists of three parts: the first deals with prescription writing, and contains chapters on the form and language of prescriptions, the determination of quantities, the composition of prescriptions, and prescription ethics. At the same time ample practice in prescription writing is furnished by the numerous problems inserted throughout the work. The second part takes up the subject of pharmacy, treated from the standpoint of the prescriber rather than the pharmacist. The laboratory work included in this part offers the student an opportunity to prepare a typical specimen of each of the important forms of medicine. The book concludes with a reference list, which furnishes in a concise form all the information required for the prescribing of the official drugs. In each case there will be found the Latin name of the drug, its pronunciation and its genitive, a brief description, the solubility and composition, the incompatibles, the uses, the dose and official preparations with their doses, and the most suitable form of administration. The volume is well printed, of handy size, and should prove of value to teachers, practioners, and students.

SAUNDERS' QUESTION COMPENDS. ESSENTIALS OF GENITO-URINARY AND VENEREAL DISEASES: arranged in the form of questions and answers, prepared especially for Students of Medicine. By STARLING S. WILCOX, M.D., Professor of Genitourinary Diseases and Syphilology, Starling Medical College, Columbus, Ohio; one time First Assistant Surgeon National Home for Disabled Volunteer Soldiers, Central Branch Hospital; and Contract Surgeon in the U. S. Army in the Philippines. Illustrated. Philadelphia and London: W. B. Saunders Company, 1906.

THIS little book will supply the medical student with all that he is likely to need on the subject of genitourinary and venereal diseases. The general plan of the work is similar to that of the other volumes of this series; and both questions and answers are simple, direct, and easily understood.

A MANUAL OF PHARMACOLOGY. By WALTER E. DIXON, M.A. (Cantab), M.D., B.S., B.Sc. (Lond.), D.P.H. (Camb.), etc. Assistant to the Downing Professor of Medicine in the University of Cambridge, etc. Illustrated. London: Edward Arnold; New York: Longmans, Green & Co., 1906.

THIS new book on pharmacology considers the action of drugs from the experimental viewpoint, although it does not profess to be strictly a laboratory handbook. The classification of drugs is the usual one, substances with a similar action being considered together. A feature of the book is its thoroughly modern makeup as attested by the inclusion of such substances as adrenalin and other animal extracts, antitoxins and the newer drugs, such as veronal. In treating of the action of salts, acids, alkalies, halogens, etc., the theory of *ions* which now plays such a prominent rôle in pharmacodynamics, is entered into at some length. But little attention is purposely paid to materia medica, although at the end of each chapter a list of the drugs considered, and their preparations, is given. For this reason the book can very readily be used by American students without the confusion which necessarily arises on this side of the water when reading of pharmaceutical preparations made up according to the British Pharmacopeia. All that is necessary to make the book available here, is to pay no attention to these lists of preparations at the end of each chapter.

Pharmacology is a science that stands midway between materia medica, the branch dealing with the material used in healing, and therapeutics, the art of applying this material in disease. Nothing of therapeutics will be found in Dixon's book, as he very properly confines himself to his own field, although in the selection of his subject-matter he is guided by the importance of the various drugs in the treatment of disease.

The book will undoubtedly prove useful to the student of drug-action who desires a thorough knowledge of the subject without wading through a great deal of cumbersome material.

THE TREATMENT OF SYPHILIS. By E. J. LAMBKIN, Lieut.-Col., R.A.M.C., Specialist at the Army Headquarters, India. London: Ballière, Tindall & Cox, 1905.

LAMBKIN'S little monograph deals with a form of treatment for syphilis by subcutaneous, intramuscular, etc., injections of metallic mercury in the form of a cream prepared with lanolin and oil. The prescription which Lambkin uses consists of one part of mercury, four parts of lanolin, and five parts of carbolized oil, the maximum dose being ten drops once a week. The author is an advocate of the insoluble compounds of mercury for injections, as contrasted with the soluble compounds which are nowadays preferred by the majority of syphilographers. The methods of administering mercury by the mouth, by inunctions, etc., are also mentioned briefly in the book, but the injections are given the preference by the author.

CLINICAL APPLIED ANATOMY, or The Anatomy of Medicine and Surgery. By CHARLES R. BOX, M.D., B.S., B.Sc. (Lond.), F.R.C.S. (Eng.), Physician to out-patients, St. Thomas's Hospital, and Assistant Physician to the London Fever Hospital, Lecturer on Applied Anatomy and Demonstrator of Morbid Anatomy, St. Thomas's Hospital; and W. MCADAM ECCLES, M.S. (Lond.), F.R.C.S. (Eng.), Assistant Surgeon, Joint Lecturer on Anatomy, and Demonstrator of Operative Surgery, St. Bartholomew's Hospital, Examiner in Anatomy for the Fellowship of the Royal College of Surgeons, England, and Examiner in Surgery for the Society of Apothecaries. Philadelphia: P. Blakiston's Son & Company, 1906.

THIS excellent work is one of the most practical and applicable to the needs of the medical practitioner or senior student which has yet appeared on the subject of applied anatomy. The plan pursued by the authors in this book has been to treat the subject entirely from a clinical point of view rather than that of the anatomist, with the result of making the work delightfully readable. Any author who can accomplish this with an anatomical subject, and without detracting from the technical value of his work, deserves and is bound to receive great credit, and this Doctor Box and Mr. Eccles have certainly accomplished in their book.

The opening chapters, on "Inflammation," "Tuberculosis and Syphilis," and "Specific Fevers," are typical in manner of handling of those which follow. The illustrations are fairly good. The diagrams, many of which are borrowed from standard works on anatomy, are instructive and clear. The practitioner in any branch of medicine will find in this work a valuable addition to his library.

NURSING IN THE ACUTE INFECTIOUS FEVERS. By GEORGE P. PAUL, M.D., Assistant Visiting Physician and Adjunct Radiographer to the Samaritan Hospital at Troy, New York. Illustrated. Philadelphia and London: W. B. Saunders Company, 1906.

THIS book is intended for the nurse and not for the practitioner; and is divided into three parts. The first part treats of fever in general, with chapters on hygiene, diet, alleviation of symptoms, and detection of complications. The second part discusses each of the acute infectious fevers as to their cause, signs and symptoms, course, prognosis, care, and management. The third part deals with practical procedures and information necessary to the management of these diseases.

Society Reports.

ASSOCIATION OF AMERICAN PHYSICIANS.

Annual Meeting, Held in Washington, May 15 and 16, 1906.

DR. FRANK BILLINGS OF CHICAGO IN THE CHAIR.

(Special Report to the MEDICAL RECORD.)

FIRST DAY—TUESDAY, MAY 15, 1906.

THE twenty-first annual meeting of this association was opened at the New Willard, Washington, D. C., by the president. A cablegram was read expressing greetings and best wishes from Prof. William Osler, formerly of Baltimore.

The President's Address.—Dr. FRANK BILLINGS of Chicago delivered this address, in which he asked that oral abstracts of papers be prepared beforehand to facilitate delivery, and that hereafter no paper be read in full before the Association.

Mechanism of the Blood Pressure Changes in Mitral Insufficiency.—Dr. W. J. MACCALLUM of Baltimore read this paper, which related entirely to experimental mitral insufficiency, leaving out any changes in the left ventricle. He considered the causes of hypertrophy of the right ventricle and told of the extensive amount of work involved in driving the blood along in this condition. The result of the experimental formation of mitral insufficiency with regard to blood pressure from various parts of the circulation was demonstrated. There was a stagnation of blood in the auricles and a greater or less amount of blood stagnant in the pulmonary circulation. He said that what Gerhardt had pointed out, that there was no great obstruction to the outflow of blood, was not true. In all cases of mitral insufficiency there was a constant stagnation of blood, or an overfilling at the end of systole in the pulmonary circulation.

Experiments on Venous Blood Pressure and Its Relation to Arterial Pressure in Man.—Dr. HENRY SEWELL of Denver said that the venous system was divided naturally into two departments, the superficial and the central. The veins of the first were peculiarly subjected to various forms of external stimuli, and they might be used to deduce conclusions as to the state of the circulation in all other parts of the vascular circuit. Of the internal veins those of the splanchnic system formed a homogeneous group which, from its great capacity and special relation to arterial blood pressure through the depressor nerve of the heart and the vasomotor center, made it necessary to consider the splanchnic circulation in every estimate of arterial blood pressure. He demonstrated his own blood pressure gauge from measurement of venous blood pressure. He said the blood pressure in the superficial veins depended upon the ratio of input to outflow, and that the former was greatly increased by muscular exercise and somewhat by heat. The latter was decreased by cold, causing contraction of the veins, and by obstruction to the entrance of blood into the heart. In some persons the venous pressure fell, in others arose, during digestion. The digestive rise in pressure was probably due to obstructive elevation of pressure in the right auricle. The movements of respiration, aside from their aspirating effect on the venous blood, had fundamental importance as an aid to the transfer of blood from arteries to veins. With deep inspiration the peripheral veins swelled and the pressure within them increased. This was often evident with ordinary inspiration, and could be demonstrated by means of a strip of paper, gummed on one side, and stuck by the side of a vein of the hand or forearm and resting across the vessel as a lever. It could be shown that both cardiac and respiratory variations of arterial blood pressure were frequently transmitted through the capillaries. He then considered the relation of venous to arterial pressure in diseased conditions, and told of the characteristically high venous pressure to be observed in gout and lithemia. He referred to the low venous pressure in arteriosclerosis or arterial spasm, and the rise of that pressure when cardiac circulation was impaired.

Rupture of Thoracic Aneurysm into the Superior Vena Cava.—Dr. W. HOWARD RUSSELL of Philadelphia reported the case of a man, 54 years old, a weaver, who was perfectly well until October 17 last, when he noticed a sudden swelling of face and arms, accompanied by cough and dyspnea which prevented him from lying down. He had no pain. Two days later he was admitted to St. Mary's Hospital. He then suffered from orthopnea, his face, both arms, neck, and upper chest were swollen to twice the natural size, were edematous, and markedly cyanosed. All the superficial veins were greatly enlarged. The superficial veins over the left abdominal wall were slightly increased in size. Hands, legs, and genitals were not swollen. The apex beat was difficult to palpate and was quite irregular. The sounds at the aortic cartilage were clear and the second was accentuated. There was a distinct "crunch" at the xyphoid. There were no murmurs in the vessels or at the root of the neck. There was marked dullness over the first piece of the sternum. There was no tracheal tug. An *x*-ray examination was negative. On October 25 the laryngeal examination showed venous engorgement of the mucous membrane but no signs of pressure. On October 31 the apex was far to the left of the nipple line and there were signs of pleural effusion in both chests and about one pint of liquid was removed from the right side. On November 12 there was marked distention of the abdominal veins. The patient suddenly died on November 27. At autopsy it was shown that at a distance of 5.5 cm. from the aortic ring there was a sacculated dilatation of the ascending part of the arch of the aorta, measuring 3.5 cm. in diameter. This sac, which protruded from the aorta on the right and slightly posterior, measured 3 cm. in depth and was narrower than the greatest diameter of the sac itself. The vena cava was constricted near the center where there was a small aperture about 3 cm. in diameter and with a smooth edge, so that there was a direct communication between the ascending aorta and the superior vena cava. The aneurysmal sac distended the aorta at the origin of the innominate but the aorta was apparently normal at the origin of the left carotid artery.

A Case of Varicose Aneurysm of the Aorta and Superior Vena Cava.—Dr. CHARLES CARY of Buffalo presented this paper, which was read by Dr. Williams. The patient, a man, was engaged in the hardest kind of labor, when he was suddenly seized with the classic symptoms of rupture of the aorta into the vena cava. Death followed on the fifth day. The patient was of the blue-black color. The aneurysm was about the size of a large fist. The superior vena cava was occluded, the intima of the two sides being adherent. Into the opening could be passed a No. 10 catheter; this passed into the aneurysmal sac.

Dr. JOHN H. MUSSER of Philadelphia presented a specimen of interest. An aneurysm had pressed upon the esophagus and the left bronchus resulting in the production of a fistula. The patient was 33 years old and had signs of an aneurysm to the right of the sternum, which gradually disappeared; with its disappearance pressure symptoms upon the esophagus developed. Death was sudden. The specimen was presented.

Dr. J. P. CROZIER GRIFFITH of Philadelphia also presented a specimen removed from a Chinaman, who had a condition like that described by Dr. Russell. It was an aneurysm of the superior vena cava and the two characteristic symptoms were the suddenness of the onset and characteristic continuous murmur.

Experimental Study of Cardiac Murmurs.—Drs. W. S. THAYER and W. G. MACCALLUM of Baltimore presented this communication, which consisted of some studies on the heart sounds and of cardiac murmurs, by direct auscultation, with a specially devised instrument, of the exposed dog's heart, with considerations concerning the application of the results obtained to the auscultation of the human heart. With the greatest ease a systolic murmur could be

produced by the slightest pressure upon the conus arteriosus; it gave the same soft blowing systolic sound in every instance. Nothing analogous to mitral stenosis in the human being could be produced, although a presystolic murmur that was analogous was produced in one instance. In conclusion he said that he was impressed with the great value this would have in teaching auscultation of the heart.

Dr. W. G. MacCallum of Baltimore explained the methods used. This, he said, was a part of the work they were doing in attempting to teach pathology and clinical medicine from the point of view of experimental pathology. He demonstrated by means of specially devised instruments how injuries to the heart valves were made.

Dr. E. G. Janeway of New York alluded to the different kinds of murmurs and said that on forced expiration instead of a soft blowing murmur there would often be heard a harsh one, and with a thrill. These murmurs were often mistaken for organic disease. He had seen two such cases in one family. He thought they were due to pressure caused by forced expiration, the pressure being upon the pulmonary artery.

Dr. Henry Sewell of Denver said that the use of salt solution caused relatively more cases of high venous than arterial pressure, the increase being from behind from the venous side and being due to diastolic intracardial blood pressure and not to a systolic intracardial blood pressure.

Dr. L. F. Barker of Baltimore said that the pathological physiology that was now being developed would do more good than pathological anatomy, and he hoped that more work of this sort might be undertaken.

Dr. S. J. Meltzer of New York said that the lung of the animal should be blown up and the trachea clamped while the lung was distended in order properly to recognize the cardiorespiratory murmurs.

Intravenous Injections of Nicotine, With Special Reference to Experimental Arteriosclerosis.—Dr. I. Adler and Dr. O. Hensel of New York presented this report. Intravenous injections of pure nicotine produced lesions in the aorta of rabbits almost identical with those caused by adrenalin and digitalis. The speaker entered upon a brief discussion of these results, especially as to their bearing upon the pathology of human arteriosclerosis. In every instance violent convulsions followed the injections and they were not able to find that tolerance would be produced, even though in some instances over 100 injections were given. The convulsions did not seem to affect the health of the animals. Characteristic lesions were usually found after eighteen injections had been given, yet one rabbit received seventy-seven without showing the slightest signs of any affection of the aorta. These lesions were similar to those found after giving adrenalin and the effect seemed to be upon the muscle cells of the media. The longitudinal layers were never affected; only the circular ones. The place of the muscle cells was taken up by calcareous deposits. Two types of degeneration were noted, viz., a diffuse type in which a large portion of the walls of the vessel were affected with deposits of calcareous matter, and, secondly, that type in which only small patches were affected and deposits of calcareous matter noted. Microphotographs were shown. He said it had frequently been stated by those who worked with adrenalin that the process was comparable to the process found in atheroma. He said that primarily in arteriosclerosis there was a degenerative process in the depths of the vessel wall, the exact location of which had not yet been determined, but it probably was in the intima.

Clinical Observations on Arteriosclerosis from Alimentary Toxins.—Dr. C. S. Bond of Richmond, Ind., read a paper giving twenty years' observation among private patients with arteriosclerosis from alimentary toxins. In these patients all other possible causes, such as senility, lead poisoning, alcohol, and syphilis, were excluded.

Dr. Joseph L. Miller of Chicago referred to some interesting work done a year ago by an Italian experimenter, who produced arterial changes by giving rabbits solutions of tobacco by the mouth through a stomach tube. After three or four weeks he found the same changes as described by Dr. Adler. It seemed to him that evidence so far produced pointed rather more to toxic than to the high pressure element as producing these changes. The changes were in the intima and not in the media.

Dr. Joseph Collins of New York called attention to the experimental work that had been done by Dr. Harlow Brooks and himself during the past two years, producing certain changes by causing the animal to inhale tobacco smoke. A large number of rabbits were taken and kept for fifteen minutes in a chamber in which tobacco was burning. They showed no toxic manifestations, convulsions, or other symptoms as described. There was no initial rise of blood pressure.

Dr. H. A. Hare of Philadelphia said that the action of the nicotine was very fleeting in his experience, so much so that one would hardly expect this agent to affect the aorta.

Report of Cases of Tricuspid Insufficiency in the Course of Pernicious Anemia.—Dr. Robert B. Preble of Chicago made a brief report of cases of pernicious anemia, with insufficiency of the tricuspid valves, pointing out certain features in which these cases of insufficiency differed from those resulting from commoner causes. Insufficiency on the right side was far more common than generally supposed.

Typhoid Spine with Definite Deposits of Bone along the Vertebræ; Relations of the Whole Group of Infections to the Production of Spondylitis.—Dr. Thomas McCrae of Baltimore read this paper. The first case reported was that of a patient with typhoid fever, and the usual clinical features of typhoid spine. Definite bony changes were found in the vertebræ. In a second patient, with a paratyphoid infection, the same changes resulted, although a previous gonococcus infection might have played a part in their production. The relation of various infections of an acute nature to changes in the vertebræ were considered and their possible association with the lesion of osteoarthritis was discussed.

Dr. James B. Herrick of Chicago told of one case in which there was nothing in the general behavior of the patient to make one think of such a condition being present. In a second case the patient had convulsions, the pain was localized, and the swelling could be distinctly made out. The process was definitely an organic one, but he did not know what parts were involved.

Dr. W. S. Thayer of Baltimore spoke of the curiously indifferent nature of the pain the patients complained of.

Dr. Joseph Collins of New York spoke of the relation of gonorrheal spondylitis to the general subject of spondylitis. He said that he recently had a case that had been diagnosed as Marie's *spondylose rhizomyélique*. The patient had had a stiff spine for three years and was practically cured by Dr. Eugene Fuller, by splitting the seminal vesicles and employing drainage.

Dr. James Tyson of Philadelphia told of a case of spondylitis affecting the cervical region in which the *x*-ray showed organic deposits.

Dr. John K. Mitchell of Philadelphia said that such cases of spondylitis might be so slight as not to be discovered until after months, and he reported one case in which it was only after months of careful study and examination that he could account for the truly extraordinary amount of pain complained of throughout the whole back and one side. He then got a history of an injury to the back by a wrench and the pain was relieved only by the removal of two or three fragments from the lateral vertebral processes of one of the lower middle vertebræ.

Dr. S. Solis-Cohen of Philadelphia believed that when such intense pain in typhoid fever was complained of there was something more than a spondylitis.

Dr. Thomas McCrae of Baltimore said that the term typhoid spine should be applied to something that was definite and not to all cases in which pain occurred during the course of typhoid fever. There seemed to be no asso-

ciation between the amount of pain and the amount of change.

Perinephritis as a Cause of Symptoms Simulating Stone in the Kidney.— Dr. James Tyson of Philadelphia gave his experience with a number of cases simulating nephrolithiasis, in which operation failed to discover stone in the kidney or adjacent tracts; this led him to look for other possible causal conditions, and this resulted in the discovery that certain of these cases were associated with tough adhesions of the perirenal fat and capsule and sometimes with the substance of the organ and with cicatricial like markings on the capsule, which might be the results of inflammation which for convenience was named perinephritis. The paper, he said, was suggested by a discussion on a like subject at the meeting of the Association of Physicians in 1905, in which Dr. Forchheimer reported similar experiences. By perinephritis Dr. Tyson meant an inflammation of the capsule and other tissues surrounding the kidney of such a nature as to produce contraction or cicatricial markings in the capsule, whence also the cortex of the kidney might be more or less invaded. The term "perinephritis" was not new, but was used by Rayer in his book on Diseases of the Kidneys, published in 1839. He applied the term to an allied condition including suppurative processes. Three cases were reported in this paper which went to justify the conclusions reached.

Disseminated Sclerosis: An Inquiry into its Alleged Infrequency in this Country, and Its Clinical Manifestations.—Dr. Joseph Collins of New York said that the belief that this disease was of extreme infrequency in this country was unjustified. It had been diagnosed eighty times in the examination of 10,000 cases of nervous diseases, functional and organic. Some of these had been verified by autopsy. Many others, atypical in the beginning, had become most typical while under observation.

Dr. B. Sachs of New York said that during the past two years he had had the opportunity of studying 220 cases of organic nervous disease, and of these there were 15 cases in which a diagnosis of disseminated insular sclerosis was made without a doubt and five in which it was doubtful. In a certain proportion of cases this diagnosis may be made with absolute certainty. There was some difficulty in discriminating between syphilis of the spinal cord and disseminated sclerosis. He thought that absence of abdominal reflexes was so common in cases in which the deep reflexes were exaggerated that one should not attach great importance to it as a diagnostic feature.

Mental Disorders Associated with Acute Chorea.— Dr. B. Sachs of New York said that, while recognizing the existence of a form known as chorea insaniens, a number of clinical experiences would be reported showing the varying character of mental disturbances associated with acute chorea, and proving the simultaneous development of mental and choreic disturbances in the course of, and following upon, toxic and infectious processes. Fatal cases of acute chorea, he said, were at times associated with marked acute endocarditis, with some rheumatic involvement. The name chorea implied a generic group of cases and might be the expression of a general septic or toxic condition.

On Recurrent Acute Pulmonary Edema.—Dr. David Riesman of Philadelphia said that the principal forms of edema described in text-books were (*a*) the acute inflammatory edema accompanying lobar pneumonia and other acute inflammations of the lungs and (*b*) a passive edema occurring usually as a terminal condition in heart disease, Bright's disease, and at times in pneumonia. There were, however, several other forms which, though rare, were nevertheless of much clinical interest. He called attention to the edema that recurred from time to time, and in each attack seemed to place the patient in imminent danger of dissolution. The onset was acute. The lungs and air passages rapidly filled up with fluid, which gushed from the mouth and nose. The fluid was serous, frothy, sometimes blood-tinged, so as to resemble raspberry vinegar. The dyspnea was intense and the patient was ashen pale or deeply cyanosed, and gasping for breath. Over the chest the characteristic râles of edema were to be heard. The pulse was full and bounding, or imperceptible at the wrist. At the height of the attack, the patient appeared to be at the point of suffocation. Like angina pectoris, the first attack of such an acute edema might kill, but more often the condition recurred. Acute pulmonary edema of this type had been met with by Dr. Riesman in association with (*a*) chronic interstitial nephritis, (*b*) arteriosclerosis, (*c*) angina pectoris, and (*d*) asthma. A peculiar edema that in the acuteness of its onset and the gravity of its symptoms resembled the one under consideration, was that sometimes following paracentesis thoracis, of which, under the head of albûminous expectoration, he had recorded an example. The pathogenesis was obscure. In some there was a derangement of the vasomotor mechanism through toxins, while in others there was a sudden weakening of the left ventricle. When there was much cyanosis and a high tension pulse venesection was employed. Dry cupping, atropine, diffusible stimulants, treatment of the underlying conditions during the intervals between attacks, etc., might be resorted to.

Dr. Francis B. Kinnicutt of New York said that the pathogenesis of this condition was certainly a varied one, and his conception of the sudden pulmonary edema occurring in arteriosclerosis was different from that described. In cases of arteriosclerosis there was a condition of hypertonicity of these vessels, and when sudden pulmonary edema appeared there must be some impairment in the integrity of the myocardium. There might be some vasomotor spasm, but not a paralysis. There was a rapid and sudden dilatation of the left ventricle.

Dr. E. G. Janeway of New York said that there were other eliminants than the serum which was going into the pulmonic area in these cases.

Dr. Shattuck of Boston reported a case of pulmonary edema of large extent which rapidly cleared up under the use of nitroglycerin.

Dr. Francis B. Kinnicutt asked if any present had used adrenalin in cases of pulmonary edema, and he reported a case in which the condition cleared up remarkably under its use.

Dr. S. J. Meltzer of New York said it was dangerous to use adrenalin in pulmonary edema.

Dr. Forchheimer of Cincinnati had had the same results with adrenalin as Dr. Kinnicutt had.

Dr. Joseph L. Miller of Chicago said that it was a common experience when working with animals to have them die suddenly from pulmonary edema when adrenalin was used.

Dr. W. S. Thayer of Baltimore said that in giving adrenalin to animals the blood pressure in the greater circulation arose enormously while that in the lesser rose but very little if at all.

Dr. S. Solis-Cohen of Philadelphia said that adrenalin applied locally was good in the treatment of vasomotor edema of the larynx; but on the other hand he had seen edema of the larynx caused by the incautious use of adrenalin applied in this way.

Dr. Richard C. Cabot of Boston said that the trouble with therapeutics to-day was that we did not treat patients without drugs in order to give a basis for observation. The last case of pulmonary edema he saw recovered without any treatment whatever.

Dr. W. G. MacCallum of Baltimore said that with a cannula in the pulmonary vein the injection of various drugs into the circulation did not affect either the pulmonary pulsation or pressure, and possibly the effect of adrenalin was in stirring up the left ventricle, thus pumping away from the lungs the stagnant blood.

The President said that the cases of pulmonary edema that he had seen certainly stirred one's blood because of the intense suffering shown, fluid flowing from mouth and nose. In one case the patient was not breath-

ing rapidly, but was covered with cold sweat, and the urine was passing in large amounts. The remedy that gave him the best results was morphine used in connection with nitroglycerin. One patient had five attacks, and strychnine and digitalis were used without any effect, but a dose of morphine and then nitroglycerin acted promptly for the better. He reported two other cases that recovered rapidly under the same treatment.

Dr. Babcock of Chicago asked if any had used atropine in these cases. He recalled a case of acute pulmonary edema in which 1-50th of a grain of atropine was followed by rapid recovery.

Dr. John H. Musser of Philadelphia called attention to the element of shock in those cases in which there was pallor, sweating, and other symptoms of shock. Morphine in such cases was of great value. He also relied upon nitroglycerin. One should be careful to make the differential diagnosis between this condition and dilatation of the heart, because the treatment of each was diametrically opposed.

Dr. James Tyson of Philadelphia said he never wanted a more satisfactory remedy than atropine in cases of acute pulmonary edema.

Dr. William H. Thompson of New York said that he had received letters from Adami and Osler in which they stated that the pathogenesis of edema or stagnation of the circulation was unknown.

Dr. H. A. Hare of Philadelphia said that one should bear in mind the fact that pulmonary edema was not an entity and that when there was high arterial tension adrenalin would do harm, and that it would do good if there was a low arterial tension.

(To be continued.)

THE AMERICAN THERAPEUTIC SOCIETY.

Seventh Annual Meeting, Held in New York, May 3, 4, and 5, 1906.

Carl Beck, M.D., President, in the Chair.

(Special Report to the Medical Record.)

FIRST DAY—THURSDAY, MAY 3.

Presidential Address.—Dr. Carl Beck of New York took "Gallstone Disease" as the subject of his presidential address. He thought it unfortunate that some well-known surgeons were at present making the attempt to draw analogous lines between appendicitis and cholelithiasis; for appendix and gall-bladder, in the anatomical, physiological, and clinical sense, were two entirely different organs. In cholelithiasis the essential feature was a foreign body, the stone, and this was not the case in appendicitis. Such conditions as cause a stagnation of bile favored the formation of gallstones, and the bacterium was now acknowledged to play a leading part in such formation. There must, however, be a third agent, not yet definitely known, which, acting in conjunction with the other two factors, favored the process. It seemed to him that tissue changes must be prominent in this action, and that this point ought to be determined in the laboratory. Especially did the matter of hereditary predisposition speak for such an assumption. If we summed up the main etiological factors, we found that in general the gall-bladder was the shop for the manufacture of gallstones, not merely a receptacle, as in the case of the urinary bladder. To Naunyn was due the credit of establishing the differentiation between a regular and an irregular cholelithiasis. He had classified the first as among those processes which do not complicate themselves with noteworthy signs of inflammation, while he regarded the irregular cholelithiasis as a condition manifesting itself by the additional appearance of inflammatory signs. The recognition of these two distinct forms, Dr. Beck thought, afforded the solution to the question as to whether in any given case medical or surgical therapy was to be employed. He then considered briefly the medical and dietetic treatment, and, having remarked that the surgery of the bile passages had existed only since the genius of Langenbeck, in 1882, found the means of removing the stone-bearing gall-bladder, took up some points of technique in the operations performed for the relief of cholelithiasis. Later he stated that in a large number of gallstone operations performed in hospital and private practice, he himself had only exceptionally found it necessary to extirpate the bladder, and that while some surgeons now recommended ectomy as the normal procedure in cholelithiasis, he was unable to see, in the majority of instances, the reasons for so radical a measure.

Sarcoma of the Orbit and Temporal Region Successfully Treated by a Combination of Operation and X-Rays.—Dr. Carl Beck presented a patient, the wife of a physician, whom he had brought before the Society three years ago. The sarcoma from which she suffered had been treated by a combination of operation and *x*-rays, and he had been astonished at the result. The eyeball had been enucleated by Dr. Roosa, and soon afterward a large tumor appeared, extending over the temporal region. This was operated upon by Dr. Beck more than four years ago, and then treated, somewhat timidly, he had to confess, with the *x*-rays. Three months afterward there was a recurrence, and now the *x*-rays were administered more powerfully and at shorter intervals, producing a burn of the third degree. After this the whole sarcomatous growth disappeared, and it had never again recurred. The patient had had *x*-ray treatment from time to time, and at present she was suffering from a small burn resulting from it, which was gradually healing. The sarcoma now appeared to be cured, and the general health of the patient was very good. Dr. Beck said that from a scientific point of view this seemed to be very satisfactory, but he thought it necessary to add a word of warning—not to generalize from this case. He certainly did not feel justified in claiming that the *x*-ray was a cure for sarcoma. Unfortunately, there were many cases of the disease in which this agent had no effect whatever. The employment of the *x*-ray here was merely empirical.

Therapeutic Effect of Sound Waves, or Mechanotherapeutics of the Ear.—Dr. C. J. Blake of Boston read this paper. His object, he said, was to show that the application to the organ of hearing of that mode of motion which it is especially constructed to transmit, and to perceive, of course, justifiably, under the head of mechanotherapeutics, and that this claim was demonstrably determinable. In the course of his remarks he stated that, in view of the fact that a secondary muscular contraction is best overcome by prolonged and gentle traction in the opposite direction, the desired release could be best effected, through utilization of absorption of air by the skin, by stopping the external auditory canal by means of a cotton and waxen plug, after the method of Politzer. If at the time when the case came under observation the posterior segment of the drum-head had already become relaxed, the stretched portion might, advisedly, be reinforced by the application of collodion before the plugging process was resorted to, and in all cases it was well to supplement the grosser mechanical treatment by the motive application of sound waves. This might be done by means of various sound sources, but most conveniently by means of the human voice concentrated upon the ear through the medium of a speaking tube; a convenient instrument being the ordinary paper mailing-tube, two inches in diameter, its lumen partly closed, midway of its length, by a ball of loosely rolled wool, serving to decrease the resonance of the tube in its reinforcement of the sharp upper tones of the voice. Dr. Blake's conclusions were: That application of sound waves to the ear for therapeutic purposes is the application of a form of massage commensurably proportionate to the delicacy of the sound-transmitting structures of the middle ear and labyrinth; that the prolonged use of tones of excessive amplitude and very low or very high pitch, whatever their beneficial mobilizing effect upon the

sound-transmitting apparatus of the middle ear may be, is open to the objection of their prejudicial effect upon the organ of perception; that mechanical reproductions of speech are open to the objection of their accentuation of over-tones and their presentation of a distortion of a familiar sound picture, that of the normal voice; that the natural voice, concentrated upon the ear, is, both in its range and its volume, as well as in the more general exercise afforded by its complexly compounded sound waves and the readiness with which it may be uniformly applied, the safest and, in the end, the best, form of sound source for phonomassage of the ear.

The Underlying Principles of Tuberculin Therapy.—Dr. F. M. Pottinger of Monrovia, California, read this paper. Tuberculin, he said, had now been subjected to the test of time. It had been in continuous use for fifteen years. It had been employed in many experiments upon animals, and its virtues had been tested on human beings. In spite of this laboratory and clinical experience there seemed to be a very hazy idea as to what tuberculin is, how it acts, and what it is expected to do. The speaker discussed, first, nature's method of cure in specific diseases, as it appeared in the light of recent researches; second, conditions which militate against tuberculosis curing itself, and, third, the manner in which specific inoculations with tuberculin aid in the cure of tuberculosis. Nature's method of cure consisted in the production by the organism of defensive bodies in response to stimulation from toxins engendered by the specific microbe causing the disease. In tuberculosis, owing to the character of both the bacillus and the tubercle, this specific toxin failed to gain access to the blood in proper quantities, and at the proper intervals, to be effective. It was plain, therefore, that here there was a failure on the part of nature to bring about a cure. In this connection it was well to remember, however, that too great stimulation was harmful, and would defeat nature's purpose, just the same as a failure of stimulation. That in tuberculosis the blood was deficient in protective substances was shown by the measurement of its opsonic power. This, as a rule, was below the normal standard. That the opsonic index in patients with tuberculosis can be raised by the injection of tuberculin had been established by Lawson and Stewart, Wright, Bullock, and others. Their observations were in harmony with those of Koch, Moeller, and others in regard to the increase of the agglutinating power of the blood after the administration of tuberculin. This increase in the agglutinating and opsonic power of the blood meant that the natural defenses of the organism had been increased. The opsonic power was that power of the blood serum which prepared the bacilli to be destroyed by the leucocytes. In an instructive series of cases tabulated by Lawson and Stewart the leucocytes of patients treated by ordinary sanatorium methods were able to destroy only 75 per cent. of the number of tubercle bacilli that a normal person's blood should destroy; while the leucocytes of the same patients, after treatment by tuberculin, were able to destroy 19 per cent. more than the leucocytes of a normal individual. The value of this increase in the natural defenses of the organism was evident. The one reason why tuberculosis killed was because of its tendency to spread to new tissues, either adjacent or distant, and it had long been claimed by those familiar with tuberculin therapy that the disease shows much less tendency to spread in those cases treated with tuberculin than in those treated by ordinary methods. In the light of these new discoveries in immunity and immunizing treatment the beneficial effect of tuberculin was readily explained. This immunizing action of tuberculin was not, however, its only method of aiding in bringing about a cure. Tuberculous areas were naturally very slow in healing. Tuberculin, when administered in proper doses and at proper intervals, furnished a stimulation for these areas which hastened healing by stimulating the formation of fibroid tissue. Theoretically, then, tuberculin had a firm foundation on which to stand.

Turning now to its clinical workings, Dr. Pottinger found that these confirmed the theory. The real test of tuberculin, he said, was in pure tuberculosis. After destruction of tissue had taken place, after other organisms had entered the field, after the general constitution had become undermined, after consumption had supervened, then we should not demand a cure by tuberculin. Nothing short of the elixir of life would be a specific for such a condition. While he believed that tuberculin was of great value in chronic non-febrile cases of tuberculosis, yet it was in early cases that we should expect the most brilliant results. In a former paper he had collected data of 1,200 first-stage cases of tuberculosis. Of these, 611 were treated in sanatoria, with ordinary open-air treatment, with a result of 391, or 64 per cent., being apparently cured. Five hundred and eighty-nine, most of whom were treated outside of sanatoria, were treated with tuberculin, with a result of 496, or 84.2 per cent., being apparently cured. This showed 20.2 per cent. more apparent cures with the tuberculin than without. Another test of the value of tuberculin was the permanency of results. Although the comparative results of very few observers had been recorded, the general experience was in accord with that of Trudeau and Turban, and it was generally accepted that cases treated by it showed less tendency to relapse. In harmony with this was the observation of Bulloch upon the opsonic condition of patients who had been treated for tuberculosis. He examined the blood of fourteen well-to-do patients who had undergone sanatorium treatment with so-called satisfactory results. In every case but one the opsonic index was low. In at least one, which was called a perfect cure, the disease had relapsed within a year. This was also in harmony with the experience of Spengles, who stated that a patient whose agglutinating power is low stands a much greater risk of relapse than one whose agglutinating power is high. Another clinical proof of the value of tuberculin was its action upon local visible tuberculosis, such as is found in the larynx. Most observers were of the opinion that tuberculous laryngitis is almost absolutely fatal. Such a prognosis was not justifiable if the disease were treated in the proper way. Here no remedy offered so much hope as tuberculin. The dosage could be absolutely controlled, and with patience and perseverance a cure could be obtained in a large percentage of cases, even after ulceration had occurred; although the lesser infiltrations were easier to treat and offered better chances of a cure. Among fifteen cases recently reported by the speaker to the National Association for the Study and Prevention of Tuberculosis, the lesions healed, so that there was no further reaction to tuberculin, in eleven instances. These results were not obtained quickly, the treatment extending over several months, and in one or two instances over many months. Having quoted some results by other observers, he went on to say that recent reports from Wright and Bullock showed that tuberculin could be used to advantage also in other forms of tuberculosis, such as ulcerations of the subcutaneous tissue and bone, invasion of the lymph glands, and infections of the genitourinary system. With the mass of evidence before us, he said in conclusion, we must admit that tuberculin therapy was in accord with the modern ideas of immunity, that theoretically tuberculin was capable of increasing the natural defenses of the organism, when given in the proper manner, and that clinical experience warranted a more general use of it in combating tuberculous infection.

The Therapeutic Value of Ergot.—Dr. O. T. Osborne of New Haven, Conn., read this paper. He regarded the fluid extract as by far the most efficient preparation of the drug, and recommended its hypodermatic use in the majority of instances. He advocated the administration of ergot in a considerably larger number of affections than it is commonly employed for. He had found it especially serviceable in hysterical conditions and in diabetes insipidus. He believed it to be useful also in cerebrospinal men-

ingitis and in overcoming the intestinal paralysis often resulting from abdominal operations in which there is much handling of the bowels. He furthermore expressed the opinion that ergot has a distinct effect in intensifying the action of morphine.

The Medical Treatment of Gallstone Disease.—Dr. R. W. Wilcox of New York read this paper. He said that, voluminous as was now the surgical literature upon the subject of gallstones, a careful consideration of the matter led him to place surgery as adapted only to stones of gall-bladder origin, and then only under conditions demanding mechanical relief. The field of surgery here was very limited, though surgery was of great importance when indicated. In other words, the treatment of gallstone disease was practically entirely medical, while that of gallstones themselves was generally surgical. If this distinction were kept clearly in mind, more would be expected of the internalist, and fewer disappointments laid at the door of the surgeon. Gallstones were either hepatic in source or were formed in the gall-bladder; the former being by far the most common. Having referred to the microbic origin of gallstones, he said that the treatment of microbic causes of the stones was the treatment of the infection itself, and the limitation of the opportunities for entrance of the infectious agent. He then spoke of the mechanical causes. Among these was chronic venous congestion of the portal system, the great underlying cause of the gallstone disease. As to extraneous causes, anything which reduced the vitality of the individual was predisposing. Stating that the causes thus far mentioned called for treatment which was chiefly prophylactic and practically medical, he referred next to some of the results of gallstone disease, such as diabetes, pancreatitis, and the so-called intermittent hepatic fever. In regard to surgical procedures it was to be borne in mind that the diagnosis must be established by the physician and that the surgeon should be held responsible only for the relief of mechanical conditions. As to medical treatment in general, the Spa treatment appealed to many. Success was based upon the fact that there the patients' diet and habits of life were regulated and the salines diminished congestions and inflammations in the portal area. Equally good results, he thought, could be obtained at home. Exercise in the open air and a properly regulated diet were very important. As to medicines, salicylic acid was an excellent cholagogue and phenolphthalein a safe and prompt curative, whose antiseptic effects were prolonged through the whole length of the alimentary tract. The following combination pill Dr. Wilcox found most serviceable, increasing peristalsis, allaying nausea, and acting as a carminative as well as an intestinal antiseptic: Salicylic acid and acid oleate of sodium, each 1½ grains; phenolphthalein, 1 grain; menthol, ¼ grain. Four to eight pills were given in a full glass of hot water once or twice daily. The salicylic acid should be obtained from natural sources, and the acid oleate of sodium carefully prepared. The latter, like salicylic acid, was excreted by the epithelium of the bile ducts to assist in disinfection. Both bile as a whole and its salts were uncertain in action. Sodium glycocholate was the best of the salts. Having given the details of two illustrative cases, he said that the conclusion we should reach was that gallstone disease is not purely a disease due to a foreign body, but is primarily a hepatic disorder. The removal of these stones had but little to do with the cure of the patient, for when the end result, the removal of the gallstones, had been accomplished by the surgeon, the patient was but at the commencement of his treatment to remove the cause of the disease, which was entirely within the province of the physician. It was the congestions and inflammation in the domain of the portal system, the infectious catarrhs of the bile ducts and bladder, and the faulty bile formation in the liver, that required attention, and the problems thus presented were purely medical. The elimination of gallstones of the hepatic variety was generally rapid. That they might be painless was best accomplished by the administration of amyl valerate, 15 minims in capsule, two hours before breakfast and after supper.

Duties and Responsibilities of Medical Practitioners in Their Relation to the Border-Line Diseases.—Dr. T. E. Satterthwaite of New York read this paper. He thought it very unfortunate that the text-books of medicine paid so little attention to the management of diseases on the border-line between medicine and surgery. It was quite exceptional to find such affections considered in a judicial way from the dual standpoint of the physician and the surgeon. For example, in one of the most recent works on practice appendicitis was regarded as so preeminently a surgical disease that it was held to be proper for the physician, immediately on the recognition of this trouble, to turn the patient over to the surgeon. It was stated that there was no medical treatment for appendicitis, the author entirely overlooking the fact that medical treatment is by no means synonymous with medicinal treatment. Such an attitude placed the physician in a false position, where he not only jeopardized the prospects of his patient, but rendered himself liable to adverse criticism. The same criticism might be directed against the medical practitioner when he was called upon for a professional opinion in the treatment of the twenty and more other diseases on the border-line between medicine and surgery. In all these there were times when the physician might very properly ask himself the question, Is this an operative or a non-operative case? The affections referred to were abdominal and pelvic tumors, cirrhosis of the liver, pancreatic diseases, morbid collections in the kidney, chronic Bright's disease, cholelithiasis, intestinal hemorrhages, obstruction or traumatism, enlarged prostate, pleurisy or pericarditis with effusion, acute or chronic mastoid disease, diseases of the accessory sinuses, malignant tumors in general, epilepsy, hemorrhoids, and even habitual constipation. The present relation between medicine and surgery made it obligatory on the part of the conscientious practitioner to keep himself thoroughly informed as to the comparative advantages of all the methods of treatment in vogue, not only as applicable to any given case, but to the various phases of it; so that he might be prepared at all times to give his patients the benefit of that treatment which presented the best possible prospect of relief. To this end he should be familiar with all the latest improvements in the treatment of disease, whether they were medical, surgical, mechanical, hydriatic, dietetic, or even psychic; and particularly should he be able to form and give intelligent opinions as to the question of operative or non-operative measures in any of the affections mentioned. The physician would thus be prepared to enter the consulting room armed with definite data, from which to draw intelligent conclusions, perhaps in the light of other facts elicited by the surgeon or brought to his notice by the patient or his friends. The average physician undoubtedly excelled the average surgeon in diagnostic ability, and surgeons were now disposed to admit that their increasing success was chiefly dependent on closer attention to diagnosis, including not only a more thorough study of their patients' histories and symptoms, but also the use of aids the physicians more especially recognized, such as pathological and laboratory teachings and the newer methods of physical examination. Of course, such surgical success was to some extent attributable to improvements in technique, but this was only a minor element in the result. If, therefore, the physician excelled the surgeon in the matter of diagnosis, what could conduce more to the successful issue of a case than that each should contribute his quantum of information and experience in these border-line diseases? Under certain circumstances a surgeon might urgently need both the counsel and the cooperation of the physician. If, for example, the chances of life were going to be slightly improved by an operation, but the surgeon hesitated, perhaps because his personal experience had been unfortunate in this particular line of affections and he dreaded the idea of adding another to his list of failures, it would then become the imperative duty

of the physician to urge the operation, as holding out the best prospects for a successful issue. The speaker said that while he was perfectly willing to admit that in appendicitis the surgical operation had saved many lives which would have been lost under non-operative treatment, this was very far from saying that all cases of the disease should go to the surgeon. He then discussed very fully the indications calling for operative interference in appendicitis and the circumstances in which this should be withheld. Having paid considerable attention also to pyelitis and peritonitis, he went on to say that in nearly all the border-line affections he had enumerated (the exceptions being possibly diseases of the pancreas and certainly pyothorax and certain suppurative diseases of the abdominal cavity, such as of the liver and spleen), nonoperative treatment, and certainly prophylaxis, on the part of the medical attendant, was of recognized utility. His contention in this paper, however, was this: In all the affections referred to he would have the physician fully informed as to the best methods of treatment, whether medical or surgical, the proper time to call for surgical advice, and the chances of the patient's recovery under surgical, as against medical, treatment. More than this, he would have the physician qualify himself to make the diagnosis in all these cases, and be ready to sustain the surgeon should an operation be deemed advisable. Finally, he would urge that future text-books of medicine should contain not only the latest diagnostic data in these border-line diseases, but the most recent statistics of successful treatment, whether by medical, surgical, or any other means.

(*To be continued.*)

SOCIETY OF MEDICAL JURISPRUDENCE.

196th Regular Meeting, Held at the Academy of Medicine, New York City, March 12, 1906.

The President, Dr. Carl Beck, in the Chair.

Medicine and Law in Relation to the Alcohol, Venereal Disease, and Tuberculosis Problems.—Dr. S. A. Knopf read this paper (see page 857).

Mr. Robert Hunter said that it was interesting to note a physician becoming a sociologist, as Dr. Knopf evidently had, but he could not say that he, Mr. Hunter, a sociologist, would ever become a physician, although he might end as one. It was difficult to discover any reform for the many difficulties which were shown to exist by Dr. Knopf, who took only a small part of the social problem, and it showed the necessity of immediately getting at the questions which all physicians met with. He supposed that all physicians took a broad view of the problems; if they did they would all in the end become sociologists. Mr. Hunter said that it seemed to him that the problem of drink, although statistics might be against him on this point, never seemed so bad in this country as in others. For instance, in England, Liverpool, etc., hopeless drunkards were met with, and, in this country, we were relatively free from that evil. In Russia, especially in Moscow, one saw thousands of men in the great public squares drunk; the same condition was met with in various other cities of Russia where it was less serious than in some other countries. However that might be, there was no reason why some of the remedies Dr. Knopf had spoken of should not be applied in this country. The work of saving ourselves or the people from becoming so degraded, utterly and hopelessly degraded, as they were found in some other cities, should be continued. The economic laws are forced upon settlement workers among the poor more powerfully than upon anyone else, except, possibly, the physicians. The misery and wretchedness met with had caused the sociologist to take a deeper interest in the medical side of the question, to see if preventative measures could not be effective in stamping out these evils. But so many economic laws were involved with so many other things that he wondered if it was possible to make any definite generalizations upon the matter. For instance, after ten or twelve years' study, he said he could not tell just how much drink was responsible for poverty, or poverty responsible for drink. Starting with the feeling that most poverty was due to drink, he had come at last to the conclusion that poverty itself produced drunkenness. For instance, he had known many cases in which men had not been drinkers until they had suffered some financial loss; when they had heard their children crying for bread they had gone out and gotten drunk. Some drank themselves into insensibility; some, when they became discouraged with life, went down quickly. He had seen these cases so often that he now believed that the influence of drink in producing poverty had been overestimated. The same thing he believed to be true with regard to tuberculosis. Unquestionably there were many men brought to poverty through tuberculosis. Tuberculosis was a long disease. When a man acquired tuberculosis he went home sick, and his illness continued over a period of one or two years. During this time his wages were cut off and he came to poverty. On the other hand there were many people who lived in poverty and who acquired tuberculosis; here it was not the cause, but the result of poverty. Our biggest death rate was from tuberculosis among the very poor. When one went up the social scale the death rate from tuberculosis declined. This was true also of inebriety. On the East Side, among the Americans, the Irish, etc., drunkenness was found almost universally, and tuberculosis almost universally as well. In other words, when one tried to get at the cause of poverty, the worst social evil, one was baffled, and no definite generalizations upon it were possible. We did know that social conditions did produce an enormous amount of poverty, and that poverty, tuberculosis, and inebriety were the results of bad industrial conditions. The bad wages paid to shop girls in department stores produced prostitution. After referring to Henry's article in *McClure's Magazine* he said that girls in the city wanted joy and happiness in their lives, and prostitution was the only way for them to get pleasure; with the wages they were getting they could not afford it otherwise.

If one got back to economic conditions one got back to the conditions which produced tuberculosis as well. Mr. Hunter said that he was particularly interested in having the subject brought before the public,—the whole social question. He said that he had helped Dr. Knopf in getting started the Tuberculosis Commission in New York City. Before that he had gotten such commissions started in Chicago and elsewhere. Mr. Hunter did this because he wanted the social problem brought up. He wanted the people in New York to know the social conditions that were present, and that were producing the frightful mortality from tuberculosis. He also wished to show them that social conditions were producing inebriety. He said he was convinced that the present social system was at fault in producing despair, discontent, and finally drunkenness. That also obtained in regard to prostitution and the results of prostitution. In other words, he said that while he was amazed at the reforms Dr. Knopf had suggested, because of his very fertile mind, yet he believed we must get back more and more to fundamental social conditions. He wondered if they could get at the problems presented until better wages, better hours, and proper tenements were provided. In every home some girl had gone wrong, the husband had become a drunkard, or some member had been lost from tuberculosis, the result of the miserable state of hopeless, wretched poverty. When one got above this lower scale of life, things were better. Among the skilled workers the wages were better, the tenements were better, and all was better. Their children were growing up, and were going to be a credit to the State. The further up one went in the scale, the better were the conditions met with.

Dr. T. D. Crothers said, in part, that consumption and alcoholism were very closely associated. In clinical experience one followed the other very frequently. The subsidence of one was marked by the appearance of the other. The problems of their relations had been scarcely studied,

and a very interesting field awaited the explorer in this direction. The problems of alcoholism in practical life were coming into greater prominence daily. In medical circles diseases associated with this factor were more serious and destructive, and the knowledge of this altered materially the question of diagnosis and treatment. In legal circles the problems were also increasing, and becoming more and more imperative, demanding solution. Thus crimes of all kinds committed by persons evidently poisoned by alcohol at the time of the commission of the act, raised innumerable questions of responsibility. Wills written by persons under the influence of spirits, important contracts made and signed in this condition, and criminal acts and conduct in which the persons were using spirits, all brought out the question of what could be done, and where the proper rational means for the prevention should be sought. Such cases were constantly coming into court. The counsel turned to the physician for help. There was some abnormality in each instance. The acts were without the pale of reason, and the continuous use of spirits clearly disturbed the natural common-sense line of conduct of the person. The lawyer turned to the rulings of judges in similar or allied cases, and the physician to text-books of medicine and medical jurisprudence. Both failed; while the lawyer found rulings that apparently applied to such cases, he was conscious that they did not comprehend or recognize the real facts at issue. The more closely he studied these facts, the wider seemed the discrepancy between them and the theories of the law. The judge recognized this inconsistency, but was forced to follow lines of previous rulings, and only along certain narrow limits dared he venture to express opinions at variance with others. The legal theories of these cases were the outgrowth or the moral teachings of past centuries. Such teachings showed that inebriety was moral depravity innate in every life, always ready to grow and develop, and particularly from willful neglect and gratification of the lower animal instincts. Also that inebriety was always a phase of savagery, an inborn tendency to lawlessness, and giving up of restraint and control; indulging the passions, regardless of society or the interests of others. The remedy was punishment, suffering, pain, and in this way building up the moral power to control the lower animal.

Lord Coke's rulings, three centuries ago, that inebriety always aggravated the offense, and should be followed by increased punishment, had been accepted and acted upon as the central truth since that time. The physician who was called into court to assist in reaching equitable decisions in such cases found little or no help from the text-books. Dogmatic statements that were obviously unsound and in conflict with the facts comprised the largest part of the so-called authorities on this subject. The physician turned to a study of the cases and sought to find out the facts as they were presented in real life. Here a new world of truth confronted him. The teachings of modern science opened up a new world of facts that indicated clearly the physiologic nature of all brain activities—facts that showed the influence of heredity, of injuries, of disease, of strains, of drains, of failures, of diet, of surroundings, of culture, of ignorance, and all the vast ranges of influences and forces which entered into the acts and character of each one; facts that showed a march downward, and progressive degeneration, or development and evolution. It was from this evidence that the questions of responsibility and capacity to act sanely at any time and under any circumstances should be studied. No legal responsibility could be solved in inebriety from any other point of view, or from any theories. It was a pure question of facts, not theories of the law, or rulings of judges. What was the history of the man and act in question? If these were clearly ascertained the problem would be solved. If one had failed to do this, confusion, injustice, and wrongs followed. The legal responsibility of inebriety as administered by courts to-day was a farce. A new jurisprudence was demanded, a new scientific study and recognition of these subjects and their disabilities was called for. This demand was felt in every court of justice by clear, thoughtful men.

Judge Alfred E. Ommen said he would consider the question of alcoholism as he met with it; not as it was found in law books or discovered in sociology, but as it came before him day after day in the courts where he was a magistrate. Here he met with a great number of these people who were called "regulars." When one of them appeared, the officer on the bridge would call out "regular." It meant that the man or woman had been before the magistrate before for drunkenness. One could not speak of punishment of these people. If sent up to the island for two, four, or six months, when they came out they would go on another drunk. These people would spend ten or eleven months of every year on the island and punishment would have no more effect than gin on a negro. Then, again, there were many people who came in occasionally—fine, intelligent men, college graduates, men of wide knowledge and experience—they occasionally came into the magistrate's court. To such men it was only necessary to say, "Come on and behave yourself." The former class of people one could not educate nor treat. To state that one could was simply theory, and not fact. This was a very serious proposition, and these men could not be gotten hold of in the way proposed. Their moral nature was gone. Blackwell's Island was for them. Drink was all the fun they got; they got gloriously drunk and were sent back to the island. Some of the medical profession would, no doubt, like to squirt some gold into them, but it would do no good. This was a very serious proposition to solve. Alcoholism caused a great deal of crime and a great deal of distress in this city; but he had his own remedy, which worked very well in many cases. Frequently he had seen fine fellows come before him, accompanied by wife and children; the wife had pleaded with him, stating that he was a good man, husband, and father so long as he kept away from rum. He asked what good would come from sending such a fellow to the island; it would not do the wife any good, and frequently he tried, and successfully, to scare him by saying that he was thinking of sending him to the island for six months, but that if he would promise to behave himself and take the pledge before him as witness he would give him another chance. The man would promise, would sign a pledge, promising not to drink again, it would be properly witnessed, and then it would be handed to the wife, with the statement that if he again got drunk, the broken pledge would be handed to the magistrate and the six months' sentence would be imposed. He said he had had half a dozen wives at least return at the end of six months and state that their husbands had not drank since; that the children now had shoes; that they had new carpets on the floor, etc. That was the way to treat alcoholism as met with in every-day life.

It seemed to him that the basis of a cure of all these conditions was founded upon *home life*. That was the strength of this country—home life. We were getting away from it to-day, and tuberculosis and venereal disease would not be cured until one bettered the home life. There was no doubt about the truth of this statement in his mind. The scientific treatment must be gotten by moral force. Teach the neighbor that it is a disgrace to be drunk or drinking; make this suggestion to him face to face, and probably the fellow would behave himself. There was more drinking by women to-day than at any time before in this city. At the Waldorf-Astoria one could see every day intelligent, respectable women drinking highballs and cocktails. They came from the twenty-story apartment houses, where they lived in furnished apartments, eating in restaurants, with the children not having a decent place to play in, an apartment with two or three rooms and bath, where 2,000 or 3,000 people live in one building, like the Ansonia; this he believed was what was ruining the social fabric of the family. The splendor, the dazzling, the wine, the song, the life of to-day was injuring the social fabric of the

city. Fifteen years ago one took a lady to the theater and, when the play was over, she would be asked to have ice cream or lemon soda, and that was the limit; but now nothing was said after the play; the man would take her to a restaurant, sit down, and immediately say to the waiter, "Bring two Manhattans." Then he would say to her, "Now what?" That was the condition that existed to-day.

He did not think one could do anything by making more laws, as suggested. He was opposed to the proposition to open the saloons on Sundays. The less opportunity for the poor man to get rum, the better city we would have. He studied the problems as he met them. He believed in bettering the home life spirit, and instilling into men that moral life was a gain and gave better results than would be possible from any scientific conversation.

Mr. John C. West said that he regretted that Judge Ommen had failed to say anything on the advisability of forming a temperance society among the lawyers, and that he would be glad to have the judge's opinion on the subject.

Dr. L. Duncan Bulkley said it was entirely excusable and proper that the society should have had this paper read, because it opened the eyes of many to very important thoughts. Some ten years ago he had read a paper on this same subject before this society and made a plea for a legal control of syphilis and venereal diseases. A discussion followed, and, as a result, a committee was appointed, who held several sessions for one year, the two professions being combined in their efforts to learn of one step to control this "great black plague." He said that tuberculosis was called the great white plague. Nothing ever came from the combined efforts of these two professions.

He called attention to the fact that at Brussels two or three international congresses had been held and a national society formed in New York, this latter one being called "The Society of Sanitary and Moral Prophylaxis." He said the Charity Organization Society had taken up this subject, and Mr. Devine had started the opening wedge in venereal disease, by publishing in *Charities* an aritcle emanating from the new society, and he hoped the Society of Medical Jurisprudence would get into this society, a small fee of only two dollars a year being required. Dr. Bulkley said he stood solely and entirely as a defender of the innocent, and referred to his work of twenty years ago, when he began his study of syphilis in the innocent. He started this study with physicians and nurses, and then extended it greatly. He spoke of one Russian town with 30,000 people with syphilis contracted innocently. He said it was not only the physician's duty, but the lawyer's duty as well, to take up the task of enlightening the people. He asked that all present buy the last issue of the paper issued by the *Charities* people, which contained important addresses on the topic under discussion—the subject of protecting innocent people from these diseases. They were as right in attempting to protect people from these diseases as they were in protecting them from tuberculosis. Dr. Bulkley had published over 200 cases where innocent syphilis was contracted from shaving, kissing, bites on the ear, etc. One lady he recalled was infected innocently by the use of sticking plaster, a friend licking it and then applying it, resulting in the production of a chancre. He emphasized the great importance of protecting the innocent from syphilis. Dr. Knopf had said that 15,000 out of 50,000 blind people were blind because of gonorrhea, but the speaker believed that 50 per cent. of them were blind from gonorrheal infection. An enormous percentage of women had abdominal operations performed for pus tubes, often with fatal results, that were due to gonococcic infection. This was a subject that was very important, and one that the Society of Medical Jurisprudence should take up. Dr. Bulkley said that he hoped to live long enough to see entered upon the statute books the opening wedge, *i. e.* that anyone who willingly and wittingly communicated venereal disease should be subjected to punishment. That would place the matter in the hands of the Board of Health. He claimed that women of the streets would report these cases, because they had no character to lose and everything to gain. As a result, a man could not go to any house if he was infected. Why? Because the proprietor could be punished. He believed that if this opening wedge was once made, the people themselves would do the rest.

Dr. E. L. Keyes, Jr., indorsed all that Dr. Bulkley had said regarding the Society on Sanitary and Moral Prophylaxis, a society in which he was most interested, among the members of which were a large number of Y.M.C.A. men, men who worked in the settlements, and who looked more on the sociological side of the question. It seemed to him that the universal opinion was that something could be done toward the prevention of venereal diseases by education, especially the education of young persons, regarding matters sexual, so far as they were capable of accepting them soberly. Just what can be told these young men, for instance, a boy of ten or fifteen years, is a matter which can only be decided by the physician himself in charge of that boy. This was a subject that must be handled judiciously, and knowledge must come from a source which would bear weight and personal influence. This was the side of the work that the Society on Sanitary and Moral Prophylaxis was trying to work up. The prevention of venereal disease by education of the young men, particularly of the working classes, was aimed at by this society, showing them the risks they ran, etc., if heed was given to their advice. The moral side of the question of venereal disease did not arise when tuberculosis was considered. Again, many wanted to get drunk, but none wanted to contract tuberculosis. Many were indifferent whether they ran any risk of venereal disease or not. In his own experience everybody considered himself immune to venereal disease until he was caught. The point of innocent infection with venereal disease was one that could be applied very broadly not only to the lady who had a court plaster applied and caught chancre, but also to the young man who had not been given proper education in sexual matters by his father. This was innocence. This young man was not properly prepared to battle with life as he should have been, and, therefore, when he acquired the disease it was innocently acquired. This was the important matter the Society on Sanitary and Moral Prophylaxis was attacking.

Dr. Ludwig Weiss said in part that inasmuch as prostitution was the fountain head of venereal diseases, and in itself an outgrowth of our socio-economic conditions, the suppression or eradication of which was at present beyond our skill, the entering wedge of our interference should come into action as soon as the damage was done. To sterilize the ever-threatening sources of venereal infection, plentiful hospital and dispensary facilities, the latter with evening classes, should be at the disposal of the affected. In endeavoring to hospitalize, isolate, and treat gratuitously we should get as near their inception as possible, and he found the best means was in education, this being the greatest factor in diminishing the spread of venereal diseases. He said that utopian moralists who had the delusive hope of changing human nature in one generation opposed such humane efforts, forgetting the presence of yet viable perennial aberrant cell formation of primeval origin in some brains with their attendant polygamic and polyandric tendencies; their ultimate redemption would surely come about in time. But, meanwhile as the evil consequences of venereal sins do not stop with the transgressor, but spend their loathsome imprint on the innocent, such measures as prophylaxis by treatment are the most rational ones. In the northern countries of Europe where physicians are told to turn in weekly anonymous reports, and treatment is made free and obligatory, venereal diseases have diminished 34 per cent. of late. As to the status of venereal diseases in the United States, according to information gathered by Dr. Weiss, there was not a State, excepting Michigan, that had any laws beside the sanitary police

regulations pertaining to the spread of venereal diseases, making punishable the marriage of persons afflicted with gonorrhea or syphilis that had not been cured. Physicians were compelled to testify. Among continental countries, Hungary had a punitive law against wittingly communicating venereal disease, forbade the treatment of diseased prostitutes as out-patients, made hospital treatment compulsory, and had the wise law of not collecting expenses accruing from such treatment from the place the patient hailed from. The facilities New York extended to venereal patients were shamefully poor, and not one in 5,000 could get hospital treatment. He closed with a strong appeal for more facilities in this respect as the only available means to check venereal diseases.

Mr. Livingston Ferrand said that, after hearing the various speeches made following Dr. Knopf's able presentation of the subject, there were two phases of the subject at issue, one the educational side, the necessity for securing a sound public sentiment, teaching the masses of the people the subject of sociology, and simple facts regarding prevention and cure. The second phase of the question was the necessity for adequate provision for the care of all cases found in our midst. Dr. Knopf mentioned the establishment of sanatoria. Mr. Ferrand believed that if anything was to be done on the preventive side in stamping out tuberculosis, sufficient sanatorium facilities should be provided. A very difficult problem related to the relation of the tuberculosis cause to the State. As yet no sociologist, economist, medical expert, or other had made clear what should be the relation of the State to the establishment of sanatoria. With regard to State aid for private sanatoria, he did not believe in the use of public funds for this purpose. What he did plead for was the establishment of several sanatoria for the treatment of the incipient cases of tuberculosis as well as the establishment of sanatoria for the advanced cases of the disease. He said it was the incurable cases that spread the infection, and if those were taken care of then we would be, in his opinion, able to stamp out tuberculosis.

Dr. S. A. Knopf in closing thanked the distinguished gentlemen for participating in the discussion and expressed his gratitude to the audience for listening so patiently to what he considered after all not such a very delightful subject to treat. In reply to Judge Ommen's severe criticism at his suggestion to have saloons opened a few hours on Sunday, Dr. Knopf said he, too, believed in the religious observance of Sunday; but he could not see why this religious observance, if it had to be enforced, should not be the same for the rich man as the poor. If the selling of liquors on Sundays is not permitted in the saloon even for a few hours, but is permitted through the entire day, even during the hours of church services, at the club, the law is evidently unjust to the poor man. He said, as already stated in his paper, that the saloon is the poor man's club, and it should be just as painful to the gentleman or lady coming from church to see men with their hats on sitting at the windows of the club drinking cocktails as to see the poor man taking a drink in the saloon.

What the honorable judge said of the ever-decreasing home-life in our own metropolis and other large American cities, Dr. Knopf indorsed most heartily; but he could not agree with the pessimistic views expressed by the speaker when he said that all the drunkards sent to Blackwell's Island were hopelessly gone. He was convinced that quite a number of these cases, if they were medically, morally, and sociologically treated, could be cured, and lastingly so.

Dr. Knopf said that he could not add anything to the admirable presentation of the sociological aspect of alcoholism, tuberculosis, and syphilis as presented by Mr. Robert Hunter. There is but one point on which he would venture slightly to disagree with him; that in which Mr. Hunter thought the suggested reforms and changes in law and customs ineffective. When we are confronted in medicine with a disease for which we have as yet no specific remedy, we treat it symptomatically. The specific for treating all these three diseases discussed this evening, may be, as Mr. Hunter thinks, a total change of our social conditions; but as to what kind of a change none of us are quite clear. For this reason the doctor strongly believes in treating these three social diseases by the reforms suggested; in other words, symptomatically until we have a specificum.

Dr. Crother's views, that many alcoholics are born with a defective brain and nervous system because their ancestors were inebriates, and that alcoholism should be treated as disease, had his most hearty indorsement. Concerning the combat of venereal disease Dr. Knopf did not think that his views differed in the essential from either those of Drs. Bulkley, Keyes, or Weiss. Not being an expert on syphilis or gonorrhea, he would gladly leave the medical management of these subjects to others. Prophylactically, he believed that common sense was essential in venereal diseases as it is in tuberculosis. To his mind Koch's bacillus of tuberculosis had no greater enemy than good common sense.

Dr. Weiss had given a hopeful report regarding the venereal disease problem in the Scandinavian countries. Equally hopeful and gratifying are the reports from there concerning the reduction of alcoholism and tuberculosis. The reduction of the former had doubtlessly been due to the inauguration of the Gothenburger System, and the reduction of tuberculosis to compulsory registration and the taking care of all tuberculous patients; for it must not be forgotten that Norway is the only country and New York the only city where the law permits the removal of the careless consumptive, who is a menace to his neighbor, into a detention hospital. Dr. Knopf said it was his privilege to be one of the attending physicians at the North Brother Island Sanatorium for consumptives where this class of patients are treated. It was surprising that, although most of his patients were sent there against their will, their usual rapid physical improvement under improved hygienic conditions soon made of them docile, obedient, and even grateful patients.

Prof. Livingston Ferrand, the Secretary of our National Tuberculosis Association, had given an admirable presentation of the tuberculosis situation concerning the doubts as to what should be the true relation of the State. Dr. Knopf decidedly believed in a State sanatorium for the poor and for those of moderate means. He thought that Prof. Ferrand inadvertently made a slight error in saying that the greatest danger came from the advanced cases. It was, on the contrary, Dr. Knopf's firm belief, based on many years' experience, that a consumptive up and about doing odd jobs or following his regular occupation, but carelessly expectorating everywhere, was the greatest source of danger to his fellowmen. The advanced case confined within four walls is usually taken care of and watched, and even if he should in unguarded moments be careless, the infection is limited to one room.

Dr. Knopf said that all three problems must be treated prophylactically and symptomatically, and it is then immaterial whether alcoholism is treated as a vice or a disease. The venereal patient should be considered as a criminal only when he willingly and knowingly gives his disease to others. In all other instances he should be pitied rather than censured, and always treated expediently and scientifically. With equal kindness and even greater compassion the tuberculous patient should be treated, who, when conscientious, is never a menace to his fellow-men and can be a most useful member of society. In short, all three, alcohol, venereal disease, and tuberculosis problems are not beyond solution. What is required to combat these three diseases successfully is the combined action of a wise government, well-trained physicians, practical philanthropists, and an intelligent people.

The following resolutions were suggested by Dr. Bulkley and referred to the Board of Trustees for approval and further action:

Resolved, That the Society of Medical Jurisprudence place on record its conviction that legal measures looking toward the protection of innocent persons from venereal diseases are eminently desirable.

It was then moved that a vote of thanks should be extended to Dr. Knopf for his highly interesting paper. The motion was carried.

Philadelphia Pediatric Society.

At a stated meeting held April 10, Dr. James K. Young exhibited a girl, ten years old, suffering from "Hydrocephalus Associated with Premature Development." The head was enormous in size, while the breasts were large and the mons veneris was covered with a generous growth of hair. Dr. D. J. Milton Miller exhibited the photograph of a girl, eight and a half years old, suffering from congenital spasmodic right hemiplegia of central origin, and also presenting remarkable development of the breasts and a growth of hair on the mons veneris. Dr. Samuel McC. Hamill presented a series of cases illustrating "Functional and Venous Murmurs in Children." He dwelt especially upon a murmur heard in the pulmonic area toward the close of the systole, inconstant in its presence and best audible in the recumbent posture. He thought the phenomenon due to increase in the diminution of vascular tension common in children. It is at times present in apparently healthy children, and even in cases in which anemia is present this is thought not to be the causative factor. Dr. Hamill also demonstrated "An Abnormal Area of Dullness in the Chest" which is not described in the textbooks. This is present behind the inner third of the clavicle, and is thought to be due to some peculiarity in the disposition of the apex of the lung associated developmentally with infancy and childhood. Dr. H. Lowenburg exhibited "Two Boys with Enuresis Exhibiting Tolerance to Large Doses of Belladonna." The patients were brothers, ten and eight years old, respectively. In one the condition had been of six or seven years' standing, while in the other it had existed from birth. In treatment tincture of belladonna was first administered, the initial dose being five drops thrice daily. This was gradually increased until sixty drops was administered thrice daily. Notable physiological effects being wanting and the activity of the drug being questioned, an equivalent dose of atropine was administered, namely 1-80 grain thrice daily. This was increased to 1-40 grain thrice daily. In both cases the enuresis was controlled, but there was no undue dryness of the skin or mucous membranes or cutaneous exanthem or mental perturbation, although the pupils were distinctly dilated. Dr. D. J. Milton Miller reported "A Case of Pneumonia in an Infant of Seven Months in which Physical Signs were Absent During the Entire Course of the Disease." The temperature was elevated, respiration accelerated and pulse increased in frequency. Cough and expiration were present, and the illness terminated by crisis. There was no opportunity for bacteriologic examination of the sputum or a study of the blood.

New Instruments.

A DEVICE FOR ANESTHESIA IN RESECTION OF THE JAW.

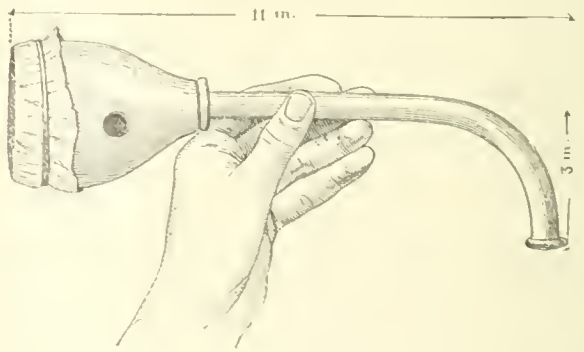
By A. E. Rockey, M.D.,
Portland, Oregon.

Breath and flowing blood, the one every moment necessary to life, and the other, an inevitable consequence interfering with this necessity, combine to make anesthesia in operations on the jaw troublesome, unsatisfactory, and sometimes dangerous. Partial anesthesia in a sitting position, rapid sponging, tracheotomy, intubation with long tube attachment or Junker's apparatus, are means in use. They are only measurably satisfactory, and all open to more or less serious objection.

Several months ago, while assembling my instruments for a total resection of the chin and jaw for cancer, and, no doubt, subconsciously reviewing the steps of the operation, I chanced to see an old and never-used Haegar's ovarian trocar on a lower shelf in the instrument case. Instantly the question of anesthesia in this operation was solved, and in less than five minutes a satisfactory instrument was completed. A few turns of adhesive plaster around the beveled end of the cannula, an old politzer bulb with the top cut off and two air holes at the side, a fold of gauze, and a rubber band, and the device was finished.

To use it, anesthesia should first be induced in the ordinary way. The curved end of the tube tube is then passed back into the throat and the tongue drawn well forward by a stitch passed through it, or by the tongue forceps. The mouth is then packed full of gauze, which compels breathing through the tube and prevents the entrance of blood. Chloroform or any volatile anesthetic is then dropped on the gauze and the air supply controlled by the thumb and finger through the holes in the side of the bulb.

The performance of this simple apparatus has been perfect from the first. The original patient, with a resection extending back of the angles and including the lower lip and chin, is now following his former occupation as director of athletics in a Western college. A recent case in which one side of the jaw and a portion of the cheek were removed, has made a speedy recovery. In both of these operations the lymphatic and submaxillary salivary glands were all removed, as well as extensive portions of the face. The defects were at once closed by plastic flaps. The gauze in the mouth did not require change during the operation and there was no interference with respiration. Profound anesthesia was maintained with ease. The operator and anesthetist are well out of each other's way.



Apparatus for Anesthesia in Operations on the Jaw.

This simple instrument is offered to surgeons and instrument makers for use or improvement. The rubber bulb might well be replaced with a metallic funnel, but I would recommend that the present form and size, both of bulb and tube, be quite closely adhered to. The flange at the end of the tube may be made a little larger, to prevent the gauze from slipping over it and to permit closer packing at the bottom. The accompanying illustration is carefully marked to show the dimensions of the original instrument. The internal diameter of the tube is one-half inch, which is ample for respiration. For me it has served the purpose so well that I shall continue to use the model.

526 Marquam Building.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

DIE KOSMETISCHE UND THERAPEUTISCHE BEDEUTUNG DER SIEFE. Second Edition of Book VI. of Dr. JESSNER'S "Dermatologische Vortrage fur Praktiker. 8vo, 58 pages, paper. A. Stuber's Verlag (C. Kabitzsch), Wurzburg. Price, 90 pfennig.

DIE ORTHODIAGRAPHIE. Von Dr. KARL FRANCKE. 8vo, 102 pages, illustrated, paper. J. F. Lehmann's Verlag, Munchen. Price, 4 marks.

THE JUNGLE. By UPTON SINCLAIR. 8vo, 413 pages, muslin. Doubleday, Page & Co., New York. Price, $1.50.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES. By Dr. E. PERIER. Vol. X., Nos. 1, 2, and 3. Each 8vo, 36 pages, paper. Redaction et Administration, Paris.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE. Redacteurs en chef Drs. A. BROCA and L. GUINON. Vol. XXIV. January and February Issue. 8vo, 48 pages, illustrated, paper (each). G. Steinheil, Editeur, Paris.

TRANSACTIONS OF THE LUZERNE COUNTY MEDICAL SOCIETY FOR THE YEAR ENDING DECEMBER 31, 1905. Vol. XIII. 8vo, 278 pages, paper. The E. B. Vordy Co., Wilkes-Barre, Pa.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Vol. XXIII. 1905. Edited by RICHARD H. HARTE, M.D. 8vo, 392 pages, illustrated, muslin. William J. Dornan, Philadelphia.

NOTES ON SURGERY FOR NURSES. By JOSEPH BELL, M.D., F.R.C.S., Edin. Sixth Edition. 12mo, 187 pages, muslin. Oliver & Boyd, Edinburgh. Price, 2s. 6d.

BEITRAGE ZUR KLINIK DER TUBERCULOSE. Herausgegeben von Dr. LUDOLP BRAUER. Vol. V., No. 1. 4to, 81 pages, paper. A. Stuber's Verlag (C. Kabitzsch), Wurzburg. Price, 3.50 marks.

DIE BEHANDLUNG DER KRANKHEITEN DER NASE UND DES NASENRACHENS. By Drs. A. ONODI and A. ROSENBERG. 8vo, 468 pages, illustrated, paper. Oscar Coblentz, Berlin. Price 8.50 marks.

OUTLINES OF MEDICAL DIAGNOSIS. 1906. Fourth Edition. 12mo, 33 pages, flexible muslin. F. H. Thomas Co., Boston.

URIC ACID, WITH A DISCUSSION OF THE METABOLISM IN GOUT. By FRANCIS H. MCCRUDDEN. 8vo, 318 pages, paper. Paul B. Hoeber, New York. Price, paper, $2.50; cloth, $3 net.

THE TREATMENT OF SYPHILIS. By F. J. LAMBKIN, R.A.M.C. 12mo, 60 pages, muslin. Bailliere, Tindall & Cox, London, Eng.

THE REAL TRIUMPH OF JAPAN. By LOUIS LIVINGSTON SEAMAN, M.D., LL.D. 12mo, 291 pages, illustrated, muslin. D. Appleton & Co., New York. Price, $1.50 net; postage additional.

A TEXT-BOOK ON PRESCRIPTION WRITING AND PHARMACY. By Dr. BERNARD FANTUS. Second Edition. 8vo, 404 pages, muslin. Chicago Medical Book Co., Chicago. Price $3 net.

PERSONAL HYGIENE. Designed for Undergraduates. By A. A. Woodhull, A.M., M.D., LL.D. 12mo, 221 pages, muslin. John Wiley & Sons, New York. Price, $1 net.

A MANUAL OF PHARMACOLOGY. By WALTER E. DIXON, M.A., M.D., B.S., B.Sc., D.P.H. 8vo, 451 pages, illustrated, muslin. Longmans, Green & Co., New York.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA. 1905. 8vo, 587 pages, muslin. Brown Printing Co., Montgomery, Ala.

FOOD AND THE PRINCIPLES OF DIETETICS. By ROBERT HUTCHINSON, M.D., F.R.C.P. Revised Edition. 8vo, 582 pages, illustrated, muslin. William Wood & Co., New York. Price, $3 net.

Etiology of Summer Diarrhea in Infants.—G. Volpino has isolated from the stools of eighteen infants affected by severe forms of summer diarrhea a germ that he calls *Bacillus enteritidis infantum*, whose characteristics are half way between those of *Bacillus coli* and *Bacillus typhosus*. The bacillus was not found in the feces of healthy suckling babies, but was found in those of artificially fed babies, whose stools may be always considered somewhat abnormal. The germ was much more virulent to animals than the *Bacillus coli communis*. Its constant presence, its pathogenic characteristics, and its agglutinability with serum of babies sick with acute gastrointestinal disorders all go to show that it is an etiological factor in the production of summer diarrhea.—*Archivio per le Scienze Mediche.*

Therapeutic Hints.

Leg Ulcers.—

℞ Ol. eucalypt. glob..... 1.
Spt. vini dilut..... 4.
Aq. dest.....200.

M. ft. sol. S. Use once daily as an application and to cleanse the ulcer.

Or:

℞ Ol. eucalypt. glob..... 2.
Talci. venet..... 15.

M. S. Apply to the ulcer once daily.—MICHAILOWSKY, in *Russische medizinische Rundschau.*

Hordeolum.—

℞ Hydragyr. oxidi. rubr..... 0.75
petrolati,
Ung. aquæ rosæ.....aa. 15.00

Apply morning and night after thorough cleansing with hot boric solution.—*Mercks Archives.*

Acute Bronchitis.—

℞ Vini ipecac.
Tinct. scillæ.....aa. ♏ x.
Spts. etheris nit.....ʒ ss.
Aq. chloroformi.....ʒ i

M. Sig. At one dose and repeat every four hours.—*Canadian Practitioner and Review.*

Depilatory.—Take two parts of freshly slaked lime, from which all the gritty particles have been removed, and mix with three parts of water. Through this mixture pass a stream of sulphuretted hydrogen; a pasty mixture of bluish-green color is obtained, having a slight odor of sulphuretted hydrogen; it is not in the least caustic, and may be handled without fear. It should be kept in wide-mouthed, brown glass bottles, well corked, as the carbon dioxide of the air decomposes it readily. Apply by spreading a thin layer with a spatula or spoon handle. If the hair is very long it may be clipped off with the scissors first. The paste is left on for five minutes, and then with tepid water and a towel it is removed by gentle friction. The skin will be found completely free from any trace of hair and better shaved than by the sharpest razor. The paste is devoid of irritating properties. It should not be touched with hands wet with bichloride, as the hands will get black from the formation of the black mercuric sulphide.—*The Medico-Pharmaceutical Critic and Guide.*

Bronchial Asthma.—During the asthmatic attack a little chloroform should be inhaled. Hypodermic injections of morphine with cocaine, or morphine (one-third of a grain) and atropine (1-100 of a grain) will bring about the same effect, but this remedy should be reserved for severe paroxysms. Stramonium cigarettes may also be used. A dram of a powder consisting of powdered belladonna, stramonium, and hyoscyamus leaves with some potassium nitrate, burnt and the fumes inhaled, will often bring about relief. Relief may also be obtained by the inhalation of three to five minims of nitrite of amyl from a crushed capsule. Between the attacks the following may be given:

℞ Potassi iodidii.....gr. x.
Tincturæ lobeliæ.....ʒ ss.
Vini ipecacuanhæ.....♏ xii.
Aquæ chloroformi.....ad. ʒ i.

M. ft. mist. S. Two tablespoonfuls to be taken three times daily after food.

The following is a formula recommended by Dr. Burney Yeo:

℞ Potassii iodidi.....gr.xii.
Extracti stramonii.....gr. 1-6.
Spiritus chloroformi.....♏ xx.
Spiritus ammonii aromatici.....♏ xx.
Aquæ.....ad. ʒ ss.

M. ft. haust. S. The draught to be taken just before going to bed.—*Maritime Medical News.*

Goutiness.—

℞ Potass. iodid.....gr. x.
Potass. citrat.....ʒ ss.
Inf. buchu, ad.....ʒ i.

M. S. Ter in die.

If, as is not altogether infrequent, the patient be anemic, five to ten grains of the potassio tartrate of iron may suitably be added to this mixture, which should be taken immediately after the three principal meals of the day.

Or:

℞ Potass. citrat.....ʒ ss.
Spts. æth. nitros.....ʒ i.
Liq. ammon. acetat.....ʒ ss.
Aq. ad.....ʒ ii.

M. S. In a tumblerful of water three times a day.

In connection with spirit of nitrous ether it is important to remember that it must *not* be combined with iodide of potassium, as the result is an explosive mixture.—WILLIAMS in *The Clinical Journal.*

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery.	Montgomery	July 1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	July 2.
Arkansas*	J. P. Runyan, Little Rock	Little Rock	July 10.
California *	Chas L. Tisdale, 530 California Street, San Francisco.	San Francisco	August 21
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver.	Denver	July 3.
Connecticut *	Chas. A. Tuttle, New Haven	New Haven	July 10
Delaware	P. W. Tomlinson, Wilmington.	Dover	June 19.
Dis. of Col'bia	W. C. Woodward, Washington.	Washington	July 12.
Florida *	J. D. Fernandez, Jacksonville.	Jacksonville	October 17.
Georgia.	E. R. Anthony, Griffin.	Atlanta	October 9.
Idaho	J. L. Conant, Jr., Genesee	Lewiston	October 2.
Illinois	J. A. Egan, Springfield.	Chicago	July 11.
Indiana	W. T. Gott, 120 State House, Indianapolis.	Indianapolis	October 23
Iowa	J. P. Kennedy, Des Moines.	Des Moines	June —
Kansas	T. E. Raines, Concordia.	Kansas City	June 12.
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October 23
Louisiana	P. A. La Rue, 624 Gravier St., New Orleans	New Orleans	October 19
Maine	Wm. J. Maybury, Saco	Augusta	July 10.
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 20.
Massachusetts*	E. B. Harvey, State House, Boston	Boston	July 10.
Michigan	B. D. Harison, 205 Whitney Building, Detroit.	Ann Arbor	June 12.
Minnesota	O. E. Linjer, 24 South Fourth Street Minneapolis	St. Paul	June 5.
Mississippi	J. F. Hunter, Jackson	Jackson	October 9.
Missouri	J. A. B. Adcock, Warrensburg		
Montana*	Wm. C. Riddell, Helena	Helena	October 2.
Nebraska	Geo. H. Brash, Beatrice	Lincoln	
Nevada	S. L. Lee, Carson City.	Carson City	August 6.
N. Hamp're*	Henry C. Morrison, State Library, Concord.	Concord	July 6.
New Jersey	E. L. B. Godfrey, Camden	Trenton	June 19.
New Mexico	B. D. Black, Las Vegas	Santa Fe	June 4.
New York	C. P. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo,	June 19.
N. Carolina*	Geo. W. Pressly, Charlotte	Charlotte	
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July 3.
Ohio	Geo. H. Matson, Columbus	Cincinnati, Cleveland, Columbus,	June 12.
Oklahoma	J. W. Baker, Enid	Guthrie	June 27.
Oregon*	B. B. Miller, Portland	Portland	July 11.
Pennsylvania.	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburg,	June 19
Rhode Island	G. T. Swarts, Providence.	Providence	July 5.
S. Carolina	W. M. Lester, Columbia	Columbia	June 12.
S. Dakota	H. E. McNutt, Aberdeen.	Watertown	July 11.
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May, 1907.
Texas	T. T. Jackson, San Antonia	Dallas	June 12.
Utah*	R. W. Pisher, Salt Lake City	Salt Lake City	July 2.
Vermont	W. Scott Nay, Underhill.	Burlington	July 10.
Virginia	R. S. Martin, Stuart.	Richmond	June 19
Washington*	C. W. Sharples, Seattle	Tacoma	July 3.
W. Virginia*	H. A. Barbee, Point Pleasant	Charleston	July 10.
Wisconsin	J. V. Stevens, Jefferson.	Madison	July 10.
Wyoming	S. B. Miller, Laramie.	Cheyenne	June 6,

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

The National Confederation of State Medical Examining and Licensing Boards will hold its annual meeting in Boston, on June 4, 1906; the president is Dr. Henry Beates, Jr, of Philadelphia.

New York and Michigan now reciprocate. The *Journal of the Michigan State Medical Society* for May, 1906, says: At a meeting held in Pittsburg on March 18 representatives of the New York Regents and the Michigan Board of Registration made a critical and comparative examination of the New York and Michigan medical acts, and the standards of preliminary and medical education in Michigan, and decided that a license of indorsement should be offered by either State to those who had won a license, by examination, in the other."

Louisiana.—An act is before the legislature of this State to amend the present medical practice act, and to make more suitable regulations for the practice of medicine. Provision is made for examinations as heretofore; and the board is to be empowered, "at its discretion, to waive said examination in favor of any applicant who shall present to the Board a satisfactory certificate of examination from a Board of Medical Examiners of another State, provided, however, that said Board created under this Act shall have found that said Board of Medical Examiners of another State has a standard of requirements satisfactory to the Board created under this Act; the said Board created under this Act to be the sole judge as to the sufficiency of the standard required and of the certificate issued by said Board of another State."

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 26, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	404	184
Diphtheria	378	46
Measles	1,111	35
Scarlet Fever	219	31
Smallpox	2	.....
Varicella	111	.....
Typhoid Fever	37	9
Whooping Cough	38	7
Cerebrospinal Meningitis	35	23
Malarial Fever	.....	.....
Totals	2,335	335

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending May 26, 1906:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
Arkansas, Fort Smith	Apr.	23–May 12	5	..
California, Los Angeles	Apr.	23–May 12	2	..
Mill Valley	May	12	1	..
Oakland	May	7	3	In camps.
Petaluma	May	12	1	..
Pleasanton	May	12	1	..
Stockton	Apr.	1–30	1	..
District of Columbia, Washington	May	5–19	18	..
Florida, General	May	12–19	14	..
Jacksonville	May	5–19	4	..
Georgia, Augusta	May	7–21	4	..
Illinois, Chicago	May	12–19	3	..
Kansas, Abilene	Apr.	14	12	..
Topeka	May	5–12	1	..
Louisiana, New Orleans	May	5–19	12	..
Maryland, Baltimore	May	12–19	1	..
Michigan, Detroit	May	12–19	2	..
Missouri, St. Louis	May	5–19	3	..
Montana, General	Apr.	1–30	3	..
Nebraska, Omaha	May	12–19	1	..
North Carolina, Greensboro	May	5–19	2	..
Ohio, Cincinnati	May	4–18	12	..
Dayton	May	12–19	2	..
Pennsylvania, Lancaster	Mar.	29-Apr. 5-19	1	& 1 case.
Philadelphia	Mar.	31–Apr. 7	2	..
"	Apr.	14–21	2	..
"	Apr.	28–May 12	2	..
Pittsburg	Apr.	28–May 12	4	1
Tennessee, Memphis	Apr.	28–May 19	29	..
Nashville	May	12–19	3	..
Wisconsin, Appleton	May	5–19	3	..
La Crosse	May	5–12	3	..
Marinette	May	7–19	5	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Apr.	7–14	7	..
Monrovia	Mar.	1–30	3	..
Argentina, Buenos Ayres	Feb.	1–28	38	25
Belgium, Antwerp	Apr.	21–28	4	1
Brazil, Pernambuco	Mar.	18–Apr. 15	..	25
Rio de Janeiro	Apr.	15–22	1	..
Canada, Toronto	Apr.	28–May 12	4	..
China, Hongkong	Mar.	31–Apr. 7	15	15
France, Marseille	Apr.	1–30	..	2
Germany, Bremen	Apr.	28–May 5	1	..
Great Britain, Bristol	Apr.	28–May 5	1	..
Cardiff	Apr.	28–May 5	2	..
London	May	28–May 5	3	..
Newcastle-on-Tyne	Apr.	28–May 5	1	..
Greece, Athens	Apr.	21–May 6	..	5
Patras	Mar.	27–Apr. 10	2	2
India, Bombay	Apr.	17–24	..	18
Calcutta	Apr.	7–14	..	206
Karachi	Apr.	15–22	20	13
Madras	Apr.	14–20	..	42
Rangoon	Apr.	7–14	..	51
Italy, General	Apr.	26–May 3	35	..
Japan, Hironuma	Apr.	21–28	1	..
Russia, Odessa	Apr.	14–28	30	6
St. Petersburg	Mar.	31–Apr. 21	28	6
Spain, Barcelona	Apr.	20–30	..	12
Turkey, Constantinople	Apr.	15–29	..	2

YELLOW FEVER.

Cuba, Matanzas Province	May	18–23	2	1
Mexico, Merida	May	10–12	3	2
Panama, Colon	May	22	..	1

CHOLERA.

India, Bombay	Apr.	17–24	..	40
Calcutta	Apr.	7–14	..	48

PLAGUE—INSULAR.

Haiwaii, Honolulu	May	13–21	2	1

PLAGUE—INSULAR.

China, Hongkong	Mar.	31–Apr. 7	24	2
India, Bombay	Apr.	17–24	..	1084
Calcutta	Apr.	7–14	..	260
Karachi	Apr.	15–22	253	198
Rangoon	Apr.	7–14	..	64
Japan, Wakayama	Apr.	21–28	1	..
Peru, Lima	Apr.	1–9	6	1
Mollendo	Apr.	1–9	1	1
Pascamayo	Apr.	1–9	5	1
Reque	Apr.	1–9	1	1
Trujillo	Apr.	1–9	4	3

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 23.
Whole No. 1857.

New York, June 9, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

CIRCUMCISION.

NOTE OF AN UNORTHODOX OPERATION, WITH SOME HISTORIC AND ETHNOGRAPHIC OBSERVATIONS ON THE (NON-SURGICAL) PRACTICE.

By JOHN KNOTT, A.M., M.D., Ch.B. & D.P.H. (Univ. Dub.), M.R.C.P.I., M.R.I.A., etc.

DUBLIN, IRELAND.

One of the by-products of ethnic enlightenment which has been derived from the exploration of the Dark Continent during recent years, is the additional knowledge gleaned therein regarding the cosmopolitan diffusion of the practice of circumcision—at least within the warmer climates. The observations of exploring travelers in sundry remote regions of the world have, during the past half century, added an enormous amount of details to our store of accumulating facts regarding this operation, as practised by the islanders of the remote archipelagoes and the continental savage tribes which had previously succeeded in secluding themselves from the detested encroachments of European civilization. The recent perusal of some very interesting items dealing with this subject in the pages of the *Journal of the Anthropological Institute* brought vividly before my recollection the details of an operation of this nature which I performed some years ago, when spending a holiday retreat in a remote part of the country—under conditions which tended to render the history of the case (and the operation) somewhat primitive in type, as contemplated under either head, and from both aspects. Accordingly, it had the consecutive effect of inducing me to exhume the notes which I had made at the time, and also of awakening the hope that a summary of the same, with some added historical observations on the subject of this operation, might not prove uninteresting to the average professional reader; as they, very obviously, never do to the special students of anthropology and folk-lore.

Circumcision is a proceeding essentially surgical—in its first presentable aspect. By the unrivaled antiquity of its origin, the equally unrivaled extent of its adoption, and the wholly unique characters of its national, racial, and religious associations, it has come to occupy a position which cannot definitely be either compared to, or contrasted with, any other known professional operation. As Dr. Buisson truly and tersely puts it, "Elle a pris place parmi les rites religieux. Sa valeur pratique s'efface devant le symbolisme dont elle est l'expression."

At the date of the operation which forms the subject of the text of the present communication, I was, as I have already mentioned, taking a country holiday. The student (non-medical) who was the subject thereof had imported with him, from Dublin, to the same vicinity, a specimen of gonorrhea, which was just then passing into the subacute stage, and was complicated with left epididymitis. Under those very unfavorable conditions he had, to my surprise as well as disgust, been using the affected organ with the worst results, and indeed under peculiarly nauseating circumstances. After being made acquainted with the facts, I met him at the house of a relative with whom he was staying; and, as he was the subject of a very unusually tight phimosis, I made the—under the conditions extremely heterodox—suggestion of his submitting to circumcision. I was provided with a surgical pocket-case, a supply of iodoform, some absorbent cotton, a roll of rubber adhesive plaster, and a few *et ceteras*. I had full faith in the efficacy of iodoform in the prevention of infection, and felt that the operation would have the very desirable *moral* effect of preventing further inoculation—for a time. I was very much gratified by his acquiescence. The dining room on that occasion was occupied by the host, the patient, and myself. It was an occasion of true Hibernian hospitality. So I procured some boiling water, got our host to hold the patient's hands behind his back, after getting him to swallow a rather large dose of "John Jameson's best"—undiluted; and having exposed the affected organ as he stood in the erect position, I passed a grooved director under the prepuce till arrested by the fornix, and rapidly slit it up with a Syme's bistoury which I had rinsed in the hot water. I then grasped, in succession, each of the two resulting flaps, and removed it close along the line of reflection. I believe that the operation—I suppose I should interject, parenthetically, "although I say it, who shouldn't"—has never been more rapidly carried out. I encouraged the bleeding for a time, by bathing with warm water; as I believed that it would have a beneficial effect on the adjacent inflamed surfaces. After an interval of about ten minutes, I used compression with pads of the absorbent cotton, and, when the oozing had pretty completely ceased, I dusted the cut surface copiously with iodoform powder, wound several layers of fresh cotton round the organ, and secured them in position by strips of plaster, which were anchored laterally on the thighs. There were no further details to be registered; the dressings were renewed on alternate days; no infection whatever of the cut surface followed; the gonorrheal discharge and epididymitis steadily subsided during the treatment; and the wound was closely healed after a period of eleven days. The use of an astringent injection of a solution of zinc sulphate (gr. ij.—℥i.) was then prescribed. When I saw the patient, six weeks later, the urethral discharge had completely disappeared; a barely perceptible, and completely uniform, cicatricial line marked the junction of skin and pseudomucous membrane behind the cervix; and the only ascertainable pathological condition present was some remaining enlargement of the epididymis—with distinct thickening of the emerging vas deferens, which did not wholly disappear till it nearly reached the external abdominal ring. I then prescribed potassium iodide in 5 gr. doses three times a day. I did not see him—professionally—again; but he wrote at the end of a month, and told me that all seemed so well that he had given up taking the medicine. Within a

year after he married. There has been no family. Such are the prominent facts and features of a peculiar case, and an operation carried out in opposition to several of the most important tenets of *secundum artem* procedure. It bears testimony, however, to the antiseptic powers of iodoform, and illustrates the fact that the conservative effects of contraction of newly-formed tissue may leave a cicatrix quite as narrow when not even a single suture has been employed. Since the date of the experience above detailed, I have in a few cases, where there existed a morbid fear of anesthetics, carried out the procedure on similar lines, and always with a correspondingly favorable result.

The statement has been made—and on apparently good grounds—that circumcision is the most ancient of all the surgical operations. Indeed the truth of the affirmation seems to be now generally admitted by experts in the arcana of anthropological and antiquarian lore, as well as by those best acquainted with the history of primitive surgery. The locus of its origin has not been so definitely agreed upon; and, indeed, in the nature of things, the question of its fixation hardly admits the prospect of a satisfactory settlement. It has, however, been very extensively discussed. Various writers have, from time to time, tried to locate its earliest appearance in a single tribe or territory; from which central position the practice radiated through surrounding districts, and so extended to the remoter regions of the earth. The strongest claims hitherto advanced would appear to be those made in favor of Jewish and Egyptian origins. Till within very recent times, of course, the vast majority of the members of the "well-read," and even "learned," circles of Western civilization, unquestioningly attributed the earliest appearance of circumcision to the Mosaic introduction of the practice among the "chosen people"—as a distinctive and sacred rite. But this view was shaken to its foundations by the publication of the results of the researches of Welcke, who found a true specimen of circumcision in the person of the mummified Amen-en-hab, who lived between the years 1614 and 1555 B. C.; and has been even more hopelessly demolished by the discovery of the widespread existence of the practice among the aborigines of the Australian Continent and of the Malayan Archipelago. Philostorgius has left on record his testimony to the existence of the practice among the Arabs as early as 342 B. C. At the present day, circumcision reigns over part of the (now so troubled) Balkan regions; and over Asia Minor, Persia, and a great part of India. It has been truly remarked that the practice is so approximately universal among native African tribes that it would be far easier to enumerate those who do *not* use it than those who do. Its complete prevalence all over Northern Africa has been attributed by some writers to the influence of the example of the Mohammedans; but this view is hopelessly discounted by the fact that it is as diligently observed by aboriginal tribes which have no contact with Islam. An attempt has, indeed, been made by Zobirowski to give some further probability to the Islamic, or at least Oriental, source of the prevalence of circumcision in the Northern Zone of the Dark Continent, by an endeavor to show that it is practised only by the tribes which also possess plants of Eastern origin—such as millet, rice, or sorgho (boura); this fact, if duly substantiated, would favor the writer's view that the custom gradually radiated through Africa from an Egyptian focus. The conclusion has, however, been definitely rejected by some of the most competent critics on the questions connected with this discussion; and the historic (non-) sequence and (ill-connected) induction of the facts and views which that writer displays for the conviction of his readers will not bear critical scrutiny.

The very remarkable prevalence of circumcision over so large a proportion of the area of the African Continent is also shown in its employment by the Christian Abyssinians, as well as by the Bogos and the Copts. It has been suggested that the first of those bodies probably adopted the practice originally from their Jewish neighbors. It is an interesting association of the conservatism of the operation—or ritual observance—that Ludolphus, in his very fascinating historic and descriptive account of Abyssinia, mentions the employment of stone knives by the Alnajas of that country in circumcising; as is the present practice of the aboriginal Australians and the North American Indians, and was the ancient practice of the Jews and the Egyptians. We are told by recent explorers that the Marolongs of South Africa always operated with a "fire-stone" (meteorite) till their routine of life was disturbed by the encroachments of European civilization. Now they circumcise with an assegai! Mussel-shells are still employed in parts of Polynesia. Schudt refers to an instance of the employment of a stone knife by Jews in circumcision as late as 1726.

As might be anticipated in a period of virulent doctrinal controversy, Celsus (the antagonist of Origen) and Julian (the Imperial "Apostate") objected to the account of the Abrahamic origin of the practice of circumcision, the fact of his having come from Ur of the Chaldees. They argue that he found the practice established in Egypt; and, after having left the latter country, adopted it for his own household. This view has been resuscitated in modern times by Chevalier Marsham and M. Leclerc, who base their advocacy on the testimony of Herodotus and of Diodorus Siculus, both of whom state that circumcision was gradually adopted by the neighboring tribes and nations from the practice which originated with the Egyptian priesthood. That the custom existed in the mysterious land of the Nile from time immemorial is an historical fact now thoroughly well established, although the testimony of the uninitiated Herodotus and Diodorus be ruled out—as was, indeed, done in the case of the former by Manetho himself. And it is highly significant, as well as highly interesting, to remember that Egyptian circumcision was not for the *profanum vulgus*. We have the testimony of Josephus, which is corroborated by that of Origen, of St. Ambrose, and of St. Epiphanius, that it was the distinctive physical stamp of the elect and the learned: Priests, geometers, astronomers, astrologers, and the skilled scribes of the hieroglyphic symbols. Indeed, we find St. Clement of Alexandria referring to the efforts made by Pythagoras (in his tireless pilgrimage in search of truth and knowledge) to be circumcised on his arrival in Egypt, as the subjects of that operation could alone be admitted to the privilege of initiation into the special "mysteries" and esoteric doctrines of that inspired circle of priest-philosophers. The fact that the reproachful term "uncircumcised" is applied to the Egyptians by the Jewish prophets Ezekiel and Jeremiah proves that the application of the epithet was not meant to be taken in the literal sense. It corresponded pretty accurately to the "barbarians" of the Greeks, as used by the latter people in the centuries of their self-satisfied superiority. On the subject of the general adoption by the Jewish people, and its origin from that chosen race, statements so diametrically divergent may be found as that of Artapanus, who is cited by Eusebius to prove that Moses originally communicated the practice of circum-

cision to the Egyptian priests, and those of others who believe that the rite was adopted by the Jewish people only in the reign of King Solomon—one of the very numerous importations of that polygamous monarch! There appears to be no doubt that the ritual operation of circumcision in the palmy days of the Pharaohs indicated admission of the boy who had just reached the age of puberty into the "pure" order of priesthood. And in Genesis we find the Hebrew coincident recognition of heirship, and conferring of a new name.

A still more striking testimony to the almost limitless distribution of the practice of circumcision is to be found in its prevalence among the aboriginal natives of America. The Caribs of the Orinoco and the Tacunas of the Amazon use it. Petitot found it regularly practiced by the Athapascans, and McKenzie by the Dog river Indians. Las Casas reported its existence among the Aztecs; and others have found corresponding ceremonial practices to prevail among the Mayas of Yucatan, the Automecos, the Salivas, and the Guemos. It is specially interesting, too, to note that the latter perform it on the eighth day—which appears to be the earliest recorded date of the practice among savage tribes. An analogous custom was found by Squier to prevail among the inhabitants of Nicaragua, of which the most essential item appears to consist in the dipping of corn in the blood drawn from the organ, and then sowing the latter. We are informed by Garcia de Palacio (1576) that a similar practice was found by Cortez among the native Mexicans; but in their ceremonial the blood drawn was offered upon the altar in way of sacrifice. Herrera, indeed, states that the practice which was carried out by the aborigines of Mexico was that of removal of the pendent part of the prepuce, and the correspondingly flexible—pendent—margins of the lobes of the ears.

There was certainly no definite prescription given to the ancient Jews regarding either operator or instrument. The rite could be carried out by the father, or any other relative (mother, as in the instance of Zipporah, Moses' wife), or by the priest. A sharpened stone was the instrument of primitive usage, as it was with the Egyptians (and also employed by the latter in the process of embalming), and as it, or a broken potsherd, was the weapon employed by the Galli (priests of Cybele) in the distantly (blood-) related operation of self-mutilation. That the absence of the prepuce was in after ages discovered by Jewish women to cause a deficiency of sensual gratification during coition is hinted at by Sir Thomas Browne, who, among many characteristically interesting items of information regarding the relations and contrasts of Jews and Christians, mentions that: "Nor are fornications unfrequent between them both, there commonly passing opinions of invitement, that their women desire copulation with them, rather than their own nation, and affect Christian carnality above circumcised venery."

The cosmopolitan distribution of this first and most frequent of all surgical operations has, very naturally, given rise to a great deal of speculation and inquiry regarding the source of its origin and the intimate nature of the practice. The rather numerous theories which have been advanced by various investigators may be classified under the headings of utilitarian, tribal, and sacrificial.

Among the *utilitarian* motives which may have promoted the adoption of the practice, those connected with the cleanliness and hygiene of the person appear to have a very strong claim. We know how soon the preputial smegma becomes offensive when retained—and, more especially so, of necessity, in hot climates. And, where congenital phimosis exists, the subject of this condition, if a tropical resident, must almost inevitably suffer from a persistent balanoposthitis, if the retropreputial *cul-de-sac* is not regularly and carefully syringed out. The reflex irritation produced by this condition in children gives rise to varieties of trouble, as is well known to all medical practitioners. Among these may be mentioned dysuria, enuresis, hernia, hydrocele, prolapsus recti, vesical calculus, epileptiform convulsions, and even reflex paralysis—superadded to the irritation which is so likely to induce the practice of masturbation. And the fact that epithelioma of the glans is most likely to appear, in advanced life, among the subjects of congenital phimosis, has been generally recognized since the publication of "Observations in Surgery," by William Hey of Leeds. Even Philo, the contemporary of Christ, mentions cleanliness as one of the motives for the original Biblical injunction on the chosen people; and late writers of high authority, such as Claparède (1861) and Rosenzweig (1878), have recommended the universal adoption of circumcision on these grounds. The apparently fatal objection to the hypothesis that the original adoption of circumcision by so many primitive tribes and nations was due to motives of personal cleanliness and hygiene, is found in the fact that it is at the present day practised most scrupulously by many tribes in various parts of the world who do not possess, or carry out in practice, the most elementary ideas of cleanliness in any other direction.

Another suggestion toward the utilitarian motive of the original practice of circumcision was advanced by the late Sir Richard Burton, the very accomplished and (probably most) experienced traveler. He advocated the view that the operation was introduced for the promotion of fertility. The fact that in Celebes it is performed only on the persons of princes who have no children would seem to furnish at least one item of evidence in support of the theory, but the practices of the great majority seem to be decidedly against this view. In some other regions, also, it would seem to have been cultivated as one of the distinctive privileges of the upper classes. It appears to have been so regarded in Mexico; and we are told that in Rook Island it is performed on the persons of the wealthy only. There would seem to be a good deal of probability in the view that utilitarian ideas had a certain amount of influence toward its adoption as a preparation for marriage in some instances. A long, narrow prepuce, even if not originally in a state of actual phimosis, was liable to become so at any time—from the occurrence of even slight inflammation. Its presence, in case of negligent persons, was always productive of local uncleanliness. And, on the occasion of sexual intercourse, the sensitive glandular surface was necessarily excluded from direct contact with that of the vagina—a very objectionable condition from the sensualist's point of view. Also, a very long prepuce, by folding or creasing, might cause misdirection of the ejaculated semen. And, furthermore, the chronic phimosis was liable, on the occasion of the consummation of the marriage rite, to become converted into an acute paraphimosis, of which all practitioners have necessarily met with examples. The establishment of this condition always produces great alarm, as well as local pain and uneasiness, and causes the afflicted individual to seek advice and relief whenever procurable. In this connection, I cannot pass from the subject without calling attention to the curious pathological error which universally prevailed in the surgical text-books of my student days, and contin-

ues to reappear in the pages of their successors even in the twentieth century. An item of orthodox surgical faith which was invariably taught, and (necessarily) universally received, was that the tight paraphimotic constriction—if not artificially relieved—must necessarily lead to sloughing of the glans from the interruption of the circulation in the latter. Yet the surgical and pathological truth is that such a consummation never occurs, and never can occur from this cause alone—in the case of a previously healthy organ. The cause of the prognostic error is that the constricting band which temporarily interrupts—or retards—the circulation is formed by the retroflexed—previously free—margin of the prepuce, and is therefore a portion of the living tissues of the affected part. It is also the particular portion of the whole structure in which the circulation is most affected by the mechanical obstruction. The necessary consequence is that if the constriction be not relieved, the surface of the tightest portion of the constricting band undergoes ulceration—the Gordian knot is cut, and the circulation in the glans is restored. Accordingly, every acute paraphimosis, alarming as the condition looks, tends to a spontaneous cure.

The Mohammedans do not carry out the operation of circumcision with the exacting scrupulosity of the Jews: they merely detach the overhanging foreskin, but do not think it necessary to expose the surface of the glans. We are told that in India the operator introduces a wooden probe between the prepuce and glans, and passes it round and round, in order to make sure that no unnatural adhesions exist. Some primitive tribes paid very special attentions to the detached piece of foreskin. The Marolongs buried it with scrupulous care; the Zulus received it in a cup nearly filled with ashes, which they interred with it; among the natives of Madagascar a relative of the child operated on seized the detached prepuce and—swallowed it!

The suggestion of the practice of circumcision as a *tribal* distinction has been defended by the argument derived from the fact that the age at which many African tribes perform the operation is identical with that which some of their neighbors confer their own special tribal "hall-marks." For instance, the Hereros of Africa knock out the front teeth of their boys on the arrival of the latter at the age of puberty; the same date at which so many of the circumcised tribes of the same continent perform their distinctive rite. Although the adoption as a solely tribal distinction may have been true in a (very) limited number of instances, I think that everything known of the history of circumcision argues, in the vast majority of cases, against the reception of that view. This remark, I venture to state, applies with special weight in the case of the Jewish race—notwithstanding the bigoted antipathy with which they regarded their uncircumcised contemporaries. Racial and collateral antipathies led to the development of such expressions of odium; but there can be no doubt of the religious—sacrificial or symbolic—origin of the adoption of the practice in their case. Indeed, as Gerland has pointed out, it would be difficult to fancy the employment of circumcision as a distinctive tribal mark, having regard to the fact that the organ is almost invariably hidden. Nevertheless, it is instructive to remember that as an example of the universal diffusion of the contradictory instincts and opinions of the representatives of learning and wisdom, we find the Roman historian Tacitus refer to circumcision as the distinctive racial stamp of the Jewish people: "Genitalia circumcidere instituêre, ut diversitate noscantur." And this view was deeply impressed upon Christendom by the great authority of St. Jerome: "Ne soboles dilecti Abraham ceteris nationibus misceretur, et paulatim familia ejus fieret incerta gregem Israeliticum quodam circumcisionis cauterio annotavit."

The *sacrificial* theory of the origin of the practice of circumcision—national and tribal—or, better, perhaps, the combination of a sacrificial and an initiatory ceremony would seem, I incline to think, to furnish the most acceptable account of this widely-spread practice—in accordance with all the available evidence. It may take the aspect of a quasi-sacramental token of initiation into a religious sect, as it has done for the Jewish and Mohammedan proselyte—which goes to show the intimate nature of the native view of the ceremony, as performed upon themselves at an earlier period of life. It has been suggested—and with some show of probability—that the transfer of the date of the operation from that of initiation into the religious brotherhood, simultaneously with induction into the fraternal equality of mature life, was made from considerations of convenience and diminution of amount of pain inflicted. The age varies greatly in different races and regions of the world. The Jews, as is, of course, well known, have always adopted the eighth day—according to the Mosaic injunction. And the influence of initiation on the fixing of the date is well shown by the fact that in Yemen, where Jewish influence was much felt, the Arabs circumcised their children on the eighth day. The Mohammedan laws recommend circumcision between the ages of seven and twelve years; but its performance seven days after birth is allowed. We are told by Josephus that the Arabs circumcised after the completion of the age of thirteen, because Ishmael, the founder of their nation, was circumcised at that age. Other various ages have been assigned by Ibn al-Athir and many other Arabic authorities. Mohammed himself, for whatever reason, does not appear to have thought it necessary to make any mention of circumcision in the Koran. Abulfeda, indeed, in his "Historia Ante-Islamitica," reckons circumcision among the rites of pagan Arabia, whose continued practice was sanctioned by Islam; and Ibn al-Athir, in discussing the annals of that period, attributes to the prophet of Islam the aphoristic statement that: "Circumcision is an ordinance for men, and honorable for women." Hurairah, the great authority on the traditional history and doctrines of the Moslem faith, attributes to Mohammed the ruling that circumcision is an observance of *fitrah* (natural impulsion), and, accordingly, possesses no special religious character. But, whatever may have been the original opinion and teaching of the founder of Islam on this head, there is no question of the fact that the practice was soon established among his followers as a religious obligation which was imposed upon all the faithful. The time at which the rite was performed hardly seems to have been definitely limited; it would appear that each locality fixed its own period. I have already alluded to the practice in Yemen, which followed the Jewish eighth-day ceremony. It is lawful to carry it out even on the seventh, but Muslim law *recommends* the period between the seventh and twelfth years (inclusive). A new name is then added to the former one of the individual, and a festival and rejoicings follow.

The age at which the rite is performed has varied very widely among the various tribes who practise circumcision, as the examples already referred to show. The Jewish—eighth-day—operation is the earliest; indeed, the sect of Falashas perform it on the seventh, while the natives of southwestern

Arabia choose the seventh, fourteenth, twenty-first, or twenty-eighth, according to the influence of collateral circumstances. Few savage races of other countries circumcise their children so early; but we are told that the Susus, near Timbuctoo, and the Guemos of South America perform the operation on the eighth day after birth. The Mazeguas of East Africa choose between the first and second month. The Persian votaries of Islam wait till the third or fourth year, and the Coptic Christians till the sixth, seventh, or eighth. The Fijians and Samoans also circumcise their boys in the seventh year. But there is no doubt that the great majority of circumcising tribes connect this operation with the advent of puberty. The neglect of Moses to circumcise Gershom was, perhaps, in some way associated with the fact of the marriage of the original Hebrew lawgiver with a Midianitish woman.

In all ages of historic time, and among all the tribes and nations who have practised circumcision, the performance of the operation has usually furnished the nucleus of some special ceremonial. Most frequently it is found to form a part in the general process of the initiation of the youth into the mysteries and responsibilities of manhood. Halévy tells us that among the Jauf of Southern Arabia it is regarded—in one aspect, at least—as the application of a test trial of endurance. The native tribes of Australia and of Africa employ elaborate ceremonial observances, from which strangers are jealously excluded. Thus Livingstone was unable to obtain admission to the "boguera" of the Bechuanas. In this relationship Ploss, who is certainly one of the best-informed authorities on the ethnology of *Knaben-Beschneidung,* contends that the fact that circumcision is almost always found forming part of a rite of initiation furnishes the clue to its general adoption. Commenting on this view, the eminent Jewish authority, Joseph Jacobs, observes: "According to the wise custom among savages of initiating their youth into all the duties of the mature life, the elders prepare the lads for their marital life at this time; and circumcision, often of both sexes, is resorted to as part of the preparation. The only ancient legend about Zipporah circumcising Moses (as would seem to be implied by her exclamation, Ex. iv. 25, 26) confirms Ploss's view to some extent; but the exceptionally early age at which Jews perform the rite takes it entirely out of the category of initiation ceremonies among them, and proves it to be of a religious or symbolic nature, as, indeed, is expressly claimed for it."

Some inquirers have arrived at the conclusion that circumcision, like castration, originated among savage tribes as a substitute for human sacrifice. Herbert Spencer has suggested that it began as a sequel of conquest: the victors permitting the vanquished to retain their lives with this permanent stamp of humiliation. Samson's appeal to his father (Judges xiv. 3), and that made by David to Saul and the Israelites, give a certain appearance of plausibility to this theory; but, as Jacobs points out, the fact that its practice is either common to all the members of the tribe, or is reserved for the upper and privileged classes, argues very strongly against the view.

A very suggestive and, probably, enlightening fact in connection with the study of the origin of circumcision is that the Arabic word *hatana* signifies both "to marry" and "to circumcise." It seems to point definitely to an original connection between the two rites. Our eminent contemporary Jewish authority, Kaufmann Kohler, inclines to regard its practice among that primitive people as a consecration of the generative powers, and proceeds to observe that: "At all events the age of puberty is most frequently selected for the rite; and, after weeks of purification, accompanied by tests of courage, the boy is formally graduated into manhood and, bearing a new name, is ushered into the bridal chamber." This writer also refers to the theory advanced by the representatives of the "higher criticism" to account for the non-circumcision of the junior Israelites during their prolonged wanderings in the desert: "The ancient Hebrews followed the more primitive custom of undergoing circumcision at the age of puberty, the circumcision of young warriors at that age signifying the consecration of their manhood to their task as men of the covenant battling against the uncircumcised inhabitants. After the settlement of the Israelites in Palestine, the rite was transferred to the eighth day after birth." The origin of circumcision from hygienic motives, although suggested by the very representative authority of Philo and of Josephus, is regarded by Kohler as a theory which presents no other than a historical value.

The harsh treatment which the Jews were doomed to undergo at the hands of their more powerful neighbors had, as such conditions always have, the effect of increasing their devotion to the national customs. The Romans would seem to have entertained a special dislike to their rite of circumcision; and the terrible persecution which they suffered in the reign of the Emperor Hadrian was specially aimed at its practice. And the gruesome history of the Jewish race in western Europe during the Middle ages served to stamp their adhesion to this item of faith and practice all the more deeply. The biographers of a celebrated rabbi bear records such as the following: "Why did God not make man as he wanted him to be?" asked Tinnius (Tyrannus) Rufus, with biting sarcasm; and Akiba replied, "In order that man should perfect himself by the fulfillment of a divine command." To be born circumcised was the distinguishing mark of the most select saints—including Adam, "who was made in the image of God," Moses, who was chosen to be his lawgiver, and Zerubbabel, who led back the first band of returned exiles.

During the period of the Babylonian exile the strict observance of the Sabbath and the rigid attention to circumcision became the distinctive symbols of Judaism. The national appreciation of the sanctity of the "Seal of the Covenant" appears to have increased with every succeeding exile and persecution. The *Book of Jubilees* informs the reader that: "Whosoever is uncircumcised belongs to 'the sons of Belial,' to 'the children of doom and eternal perdition'; for all the angels of the Presence and of the Glorification have been so from the day of their creation, and God's anger will be kindled against the children of the covenant if they make the members of their body appear like those of the Gentiles, and they will be expelled and exterminated from the earth." (Charles's Version.) Still the Hellenistic movement among the Jews, which emanated from (Alexandrian) contact with Greek life and philosophy, produced a troublesome agitation in this connection. The games of the arena, which had at that date become so popular, exposed to general view the distinctive stamp of the Jewish youth. The public comment must have been decidedly unfavorable, as the affected gymnasts made the troublesome effort to appear like the Greeks by the adoption of "epispasm." Hence the mournful record (I Macchabees, I-16): "They made to themselves prepuces, and revolted from the holie testament, and were ioyned to the nations, and were solde to doe evil." (*Douay* Version, 10, which I quote as being more literal than others.)

An edict prohibiting the practice of circumcision was promulgated by Antiochus Epiphanes, but it was treated with scorn by the nationalist Jews. The Jewish women made an emphatic display of the obstinacy of their (sex and) race by circumcising their own sons, even at the risk of the lives of both. Rabbinical authorities taught with progressively increasing emphasis the inestimable sanctity and importance of the ritual operation. "He who destroys the covenant sign of Abraham (*i.e.* by epispasm) has no portion in the world to come." Esau neglected to practise the operation in his own household; *i.e.* "he despised his birthright." The tribe of Ephraim also failed in the observance; this criminal negligence caused Elijah to swear (I Kings, xvii. 1): "There shall not be dew or rain these years but according to my word." And as it was the hard lot of Elijah to be ever exposed to the persecutions of Jezebel, the Lord of Hosts swore that no *berit milah* (rite of circumcision) should thenceforth be celebrated in Israel without the presence of the great prophet, "the angel of the covenant." Hence the fact that a chair is always reserved for the prophet Elijah during the ceremony, whether in the synagogue or in the home. It was Shem who circumcised Abraham and Ishmael on the "Day of Atonement," and the blood of the covenant then shed is ever before God on that day to serve as an atoning power. Abraham sits at the gate of Gehenna to save his circumcised descendants. All the superhuman merits of Moses could not save him from the danger to which he was exposed by his neglect of this command. It need hardly be added that "the Sign of the Covenant," as well as the phylacteries, possessed unlimited talismanic powers. King David owed one of his innumerable hair-breath escapes to it; hence the inspiration of the XIIth Psalm, with its distinctive superscription, 'Al-ha Sheminit ("Upon the eighth," *i.e.* day). A rabbinical comment upon Jeremiah xxxi. 35 tells us that, "Circumcision is of such importance that heaven and earth are held only by the fulfilment of that covenant."

As proselytism was very actively promoted in opposition to the anti-national Hellenistic movement among the Jews, other aspects of the value of the ritual stamp of circumcision were brought into unwonted prominence, and schismatic difference of opinion was evolved which lasted for centuries. One party would admit a proselyte without other initiation than a purificative bath, the other insisted on the absolute necessity of circumcision. On the subject of a proselyte who had been born without a prepuce, a noisy controversy was maintained between the Shammaites and the Hillelites. The former insisted on drawing a drop of the "blood of the covenant" from a point on (what would have been) the line of normal incision; the latter declared that such procedure was entirely unnecessary. Similarly opposed views were maintained regarding the practice to be adopted on the admission to Judaism of members of other religions—Egyptians, Samaritans, etc.—who had previously undergone ritual circumcision. This question was, of course, frequently ventilated after the origin of Mohammedanism. The Palestinian Jews would only accept uncircumcised converts as "Proselytes of the Gate," and the rigor of the subsequent Roman wars and persecutions had the effect of turning the opinions of the previously Liberal (Hellenistic) members of Judaism towards the same doctrine and practice. Accordingly, we find Flavius Clemens (nephew of the Roman Emperor, Titus) undergoing circumcision on embracing the Jewish faith, for which he suffered the death penalty at the hands of his indignant compatriots. And, in a subsequent period of diminished racial animosity, we find the *Codex Justinianus* prohibiting physicians from carrying out the operation of circumcision on the persons of Roman converts to Judaism.

In the earlier centuries of the practice of Jewish circumcision, performed as it was with a crudely-edged piece of flint, and very often by the hand of the mother, the removal of the prepuce and exposure of the glans were very incompletely accomplished. Indeed, it appears that it was only after their terrible oppression by their Roman governors, and probably subsequent to their final desperate struggle for independence under Bar Kokba, that the rabbis definitely instituted the complete exposure of the glans as an essential part of the operation. Their fully-developed procedure, as is, of course, now well known to all readers, consists of three stages: (1) *milah,* in which the prepuce having been drawn through a narrow slit (with free opening at one end) in a metallic shield applied for the protection of the glans, is removed with a single sweep of the knife; (2) *per'ah,* in which the operating *mohel* seizes the preputial lining which remains in contact with the glans between the index finger and the thumb-nail of each hand, and tears it to an extent which allows the remnant of the prepuce to be rolled back so as to expose the glans freely; and (3) *mezizah,* in which the mohel takes some wine in his mouth and sucks the wound, ejecting the mixed blood and wine into a receptacle specially placed for the purpose; and, having repeated this process several times, thereby completes the operation. The control of hemorrhage and dressing of the wound are addenda. It is also well known that the recent teachings of antiseptic and aseptic surgery, and the unpleasant revelations of syphilitic infection communicated by the mouth of an operating mohel—Glassberg refers to one in Cracow who infected a large number of children in this manner—have led liberal-minded Jews during the past few years to advocate certain modifications, of which the nature is too obvious to call for discussion on the present occasion.

The terrible antagonism of the Jews and their Roman oppressors maintained an increasing horror among the rigidly orthodox of the former at the contemplation of the practice of the *epispasm* which had been induced by the more congenial contact of Alexandrian Greek and Jew. The symbolic significance of the rite must have been recognized many centuries before by the most thoughtful of the children of Israel, for the lawgiver in Deuteronomy (x, 16) directs his brethren in a spiritual sense: "Circumcise the foreskin of your heart," and nowhere prescribes the physical operation throughout the whole of that book; and Jeremiah (ix, 25-6), while pointing out that all the other nations are uncircumcised, mournfully announces that "the house of Israel are uncircumcised in heart." As Kohler points out, the prophetic view of the sacredness of the rite obviously differed from that of the people. The religious and intellectual collisions of Jews and Romans generated a large proportion of the high tidal wave currents of thought which did not cease to rise and flow till they had inundated the principal intellectual centers of the known world. The mutual mental contact and pressure of Jews and Greeks tended at that period to internal confusion among the former, rather than to external violence. The coincident series of successive events had among their manifold consequences that of transmitting the discussion of the religious values and symbolic significance of circumcision, epispasm, and baptism, from Jew and Gentile to the newly awakened Christian. The weapons thus

furnished to hand from the old armories formed some of the most trenchant and effective in the arsenal of St. Paul, who firmly substitutes the "seal of baptism" for the "seal of the covenant."

His principal epistles abound in arguments and statements regarding the value of circumcision. In the Epistle to the Romans we find the following (I quote the Rhemish version of 1582, which, being so exactly literal, conveys the sense of the original Greek far more forcibly than other English versions): "This blessednes then doth it abide in the circumcision, or in the prepuce also? For vve say that vnto Abraham faith vvas reputed to iustice. Hovv vvas it reputed? in circumcision, or in prepuce? Not in circumcision, but in prepuce. And he receiued the signe of circumcision, a seale of the iustice of the faith that is in prepuce: that he might be the father of al that beleeue by the prepuce, that vnto them also it may be reputed to iustice: and might be father of circumcision, not to them only that are of the circumcision, but to them also that followv the steppes of the faith that is in the prepuce of our father Abraham" (Rom. iv, 9-12). And in another epistle he counsels: "Is any man called being circumcised? Let him not procure prepuce." "Is any man called in prepuce? Let him not be circumcised. Circumcision is nothing, and prepuce is nothing; but the obseruation of the commaundements of God" (1 Corinthians, vii, 18-19). Again: "Neither circumcision auaileth ought, nor prepuce; but faith that vvorketh by charitie" (Galatians, v, 6). The general impression of the corresponding significance of the seal of baptism resulted; and St. Augustine definitely states the value of circumcision to infants as cleansing from "original sin": "Ex quò instituta est circumcisio in populo Dei quod erat tunc signaculum justitiæ fidei ad significationem purgationis valebat, et parvulis originalis veterisque peccati" (De Nuptiis et Concupiscentia, Lib. iv, Cap. 11). It is unnecessary to add that this authority carried with it those of a very large proportion of the subsequent luminaries of theology—from some of the most brilliant downwards to those forming the strata of lesser magnitudes. The famous "Magister Sententiarium" writes: "Fuit circumcisionis sacramentum idem conferens remedium contra peccatum, quod nunc baptismus præstat." St. Gregory the Great is an explicit exponent of the teaching of the great Bishop of Hippo on this head: "Quod apud nos valet gratia baptismatis, hoc egit apud veteres vel pro parvulis sola fides, vel pro majoribus virtus sacrificii, vel pro iis qui ex Abrahæ stirpe prodierunt mysterium circumcisionis."

St. Thomas Aquinas regarded it as a sacrament of the ancient law: "Quia in Abraham fides primò habuit quasi notabilem quantitatem, ut propter fidei religionem ab aliis separaretur; ileo ei signaculum, sive sacramentum fidei determinatum fuit, scilicet circumcisio." But he did not admit that it purified the individual from the stain of original sin. The sacramental function of circumcision is, of course, quite irreconcilable with Jewish theology, and is utterly rejected by the rabbinical authorities.

A glance at the various contradictory views which have been maintained by "authorities" of high standing on the subject of the possible physical success of the epispasm reveals an interesting vista in the very tangled forest growth of both physical and theological opinion. The references of St. Paul and of the writer of the Books of the Macchabees seem to show that they regarded the restoration of a prepuce as *un fait accompli*. St. Jerome—who is followed by Rupert and by Haimon—absolutely denies the possibility of obliterating the mark of circumcision. The learned and saintly editor of the "Vulgate" version of the Holy Scriptures adopted the view that the author of the Macchabees referred to the practice of the Jewish parents who did not wish to have their infants subjected to the operation of circumcision, and offered what many have professed to regard as a forced metaphoric explanation of the allusion of St. Paul to the—then obviously familiar—practice. Indeed, the dogmatically emphatic denial by St. Jerome of the possibility of restoration of an amputated prepuce displays a germanic resemblance to the thesis of the same Father, in which he undertakes to prove that it was not in the power of the Omnipotent Creator himself to restore a lost virginity. However, even in the olden times, it was admitted by the Fathers of Medicine, that the uncircumcised condition could be successfully simulated; and, of course, having regard to the almost unlimited extensibility of the skin when exposed to gradual traction, it must now be admitted that the reformation of a prepuce would be merely an expenditure of time and trouble. Celsus, Galen, Paulus Ægineta, and many others recognize the possibility—and very fully discuss the associated questions; in more recent times, Fallopius and Bartholin recognized the successful practice; and—more significant still—the Jewish scholar, Buxtorf the younger, furnished the latter with the most definite affirmative testimony derived from the observations and practice of his Hebrew compatriots. It may be of interest to note in this connection that in those older centuries the (simulated) restoration of a missing virginity was a frequent—and sometimes an exceedingly lucrative—function of the witch, the alchymist, the herbalist, the skilled midwife, and even the surgeon of widest reputation—especially if connected with aristocratic and courtly practice. Readers of Arnaldus de Villanova will remember his very careful instructions for the attainment of that desirable consummation; and that trusted medical adviser of Popes, Emperors, Kings, and other contemporary potentates, was a leading representative of the practice of the members of lesser magnitude and brilliancy who formed the professional host of his day.

The fact that circumcision of females is extensively practised among some of the tribes who habitually amputate the masculine prepuce, even in the present day; and that where both sexes are thus treated, the time of election is the approach of the dawn of puberty, argues strongly in favor of the view that the operation was originally adopted by such people as a part of the general ceremony of preparation for marriage, and for the duties—including the pains and the dangers—of mature life. The practice prevails very extensively within the broad subtropical zone which includes the Red Sea and the adjacent countries, Arabia, Upper Egypt, Abyssinia, Sudan, etc. It is a curious fact in the history of the evolution of theological doctrine that the opinion advanced by St. Augustine of the efficacy of the Jewish circumcision in the removal of original sin was strongly opposed to that of a large proportion of the Christian Fathers, both before and after the enunciation of his views. Tertullian very plainly demands: "Si circumcisio purgat hominem, Deus

Adam incircumcisum cum faceret, cur eum non circumcidit; vel postquam deliquit, si purgat circumcisio?" And a later argument, which was very strongly pressed against the view promulgated by the great Bishop of Hippo, was that: As the original sin was common to both sexes, it would not have been compatible with either the wisdom or the goodness of God to deprive the female sex of the remedy which he had placed within so easy reach of the male. Some of them, therefore, would seem to have not been aware of any extensive adoption of female circumcision, although St. Ambrose refers to the Egyptian custom of circumcising the youth of both sexes—in the fifteenth year. Paulus Jovius, and Munster refer to the practice of such ceremonial operation by the subjects of Prester John (Abysinnia), but state that it was a special stamp of the highest nobility—the privilege only of those who could prove direct descent from Nicaulis, Queen of Sheba, as the fruitful result of her patriotic and purposeful visit to the all-wise monarch of Israel; whose representation in the direct line of male descent is proudly claimed in our own generation by Menelik, the present reigning monarch. With this reference to the oldest, and otherwise most unique, of existing royal pedigrees, I drop the curtain on my crude panoramic sketch of the theory and practice of circumcision.

SOME CLINICAL OBSERVATIONS ON SALPINGITIS AND PARAMETRITIS IN NULLIPARÆ.

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Salpingitis is an inflammation of part or all of the Fallopian tube. We distinguish three degrees of salpingitis: (1) A mild form scarcely to be recognized, which involves the ciliated epithelium and to some extent the mucous membrane. (2) Involvement of the mucous membrane. (3) An interstitial form which involves also the muscular wall and which thickens the tube. The third form is generally associated with more or less adhesions having a tendency to close the outer end of the tube. Cases beyond these grades are to be considered as hydrosalpinx or pyosalpinx. The same variations in the degree of inflammation are to be noted in salpingitis as are observed in appendicitis. Restoration to the normal, or so nearly to the normal as to present almost no microscopic evidences, occurs in salpingitis as in appendicitis. Restoration to the normal in salpingitis, however, is a process which takes months or years, as can be readily appreciated when we consider the bacteria which are present in this inflammation.

It is first important to recognize the fact that an injury, even extensive in its nature, may be present in one tube without an involvement of the tube of the other side, or else there may be an involvement of the other side of a much slighter degree, or an involvement which can scarcely be recognized. This association of widely divergent degrees of inflammation may be present even with a pyosalpinx.

The elements of infection may enter the tube through the blood channel (tuberculosis), through the abdominal cavity (tuberculosis, septic parametritis, septic peritonitis, appendicitis), or in the form of an ascending infection from the cervix, either directly through the uterus into the tubes or through the lymphatics of the broad ligament into the tubes. While it is true that the exanthemata produce, far more frequently than is recognized, permanent harmful changes in the ovaries, and either primary or secondary changes in the uterus and tubes, yet the causation in the majority of cases of tubal disease is to be referred to the bacteria generally found in the diseases of the urinary and genital tract.

The bacteria most frequently encountered are the tubercle bacillus, colon bacillus, streptococcus, staphylococcus, anäerobic bacteria, and the gonococcus. Infection may occur in children, in nulliparæ or in multiparæ. The seat of the primary infection is in most cases the cervix, or the cervix and uterus, extending then at various times and in various degrees of severity into one or both tubes, or first into one and then into the other, or into one tube and through the abdominal cavity into the other. The cause of salpingitis in nulliparous women may be infection without or with intrauterine manipulation. With intrauterine manipulation in addition to infection there may be an injury to the tube as a result of intrauterine injections which, not rarely, find their way into the tubal lumen. The cause of salpingitis in nulliparous women without intrauterine manipulation is in most cases a latent unrecognized gonorrhea existing in the form of an endocervicitis or an endometritis.

The generally accepted picture of gonorrheal infection in the female represents a virulent infection of the urethra, a virulent Bartholinitis, a virulent vaginal discharge, a virulent endocervicitis, endometritis, pyosalpinx, or peritonitis in the secretion of which conditions the gonococci can be readily found. To illustrate the peculiarities of such acute inflammations due to virulent gonococci it is only necessary to note the fact that a gonorrheal urethritis does not necessarily mean a complicating Bartholinitis, nor does a Bartholinitis necessarily mean a complicating urethritis or rapid extension into the uterus or tubes or peritoneum. The cervix, or cervix and uterus are the most frequent seats of the acute infections and often, too, without an accompanying urethritis or Bartholinitis. It is marvelous that these internal conditions may exist without accompanying external involvement and vice versa. (Cases I, II, III.) It is this *acute* inflammation, however, which leads, often rather early, to large accumulations of pus in one tube or both; but this involvement of the tubes frequently results only after a fair lapse of time and is favored by injuries due to work, overactivity, intercourse, abortion, curetting, and other disturbances.

When this condition, originally acute, exists in nulliparæ and is continued on into pregnancy, it is then that abortion, labor, or curettings may produce a new development which is acute in all of its manifestations, leading on to virulent accumulations in the tubes, peritoneum, or pelvic connective tissue. On the other hand, these local acute conditions may be cured to all intents and purposes, and months or years afterward an extension upward may take place, which extension is not necessarily acute in its character. The bacteria may have lost their virulence, the patient's tissues have grown somewhat accustomed to the cocci, have become more or less immune, and any new involvement may take on the character and nature of a subacute inflammation. (Case IV.)

Quite another picture is produced by an infection in the female due to a gonorrhea in the male supposedly cured or showing only elements

generally not recognized as infectious because the gonococci are not to be found by the microscope. Such an infection very rarely produces the purulent urethritis, Bartholinitis, endocervicitis, etc., mentioned above. *It produces a catarrhal infection of the cervix with or without erosions.* This infection may remain localized or may extend upward. It produces at first few or slight symptoms aside from the leucorrhea, in which discharge, because of the mucous character and destructive action of the secretion, it is almost impossible to find gonococci by the microscope. This infection may make its way through the cervix into the pelvic cellular connective tissue, producing the condition known as parametritis, especially the form known as posterior parametritis. It may also extend upward into the uterus and then further on into the tubes and into the peritoneum. In nulliparous women so infected we may have, then, either a parametritis, a salpingitis, an oophoritis or a peritonitis, producing in some individuals few symptoms, in others symptoms of a marked character. This, in my opinion, is the etiology of the majority of cases of salpingitis. In these cases of cervical or uterine localization, curetting, pregnancy, abortion, labor, excessive coitus are the elements which favor either an extension upward or subacute recrudescences of the lesions, but they never reach the degree of severity observed after infections by virulent gonococci. The gonococci in these cases are totally different in their behavior from the cocci given off during or soon after acute infection in the male. This etiology explains numerous cases of sterility, abortion, pelvic pain, ectopic gestation, cystic ovaries, etc.

If we concern ourselves now mainly with the question of salpingitis, let us consider the factors on the basis of which we attribute to the gonococcus the etiology of most of these instances, for in the woman who has aborted or in the multiparous woman there is always the implied possibility of infection by other bacteria.

Even in puerperal women free of fever, a certain though small percentage show in the lochia streptococci, staphylococci, gonococci, and bacteria. In 296 puerperal women *with* temperature Krönig found *gonorrheal endometritis* in 31. According to Krönig, examinations of puerperal endometritis shows the relative proportions of the various infecting bacteria to be 2 per cent. staphylococci, 27 per cent. saphrophytes, *27 per cent. gonococci*, and 43 per cent. streptococci. Most of the fatal cases are due to streptococci. The sequelæ, then, of puerperal infections can be easily understood.

Wertheim, among others, proved the gonococcus to be the most frequent cause of purulent salpingitis. In many of his cases of ascending gonorrhea in the female the tubal pus was sterile. In some the staining of sections showed gonococci in the tissues, but the pus and tissues of most cases of pyosalpinx at the time of operation are free of bacteria. Besides, in long-standing cases evidences which tend to distinguish between gonorrheal and septic disease disappear. If in such conditions the bacteria and gonococci are so often not to be found, and when present are so hard to find, how can we expect better or as good results in the way of ocular proof in those cases which from the beginning are less virulent or subacute or unrecognized.

We have in several instances observed the mild further course of an originally acute gonorrheal infection in the female in which the gonococci were readily found. Appropriate treatment produced amelioration of the acute condition, and careful attention has often prevented, so far as observation extended, an acute invasion upward of a virulent nature. At various periods, however, an extension, through the lymphatics or in continuity, of a mild form has been observed affecting the parametrium, the tube on one side or both tubes with or without marked involvement of the peritoneum. When such cases come to operation the gonococcus is not to be found, but the nature of the lesion is quite different from the picture associated with a pyosalpinx. We do not have the accumulation of pus nor the hard dense adhesions, nor the thickening and swelling of the broad ligaments. If, in other cases, like lesions are found in patients in whom personal examination was not made during the acute stage, but who give a history of acute infections, there is no reason why the same etiology should not be considered. (Cases V, VI, VII, VIII, IX.)

When, however, instances of like tubal lesions are found in patients who give no history of an acute infection, it is difficult to expect a general acceptation of the same etiology, though why this should be so it is hard to understand. It is by no means essential that subacute infection of the cervix or uterus should extend into the tubes, for this does not necessarily occur with acute conditions. But, when the tubal lesions resulting from cases of catarrhal endocervicitis or endometritis are like those observed after mild tubal infections subsequent to an originally acute infection, the conclusion is that the etiology is the same. (Cases X, XI, XII, XIII.)

The gonococcus needs no wound or injury in the tissues to aid in the penetration into subepithelial tissues or to aid in an extension in continuity. While a goodly proportion of women acquire the ascending lesions subsequent to operations, labor, abortions, or *curettings*, this extension does occur without these predisposing causes. Only in this way can we explain the etiology of the various forms of salpingitis occurring in nulliparous women, especially in those who have never been curetted. In this way we explain the complicating symptoms and annoyances resulting in many instances in primary sterility. It is surprising how frequently a parametritis is found existing with a tuboovarian or peritoneal lesion, and this condition is an important index to the subacute etiology. These mild infections are responsible for many cases of so-called small or large cystic degenerations of the ovary. It is the cervical and uterine site of this inflammation which explains an extension to a tube or ovary after the other tube or ovary has been removed, for we have no means of definitely deciding at operation whether the infecting cocci have lost their power or have disappeared.

From the cervix at the level of the internal os extend the six ligaments composed of peritoneum and filled with connective tissue, lymphatics, blood-vessels, etc., *i. e.* the two broad ligaments, the uterosacral, and the uterovesical. Infections after labor or abortion frequently invade the broad ligament because of the lateral lacerations of the cervix. They frequently invade the uterosacral ligaments after labor or abortion. After abortion and without this condition pus may accumulate in the posterior parametrium with or without pus tubes. In nulliparæ and multiparæ a chronic, slowly progressive but decided invasion of the uterosacral ligaments, and of the posterior parametrium especially, is quite frequent. I know of no other local pelvic condition which is more frequently overlooked. What is its etiology in nulliparæ? This involvement is often combined with salpingitis. Annoyances of urination depending on

slight or unrecognized urethritis, urethrocystitis, or cystitis are very often combined with these lesions, and in numerous cases the history shows that the leucorrhea, the bladder annoyances, the backache, and the pain came on in close succession, just as they may do with an acute gonorrheal infection.

The examination of the seminal secretion is not always possible, in fact, it is only possible in rare instances. We have to rely for a logical conclusion on the association of symptoms and our knowledge of the fact that gonorrhea even when supposedly cured may still supply cocci capable of infection.

Innumerable cases could be quoted of like conditions occurring in women who have been curetted or have aborted or have gone through labor, but I have mainly selected cases, which I have observed, in whom no abortions or careless curettings could justify the suggestion of an infection by other organisms than the gonococci.

A few words about ectopic gestation. Abel in his "Gynecological Diagnosis" attributes to affections of the mucous membrane the etiology of many cases of ectopic gestation.

In the *Medical News*, March 14, 1903, my views as to the causation are expressed as follows: "I believe that in the so-called sterile period gonorrheal, puerperal, tubercular, and atrophic changes take place. The interval of years between the last labor and the ectopic gestation, the fact that the location is generally in the middle area of the tube, the occurrence of an ectopic gestation on both sides at the same time, and the frequency of external migration, together with the combination of extra- and intrauterine gestation point certainly to an affection of one tube and probably, but to a lesser degree, of the other tube. The frequency with which, according to Kustner, a hemorrhagic tendency of the nonpregnant side occurs, as well as the microscopic discovery of catarrhal conditions, together with the history and the microscopical evidences of the presence of gonococci, point distinctly to a tubal affection. The observation of Dührssen, who found cilia abdominal to the placental site and none median to it, and Veit's observation of the presence of inflammation median to the ovum, as well as the theory of congenital and acquired atrophy of the tube, especially subsequent to labor, lead us at the present day to seek in the microscopical changes of the tubal mucosa, i.e. injury to the cilia, the etiological factor in tubal gestation." Subsequent observation has still more surely confirmed my opinion.

That salpingitis is certainly the etiological factor in the production of some cases of ectopic gestation, I well illustrated by the Cases XIV, XV, XVI.

The purpose of quoting these observations on ectopic gestation is this: There is certainly some obstruction in the tube which prevents the ovum from entering the uterus. This obstruction is either an inactivity on the part of the ciliated epithelium as a result of inflammation, or else adhesions of the tubal mucosa. The ovum is arrested in its progress toward the uterus. Such a salpingitis, whether in an early stage and slight, or in a late stage and nearly healed, must certainly be fairly normal in its outer end to permit the ovum to be taken up into the tube, and yet, to the eye at least, these tubes do not appear markedly affected. When, on the other hand, we find in so many of these cases the other tube affected to the degree mentioned below, it simply represents the same variation in the degree of severity of the affection of the two tubes as are observed in most of the cases of salpingitis and even of pyosalpinx.

Now most cases occur in multiparæ, yet a certain proportion do occur in nulliparæ. I consider uterine or ectopic gestation, after long periods of non-artificial sterility and after conservative operations, in most instances an evidence that restoration to the normal has taken place in the tubes in whole or in part. I consider ectopic gestation as an evidence that either a tube is beginning to be affected or that it is almost restored to the normal.

It is impossible, of course, to make an unanswerable assertion regarding the etiology of salpingitis by gonococci diminished in virulence, when the same cannot be shown by the microscope or by cultures. We can only say that even in undoubted cases of acute gonorrhea, after the lapse of several weeks or months, gonococci can no longer be found in the secretions or pus accumulations. It is not so long ago that the vast majority of cases of pyosalpinx were referred to sepsis (streptococci or staphylococci) post-partum or after abortion or curetting. Though pyosalpinx certainly may be caused by other bacteria, and though probably two per cent of the cases are due to *B. tuberculosis*, it is now quite generally recognized that the majority of these cases are due to gonorrheal infection and yet, in innumerable instances, the gonococci cannot be found. They die easily, are destroyed by their own toxins, especially if in association with other bacteria. It is recognized that the gonococci in pyosalpinx either lose their virulence or disappear after a certain period of time. Yet they have been found in the tube wall when not present in the purulent accumulation. In puerperal cases gonococci are often found in the lochia, when not found before, and readily disappear so far as examination by the microscope is concerned. The fact that they are not to be found is no proof of their absence. The staining for the gonococcus in tissues is not an easy procedure, and a great tax on time, and we have to content ourselves in a study of these cases with a comparison of the ultimate lesions resulting after subacute infections with those found after some of the primarily acute infections, and when the two are alike the conclusion is logical. When, in addition, we find these cases so frequently in nulliparæ, when we find that aseptic curettings are so frequently followed by involvements outside of the uterus, it is difficult to attribute to any other infecting media the etiology of most cases of salpingitis.

The crux of the whole problem is supplied by the studies of gonorrheal infections in the male. We know of the discussions, as yet by no means difinitely settled, regarding the curability or noncurability of this disease when it once involves the posterior urethra of the male. Suffice it to say that not rarely in cases in which the microscope shows nothing, examinations (by cultures, etc.) of the prostatic secretions or of the urine, etc., show that gonococci may be present even when almost no symptoms or signs are to be noted. In this connection I wish to state that we need by no means accept as certain the statement that posterior urethritis in the male cannot be cured; I am firmly convinced, however, that in a very goodly proportion of cases it is only supposedly cured. I desire in this connection, to refer to the views of Lapowski and Morrow on this question, and to state that since I have paid attention to their opinions on this matter, I have reason to believe even still more firmly and absolutely that the majority of cases of

salpingitis, no matter when they occur, are to be attributed to the gonococcus as the causative factor

The following cases, from a very large number, have been selected as illustrating the varying degrees of infection. In no instance in which the husband could be questioned or examined has the question of etiology failed of confirmation, as the histories of cases VI, VIa, VII, IX, X, XI, and XII show.

Case I.—Mrs M., came to me suffering from metrorrhagia and marked pain in the left side. There was a mass the size of a hen's egg formed by the left tube and the diagnosis rested, between a pyosalpinx and a tubal gestation. There was no Bartholinitis, no urethritis and very little temperature. Operation divulged a left-sided pus tube in which the gonococci were readily found. Bichloride douches were given subsequently, and examination of the cervical secretion three months later showed no gonococci by the microscope. That they were and are present in the cervix and uterus is probably not to be doubted.

Case II.—Mrs. P., forty-five years old, married twenty-five years, the mother of seven children. For the first time, and that just a few weeks before the date of this case, her husband acquired a gonorrhea, of which he was supposedly cured. The wife then complained of pain in the left side, and her physician sent her to me. Examination showed a decidedly inflamed and sensitive left tube twice the diameter of the thumb. The patient was put to bed and subsequently continued her bichloride douches, since which time she has complained of no annoyance whatsoever.

Case III.—Mrs. M., married four years. Her husband two years after marriage acquired an acute gonorrhea, the wife then acquiring an acute urethritis and cystitis, for which she was treated by me for six weeks. Bichloride douches were given and at no time subsequently was I able to find gonococci in the cervical secretion. The patient since then has been operated on vaginally by me for an ovarian dermoid, subsequent to which she went through a normal pregnancy without any evidence of tubal or peritoneal involvement.

Case IV.—Mrs. B. came complaining of a vulvar irritation, and expressed the opinion that she had been infected by her husband who, since their marriage, had acquired "a disease." Examination revealed a left Bartholinitis and a marked vaginal discharge, in both of which gonococci were found. The abscess was opened and drained and bichloride douches were ordered. After a period of six weeks no gonococci could be found in the microscopical examination of the cervical secretion. Four months later the patient appeared with a left-sided salpingitis and markedly tender and infiltrated left broad ligament.

Case V.—Mrs. L., twenty-five years of age, 0-para, married two years. Five weeks after her marriage she was in bed for three months with what she called "an inflammation of the womb." Since then she has been troubled with backache, marked abdominal pain, and leucorrhea. Examination showed a pyosalpinx of the right side and a salpingo-oophoritis of the left side. Operation consisted in a double salpingo-oophorectomy. No gonococci could be found in the tubes.

Have not been able to communicate with her husband.

Case VI.—Mrs. S., twenty years of age, 0-para. Six months after marriage complained of pain on both sides. Examination showed a salpingo-oophoritis of the right and left side with adhesions. Treatment failing to relieve annoying symptoms, patient was operated on by me and two tubes the size of a lead-pencil with both outer ends closed were removed. Examination of the tube-contents by the microscope did not show gonococci. On subsequent inquiry the patient said that she was treated six months after marriage for gonorrheal infection and for gonorrheal vulvar warts. The husband gives the following history:

He suffered from gonorrhea six years ago, the attack lasting five months. He married four years ago and his wife had a child. His wife died shortly after childbirth. In June he had a second attack of gonorrhea, which lasted three months. He married for the second time in November, 1904. He noticed a colorless discharge in the morning of a stringy character which persisted for one month after marriage.

Case VIa.—Mrs. MacF., twenty-four years of age, married two years, one abortion at the second month. Two months later she underwent an abdominal operation. She then "acquired a disease from her husband." Six months after the first operation a second operation was performed. Six months later she came under observation suffering from marked pelvic pain. I removed the inflamed adnexa (cystic ovary of one side and closed thickened tube of the other side) remaining after the previous conservative operations. Her husband's history is as follows:

He is twenty-seven years old. Seven years ago acquired a gonorrhea lasting two months. Two or three years ago he had a second infection lasting, off and on, for one year. In the first attack he suffered from a double orchitis.

Case VII.—Mrs. J., thirty-two years of age, married ten years, 1-para nine years ago. Six months ago complained of pain in the back and decided pain in the left side. She suffered then from a marked bloody discharge for several days, this occurring two weeks before entering the hospital. Diagnosis, salpingo-oophoritis duplex. Operation, double salpingo-oophorectomy. Diagnosis of etiology was gonorrhea but no cocci could be found. Examination after operation showed a persisting posterior parametritis, but the patient feels absolutely well. The husband gave me the following history:

He is thirty-four years old, a veteran of the Spanish-American War. He had gonorrhea twelve years ago, which lasted one year, during which he had an orchitis, and his inguinal glands were incised. He also suffered from inflammation of the bladder and a subsequent persistent stringy mucous discharge. This trouble came back in slight fashion soon after marriage and lasted about three weeks. Five years ago, while serving on one of the battleships, he acquired a new attack of gonorrhea, which lasted two and one-half months. He returned home one year ago with a mucous discharge. Six months ago the symptoms of Mrs. J. began.

Case VIII.—Mrs. R., thirty-two years of age, 1-para fourteen years ago. Patient came complaining of a right-sided pain, and examination showed a salpingo-oophoritis dextra. At operation an adherent and thickened tube and ovary were removed, the other tube and ovary, appearing normal, were left in place.

On questioning the patient subsequent to the operation she stated that she believed herself to have been infected by her husband a short time after the birth of her child, because of which fact she had been separated from him for years. Subsequent to the operation the patient has married

again on securing a divorce from her first husband. Three months after marriage she comes complaining of the same pain on the other side, and examination shows an inflamed tube and ovary of that side.

Case IX.—Mrs. C., twenty-eight years of age, o-para. One year ago complained of pain on the left side, which came on suddenly and was diagnosed by her physician as abscess of the left ovary. She was in bed for ten days with fever. She now has a dull steady pain in the same spot, extremely painful when on her feet or walking. Examination showed a slight erosion of the cervix, the fundus markedly drawn to the right side, a decided parametritis dextra. The right adnexa seemed apparently normal, but those on the left side are prolapsed, sensitive, and adherent. Diagnosis was made of probable gonorrheal infection. This diagnosis was sent to her physician, and he was asked to interview the husband.

Husband states that he had gonorrhea ten years ago; married one year later. One year ago he was treated by a physician for a profuse typical discharge, which date, according to his statement, was about four months after his wife had acquired pelvic inflammation.

Case X.—Ida M., twenty years old, married three years, o-para. One year ago the patient complained of pain on the right side. Examination showed a right-sided salpingo-oophoritis. These enlarged and adherent adnexa were removed by me. Three months after the operation the patient complained of pain on the left side. Both her physician and I now find a left-sided salpingo-oophoritis. Her physician states that the husband was treated by him four years ago for a gonorrhea which lasted eight weeks.

Case XI.—Mrs. J., married three years and sterile. Two and one-half years ago, after some intercurrent illness she developed a mild leucorrhea and acquired marked pain on both sides, particularly on the left. Examination showed a double-sided salpingo-oophoritis with peritoneal adhesions. Examination of the spermatic fluid showed active spermatozoa but a fair number of pus cells.

On interviewing her husband, he stated that subsequent to his marriage he was treated for a newly-acquired gonorrhea of a mild nature.

Case XII.—Mrs. A. L., o-para. Treated for some time for double salpingo-oophoritis. Operation refused. Examination of the spermatic fluid shows inactive spermatozoa and large numbers of pus cells.

Case XIII.—Mrs. F., thirty-two years old, married eight years, o-para. Had a "sore on the womb," and was operated on for this eight months after marriage. Leucorrhea and frequent micturition since marriage. Complains of marked pain on both sides, particularly on the left. Examination shows parametritis dextra and sinistra and salpingo-oophoritis of both sides. Was curetted two years ago. Have been unable to interview her husband.

Case XIV.—Mrs. L., thirty years of age, operated on by me for ectopic gestation of the left side. The right tube was thickened and inflamed and the ovary of that side was cystic. They were also removed.

Case XV.—Mrs. K., forty-four years of age, ectopic gestation of the right side removed by me. Left tube and ovary were markedly involved by adhesions and were also removed.

Case XVI.—Mrs. P., twenty-seven years of age, ectopic tube of the left side removed. The right tube was thickened and swollen, and the outer end closed by adhesions. This tube was also removed.

Conclusions.—(1) Virulent gonorrhea in the female results from infection by an acute or persisting or recent gonorrhea in the male. (2) The majority of pyosalpinges are to be attributed to the gonococcus of this class. (3) Less-virulent gonococci from old cases, in which examinations by microscope show pus cells, etc., but no gonococci, or from supposedly cured gonorrheas, produce a subacute and scarcely recognized infection of the cervix. (4) Reinfection, labor, abortion, pregnancy, *curettings*, produce a recrudescence of the lesions, varying in severity according to the character of the original infecting cocci, and in proportion to the resistance of the tissues. (5) Pregnancy, abortion, labor, *curettings*, favor extension in continuity in many cases of "catarrhal infection" of the cervix and uterus. (6) The majority of cases of chronic non-purulent parametritis and salpingitis are due to gonococci of a less virulent character. (7) Many cases of cystic ovaries tuboovarian cysts, perioophoritis and peritoneal adhesions, are due to such a salpingitis. (8) Numerous cases of pelvic pain, many cases of sterility, and many cases of ectopic gestation are the result of such forms of salpingitis. (9) Milder degrees of salpingitis do not necessarily cause much pain or discomfort. (10) If the tubercle bacillus, non-virulent streptococci and staphylococci, etc., may produce a mild salpingitis, then in nulliparæ the source of the two later forms of cocci may be a urethritis or prostatitis originally gonorrheal. (11) Since the gonococci are in the cervix and uterus, conservative operations always include the possibility of subsequent further invasions of the structures left behind. (12) Since parametritis so often exists alone and so often complicates salpingitis, operations on the adnexa cannot possibly free all patients of their annoying symptoms without due attention to this condition either before or subsequent to operative interference.

While correcting the proofs for this article there were published two papers worthy of close inspection, and bearing directly on the subject matter of this article.

In the Transactions of the New York Obstetrical Society, reported in the February number of the *American Journal of Obstetrics*, Dr. William S. Stone reported seventeen cases, which were studied in the wards of the Lying-In Hospital in 1904, and were collected from 172 cases of pregnancy. Only selected cases were examined for the gonococcus, and in suspicious cases repeated examinations were made until positive or negative results could be obtained. In these seventeen cases gonococci were found. All of these seventeen patients were primiparæ, although a certain number of multiparæ were delivered in the clinic. The tendency of the disease to spread upward and involve the tubes was believed to account for this disproportion. One child sterility was thus caused, as the report states, by gonorrheal disease.

Under the title of "The Sharp Curette Within the Uterus," Byron Robinson expresses the following views in the *New York Medical Journal*, January 20, 1906: "It is cruel because it inflicts untold damage and misery on the genital tract and adjacent pelvic structures as well as causing numerous deaths without accomplishing relative benefit. The endometrium sits directly on the myometrium with no intervening submucosa to check endometrial infectious invasion, hence uterine curettage is practically dangerous, first and foremost because it produces wounds, atria

for infection in a spongy lymph-bed, susceptible to invasion and germ culture. Curettage is the direct cause of vast numbers of subjects possessing chronic metritis, salpingitis, and pelvic peritoneal exudates, necessitating long suffering, sterility, or removal of the uterus or oviduct. Uterine curettage for sterility is irrational as it is unsuccessful and dangerous, for frequently one observes the condition of the patient is worse some months after the operation. The existing pathological conditions are exacerbated. The indiscriminate use of the curette has been the cause of perhaps more misery than any other factor in gynecology, and not a few deaths. In curettage, dilatation of the uterus is generally a preliminary operation, and the dilator produces hundreds of wounds, atria for infection, not only in the endometrium, but also in the myometrium. Few uteri can be dilated without causing laceration, new wounds for infectious invasion. The sharp curette is the most dangerous and cruel of gynecological instruments. It is cruel, because it inflicts untold suffering. It is dangerous, because it inflicts on the adjacent and genital visceral tract acute and chronic disease with sterility and occasional death."

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IONIZATION BY MEANS OF THE HIGH FREQUENCY CURRENT IN THE TREATMENT OF TUBERCULOSIS.

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As an introduction to my description of the plan pursued by me in the treatment of tuberculosis during the past two years, I would like to say that evidence seems conclusive that the disease is of bacterial origin, and the readiness with which these cells lodge and multiply varies greatly. Indeed, the number of instances in which they fail to take root and grow vastly exceeds those in which they do. The cause of the difference in individual susceptibility has an important bearing upon the treatment. In a state of health nature seems to furnish in nonsusceptible cases protective proteids, found in the blood plasma called alexins. Besides these, we find according to the laws of Dalton in regard to the absorption of gases by liquids, "the blood plasma holding oxygen in solution and the hemoglobin which by actual weight makes 90 per cent. of the dried corpuscles entering into partial combination with oxygen. The oxygen in the hemoglobin is in such a loosely combined state that it readily solves its bonds of union and, under the slightest provocation, goes over to other elements, for which it has affinity, as soon as the pressure conditions of the plasma are changed." This affords, together with the phagocytosis taking place upon an invasion of bacteria, all the protection required. This I will refer to later also as an illustration of the union taking place between atoms of matter and electrical units.

In susceptible cases we find the phagocyte unable to cope with its enemy, the bacillus, and after absorption digestion fails to take place. The germs multiplying within the phagocyte, and by overcrowding produce its destruction, thus indicating that in nonsusceptible cases the bacilli are destroyed so far as multiplication is concerned before being absorbed by the phagocyte. This leads to the discussion of the question of the introduction of a substance into the blood plasma having a special affinity for the tubercle bacilli, taking the place of the alexins where they are wanting, thus giving nature a chance through phagocytosis to eradicate the disease. This might be easy if it were not for the fact that the bacillus being an irritant, upon its gaining access the same response occurs to it as to other irritants. The wandering leucocytes flow from the adjacent cells which constitute the bulk of the tubercle, the reticulum of connective tissue is formed just as is connective tissue in ordinary nonspecific inflammation by the fibrillation of the protoplasm of cells and the rarefaction of the resulting matrix, thus making an impenetrable wall beyond which no circulation takes place. If by any means this passage could be cleared and this wall cut down the great obstacles to our success would be overcome. It is on this account that I first attempted through the medium of high frequency currents to effect a penetration of this wall. These currents, possessing as they do qualities of high potential, extreme voltage and rapid interruption make them suitable currents on account of their great penetrating qualities. Acting as they do as a stimulant to the circulation, or perhaps more correctly stated, equalizing circulation, they tend to relieve congestive action, thereby producing rapid absorption and elimination, rapidly stimulating the production of leucocytes as well as the red cells, they would not only furnish an increased army to combat their enemy, but by absorption would rapidly break down the barriers or breastworks of their enemy. Added to this, the current stimulating as it does cell growth, overstimulates the bacilli, and by their overproduction in their narrow quarters they become attenuated both in size and vitality. The current of electricity to be used should under no circumstances be one lacking in pressure, nor should it be allowed to be too general in its action, but should be focused or centralized as much as possible to the infected area. According to Kinraide, and as has been verified by Mr. Wilkinson in recent experimentation, "When electric energy changes from a condition of diffusion to a center of focalization it is passing through its negative phase; when it changes from a condition of focalization to a condition of diffusion it is passing through its positive phase. These two conditions may be correctly termed the anodus—or going in—and the exodus—or going out—of electric energy. Electricity is not a dual force with a dual activity, but a single force with a single line of direction for the sweep of its energy; furthermore, the positive and negative phenomena indicate the one, an accumulation or heaping up of electric energy, the other a corresponding withdrawal." In these treatments the body represents the condensor, and the concentrated or accumulated electricity from the negative side of the machine is discharged into it, and each interrupted discharge produces a certain amount of electric entity, which entity has a birth, a growth, and a death or dispersion. This entity, or union of the positive and negative quantity, has a center or body which is neither positive nor negative in character, and represents the dynamic phase of electricity. It is at this point of each electrical discharge I claim atoms of matter will unite with surplus electrical units, not forming new compounds, but in the same manner that the hemoglobin holds its surplus oxygen. The atoms of matter having polarity in the presence of electrical units that are nonrepelling, lacking either positive or negative force, would tend to attach these units to themselves by a feeble bond and travel together until the atom of matter was brought in contact with a substance for which it had an affinity, when it would

drop its surplus electrical units and form a more stable union.

The form of electrode I think is of great importance. I use a vacuum tube for surface application, and instead of having a flat surface have it concave on the bottom, with a wire extending lengthwise through the tube, and a large disc made concave on the under surface to correspond in shape with the bottom of the glass electrode and suspended about one-half inch from it. By the application of the high frequency current the superficial circulatory apparatus becomes greatly engorged and the patient breaks out in profuse perspiration. This drainage changes the specific gravity of the blood plasma. With this change in specific gravity there should be a rapid absorption of the gases retained under the vacuum electrode. By this means I endeavor to introduce substances into the circulation to take the place of the alexins where they are wanting. To focalize a current when treating the chest, I cover the back with tinfoil connected to a chain which is grounded, and reverse this when treating the back. The machine used is a Van Houten & Ten Broeck static machine connected with a resonator, devised by Dr. William J. Morton and constructed by Mr. Wilkinson of the before-mentioned firm. This gives me a current of from 250 to 500 milliamperes and about a million and one-half volts. The superiority of the current is in its great pressure, and one does not get the irritating effects upon the skin that are found in using coils such as I have tried. The pressure of the current should be such that when it is allowed to discharge before a fluoroscope the sensitive screen on the opposite side of the pasteboard from the discharge and within the fluoroscope will fluoresce.

The question of the penetration of these currents I think it unnecessary to dwell upon, as the facts are too well established to need further comment. The evidence of the penetration of the gases generated by this current is in the fact that the patient detects the taste in what is coughed up and expectorated for from twelve to twenty-four hours following treatment. In evacuations from the bowels it is detected by its odor, when used over the abdomen, and when used over the bladder the urine has the characteristic odor.

By the method described I have treated in the past two years a little over two hundred cases, but on account of failure to keep my records accurately previous to June 1, 1905, I report my cases from that time, and will merely state in regard to the previous cases that I had forty-four cases out of eighty recover within a period of six months. Since June 1 I have one hundred and seventeen cases recorded, with thirty-eight absolute recoveries so far as after repeated examinations no tubercle bacilli showed in the sputum. They regained their weight and ran a normal temperature. They have since been living in various sections of the country and still remain well, performing their usual avocations. There were seventeen that were improved, but from various causes discontinued the treatment and are still remaining comparatively well. One thing of interest to me is the fact that in three instances where people were dismissed improved I have heard through their physicians that there was a complete disappearance of the germs after a few weeks, without further treatment, they living at home and performing their usual work. I have had thirty-seven deaths and twenty-five unimproved. Of the cases improved or recovered I notice the following conditions existing during the first week: there would be an invariable increase in the number of germs present which would be gradually diminished again, so that by the end of the third week the number of germs would correspond with the number first shown. During this time they would be gradually gaining in weight, and from the end of the third week the germs would gradually diminish in number.

In regard to the temperature changes, for the first week a person would get extreme fluctuation, varying from 96° in the morning to 103° in the afternoon, and in exceptional cases dropping even as low as 93°. In these cases before the third week of treatment was finished their temperature would not vary any time within the twenty-four hours to exceed one-half a degree. The physical examination will show, in all these cases within two weeks from the time of commencing treatment, increased breathing capacity and frequently the sputum is slightly stained with blood. This I look upon as a favorable sign. While in the cases that progressed unfavorably one would get a high temperature each afternoon, and although their appetite would generally improve and they would take on a small amount of flesh, this would be of short duration.

The formula which follows generates a gas which is stated by John Glassford, chemist of Cooper Institute, to be Carvocrol, a powerful germicide which I think has a special affinity for the tubercle bacilli. The mixture consists of gum camphor and iodine, each 3 ounces, turpentine, 6 ounces, and sulphuric acid, one dram.

None of these cases were in the incipient stage when admitted, the shortest time any patient had been afflicted with this trouble being one year, and the oldest case eight years. I append a list of favorable cases, giving the temperature, weight, pulse, and bacteriological examination at various times during treatment.

In this list I have selected the cases, giving the results without showing the change each day or the rapid fluctuation in temperature resulting from the first few treatments, more especially to show the general effects from time to time, and I have not spoken of the hygienic or dietary side. It goes without saying that good fresh air, pure food of nutritious kind, and passive exercise is advisable. No forced feeding is given to impair the stomach's functions, and only such medication as from time to time is demanded by individual cases. Climatic conditions are more than compensated for by this treatment, and the surroundings and comforts of our cities and eastern towns. Good nursing, salt and oil baths, passive exercise that takes the attention and promotes cheerfulness is a great factor that should never be lost sight of. All this together covers the plan I pursue.

The first date given is the time of commencing treatment. The patients were dismissed within a week or two after the tubercle bacilli disappeared, and in a few cases as shown, stopped taking treatments and recovered when the disease was not far advanced, performing their usual work with no bad results.

Owing to limitations of space it is necessary to condense considerably the record of the cases, and I will, therefore, to save repetition, give the information in the following order: Case number, age, duration of disease before treatment, duration of treatment, following with results of microscopic examinations and remarks:

Case No. 2.—Fifty years, 23 months, 25 days; began treatment June 8, 1905; June 3, Meader, tubercle bacilli present; July 2, Bingham, no tubercle bacilli; remains well at present time.

Case No. 3.—Thirty-two years, 18 months, 42 days; began treatment June 8, 1905; June 8 tubercle bacilli present, sputum swarming with cocci; July 15, Meader, a few tubercle bacilli; October 5, swarms of cocci, no tubercle bacilli.

Case No. 6.—Twenty years, 1 year, 50 days; began treatment May 17; May 20 tubercle bacilli plentiful; July 15, Meader, 2 to 10 tubercle bacilli in each field; July 25, very few tubercle bacilli; August 5, no tubercle bacilli; remains well at present time. Gained 11 pounds during period of treatment.

Case No. 10.—Thirty-five years, 1 year, 96 days; began treatment May 18; June 3 tubercle bacilli thick; June 16, Bingham, tubercle bacilli present; June 21, Bingham, very few tubercle bacilli; July 7, Meader, few tubercle bacilli; July 31, in 10 fields only 1 tubercle bacilli; August 13, Bingham, 3 tubercle bacilli in 30 fields; September 2, no tubercle bacilli. Gained 35 pounds in weight during treatment.

Case No. 60.—Twenty-three years, 2 years, 124 days; began treatment June 7; June 10 tubercle bacilli present; June 28, Bingham, tubercle bacilli present; July 15, few tubercle bacilli, many pus corpuscles; August 12, Bingham, mixed infection; average number of tubercle bacilli, 2 to the field; September 13, few cocci, 24 tubercle bacilli in 30 fields; October 9, 200 fields show no tubercle bacilli.

Case No. 66.—Forty-eight years, 30 months, 106 days; began treatment June 5, tubercle bacilli present; July 15, 2 to 6 tubercle bacilli in each field; August 7, 16 tubercle bacilli in 10 fields; gained 18 pounds in weight and returned to work and remains well since.

Case No. 81.—Sixteen years, 1 year, 94 days; began treatment June 28; June 27, tubercle bacilli present; July 25, Meader, many tuberculous masses, few bacilli; August 5, 15 fields show 5 tubercle bacilli; August 25, no tubercle bacilli.

Case No. 83.—Twenty years, 18 months, 51 days; began treatment June 15; June 15, tubercle bacilli present; June 28, few tubercle bacilli; August 7, no tubercle bacilli; remains well at present time.

Case No. 89.—Forty-four years, 22 months, 57 days; began treatment June 27; July 7, Meader, tubercle bacilli present; July 25, average 10 tubercle bacilli to a field; August 15, average 14 to a field; Bingham, August 21, average 2 to a field; September 30, no tubercle bacilli present. Gained 12 pounds during treatment.

Case No. 96.—Thirty years, 14 months, 89 days; began treatment July 19; July 25, Meader, average 6 to 10 tubercle bacilli; August 18, Bingham, 6 tubercle bacilli to 15 fields; September 3, no tubercle bacilli.

Case No. 97.—Twenty-three years, 1 year, 100 days; began treatment July 17; July 31, 10 to 11 tubercle bacilli in each field; August 15, 16 to 17 tubercle bacilli in each field; August 30, 3 to 4 tubercle bacilli in a field; October 21, 15 fields contained 12 tubercle bacilli; gained 14 pounds in weight. Went home and has since remained well without further treatment.

Case No. 102.—Forty-one years, 23 months, 56 days; began treatment August 9; August 10, tubercle bacilli 18 to a field; August 23, 16 tubercle bacilli in 45 fields; September 6, average 2 tubercle bacilli; October 5, 45 fields showed 3 tubercle bacilli; October 26, no tubercle bacilli. Gained 18 pounds during treatment.

Case No. 116.—Twenty years, 15 months, 40 days; began treatment October 1, average 16 tubercle bacilli; October 26, 4 tubercle bacilli in 15 fields; November 3, 5 tubercle bacilli in 15 fields; December 26, no tubercle bacilli; January 7, no tubercle bacilli; gained 20 pounds during treatment and remains well at present time.

With reference to the preceding examinations, they were made by Drs. Meader and Bingham, of Watertown, Dr. Jones of Utica, and some by Dr. Williams and Dr. May.

FRESH-AIR HOMES AND MEDICAL WORK IN CONNECTION WITH THEM.*

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I need not enter into a detailed description of all the fresh-air homes in Europe and this country, but let me recall to your mind that fresh-air homes and summer vacations go back to the earliest historic times. That during the past century there have been built in Italy numerous summer homes on the Adriatic for convalescents and the sickly, and that France has numerous Ecoles des Vacance, and that similar institutions are numerous in Germany and England.

There are many fresh-air homes in this country, situated, quite naturally, in the neighborhood of the larger cities. These homes have in the main been built in the last two decades, for the needs of the poor in this country, as a result of our large acquisition of wealth and the ever-increasing demand of the general public for fresh air.

In New York City a large part of its population, 36 per cent., lives below Forty-second Street, on Manhattan Island, where, compared to the total park area of the city, that below Forty-second Street amounts to only a few breathing spaces, namely, 5 per cent. There is no advantage to state any arguments as to the demand, the need, and the value of fresh air for the New York tenement-house population.

It does not seem necessary, either, to prove that for laboring men and working mothers and factory boys and girls, a vacation is more of a necessity than it is for the professional classes and the small leisure class who are almost always able to obtain a vacation. The need of giving these 500,000 a vacation if only for a day's outing, has been appreciated for many years, and probably from 20 to 30 per cent of this number obtain a day's outing on river or ocean, or to country or seashore, during the summer. "During the summer of 1903, 116,464 mothers, babies, and elder children received a day's outing These were sent by twenty-four different agencies The New York Association for Improving the Condition of the Poor sending 17,699, while twenty-two different agencies gave stays of a week or more to 33,161, that is, between 5 and 10 per cent. of the number needing a vacation received it." (Allen.†) Of these 33,161, 2,754 were sent by the New York Association for Improving the Condition of the Poor to Coney Island for an average stay of ten days.

The need of this vacation in a fresh-air home is occasioned by sickness, hardship, overwork, or the want of work, overcrowding, and underfeeding. A fresh-air home does more good, in my opinion, in

*The results of two years' experience at Sea Breeze, Coney Island, a Fresh-Air Home conducted by the New York Association for Improving the Condition of the Poor. A paper read before the Society of Internal Medicine, December 20, 1905.

†Allen, Annals of the American Academy of Political and Social Science, May, 1904

a medical and economical way, in a week's time than several months of treatment at a dispensary, for many patients, at least.

Who, then, go to these fresh-air homes? The convalescent and the poor. Applications for the convalescents are made to the various agencies by hospitals, dispensaries, day nurseries, physicians, district nurses, parish workers, etc. For the poor, applications are usually made by visitors of charitable associations, to whom these cases have been referred for relief.

What agencies are there, then, to receive these applications? In Manhattan and Bronx there are sixty-four different agencies noted in the Directory of Charities who give a stay of a week or more to about 50,000 mothers and children. Besides these sixty-four there are numerous smaller agencies in the various churches and in many schools and clubs, but only one home takes men.

The great majority of these agencies are engaged only in fresh-air work, but some are also engaged in other fields of charity. Six societies in Manhattan and Bronx deserve special mention: 1. the Society of St. Vincent de Paul. 2. the Children's Aid Society. 3. St. John's Guild (though it does not call itself a fresh-air charity, but a hospital). 4. the *Tribune* Fresh Air Fund. 5. the New York Association for Improving the Condition of the Poor. 6. the Hebrew Sanatorium for Children.

Three of these agencies are engaged in fresh-air work only, and three of them in other branches of relief also. There is no central application bureau to prevent "overlapping," that is, to prevent one family from taking advantage of the several societies and obtaining more than their share of fresh air. This does happen, but probably not to any great extent except in the day parties. Of eight hundred children sent to the country, during the summer of 1904, for a stay of a week or more, sixty had been to Sea Breeze; and of these sixty only two had been elsewhere. Among the day parties there is doubtless greater "overlapping," due mainly to the ease of procuring invitations, and to the fact that in large parties of five hundred or more, fifty to one hundred more people make little difference..

During the summer of 1904 I was invited to examine, not the applicants for Sea Breeze, but those who had not been invited to Sea Breeze (applicants are always more numerous than those who are invited). The main idea of this examination, was to exclude cases of contagious diseases, and to recommend the length of stay for each person or family. During the three seasons previous, there had been in New York a large number of cases of trachoma so that regular examinations had been necessary, and in those seasons the examining physician reported that 10 per cent. of the children had trachoma. These children were refused Sea Breeze for two reasons, because the glare and sand were both bad for the eyes and because of the infectious nature of the disease. Owing to the efficacious methods of the Department of Health, during the summer of 1904, there were only five cases of trachoma and two of conjunctivitis amongst the invited guests. This, among 1,716 boys and girls, seemed not excessive.

Before the invitations for Sea Breeze are sent out the homes of all the applicants are visited by the so-called Fresh Air visitors in order to learn several important things about the family. Are they able to pay for a vacation? Have any of the family been away at any other home? Has there been or is there any contagious disease in the family? Are the children at school? (Sea Breeze opens before school closes and does not close until after school opens.) Are the children of the proper age? (Girls of all ages, boys under twelve, being admitted to Sea Breeze.)

If all questions are satisfactorily answered, instructions are given as to cleanliness, especially of heads, and for the family to come to 105 East Twenty-second Street at 8:30 on an appointed morning to the Assembly Room, in the United Charities Building. The parties are examined as expeditiously and quietly as possible, and sent in groups of forty to seventy-five to the East Twenty-third Street Ferry, and when all have arrived on the Brooklyn side, they are all, numbering from one hundred and sixty to two hundred, sometimes more, snugly packed into special trolley cars and taken direct to Sea Breeze at West Coney Island, without any change of cars.

The attempt is made to get the party to Sea Breeze in time for dinner between 12 and 1 o'clock, and in these same cars, returns the party of the previous week who have already had their dinner. This method prevents overtiring on the part of the guests, brings them to Coney Island in a good humor and after a glimpse of lawn and flowers, they are seated for dinner. This insures that their first impression is a good one. The returning parties at the same time have lost no time, so a larger number of total days can be given and there is a saving in transportation.

To examine from one hundred and fifty to two hundred and fifty women and children, two-thirds of whom are children, on a hot summer morning and to do it quickly is a trying task and requires patience and good temper to no small extent. The limit of time is from two to two and one-half hours. To get in a word with each mother, to inquire about each child, to send directions to the nurses and to have the supervisor check off each guest to prevent frequent attempts at substituting an uninvited guest, or from suddenly increasing the members of the family, requires quick, pointed questioning and tact.

In the summer of 1904, large numbers of children having "nits" in their hair were excluded in the early parties, and on one particular day, the nits and lice were so numerous, and so many children were infested that over one-third of the party of over two hundred were rejected and their visits postponed. This served as a lesson, for rumor spreads quickly in the tenements, but only after each visitor was told to insist that all heads be free not only from nits but from lice and lice eggs, was there any diminution in the number of cases. After a time the effect was marked, and during the summer of 1905 there were several parties in which it would be hard to find a single nit.

To keep accurate statistics while hurrying through such examinations was impossible, even with two doctors, which was tried for a time; but a partial list was kept, which was as follows (the complete list being in the Sixty-first Report of the New York Association for Improving the Condition of the Poor):

Disease of circulation, 20; respiratory organs, 13; nervous system, 26; eye and ear, 23; convalescent from acute diseases, 38; from operations, 25; from fractures and injuries, 8; disease of alimentary canal, 42; gout, rheumatism, goiter, etc., 17; deformities, 20.

There were altogether no less than 292 women and children convalescent or convalescing, including a few abnormalities. There developed at Sea Breeze one case each of measles, diphtheria, pneumonia, and typhoid fever.

The diagnoses made are snap diagnoses, made from a few statements of the patient and from a glance, and the diagnoses are given as they were in the report to the Association in laymen's language.

This list of diseases is given in detail in order to show the class of patients that can be admitted to a fresh-air home. Of course, none of these patients was, at the time of departure for Coney Island, ill enough to be in bed.

During the winter of 1905 there was considerable thought given to the question of the public school children, and it was found that numerous physical defects existing among them were due to the fact that they went breakfastless to school. This question received much discussion in the public press and in school and philanthropic circles. Various estimates were given by charity workers and school superintendents as to the number of breakfastless children, varying from 50,000 to 200,000.

There was, and is, no means of telling the total number. The Salvation Army offered "free breakfasts for school children," but this was not attended with great success, as the poorest did not get them, and many parents who could well afford to give their children a good breakfast sent them to obtain this free breakfast.

During the spring of 1905, the Department of Health, under the direction of Dr. J. J. Cronin, Chief Inspector of Schools, examined 7,166 schoolboys, and found among them 3,152 needing medical attention; 1,638 had enlarged cervical glands, 133 had evidence of heart disease, 127 of pulmonary disease, 1,946 had defective teeth, 1,273 had defective vision, and so on, through the various organs of the body.*

With the results of these spring examinations in mind, it was decided to attempt to get a physical examination of each child of school age who went to Sea Breeze, and further to get a record of the height, weight, and chest circumference of each child. This naturally meant a more thorough examination than in the previous summer, and an enormous increase in the work.

One thousand four hundred and ninety-two children between the ages of 5 and 14 years went to Sea Breeze. Of these, 955 were examined at Twenty-second Street for the condition of the mouth, teeth, hair, and cervical glands. Time was too short for the examination of eyes and ears and for adenoids, only self-evident defects being noted. One thousand and eleven children were examined at Sea Breeze. This examination was made at bed time on the night of arrival or on second night.

The physical examination and chest measurements were made by myself, with the assistance, on several occasions, of Dr. Charlton Wallace. The chest measurements were taken at the level of the nipple, during easy respiration. The height and weight were taken with a special measuring stick and Fairbanks scale. These were taken by the superintendent or by some member of the nursing staff under her supervision.

The percentage of defects of the Sea Breeze children was a little higher than those of the Department of Health, for the reason that the children were "selected children"; that is, those whose parents were in very poor circumstances, children who have lived in poor surroundings, and who have had very poor and insufficient food. But these Sea Breeze children were school children, and among the 1,087 examined, defects were found that suggest causes lying too deep to be reached by "free school breakfasts."

The height, weight, and chest circumference of the Sea Breeze children were compared with the standards of Bowditch and Porter based upon 7,000 and 15,000 children of American-born parents in Boston and St. Louis. The weights of the latter were reckoned with their clothes on; those of Sea Breeze children with night shirt weighing only a few ounces. Due allowance, however, was made by correcting to net weights, allowing 2½ pounds for children of five years, 3 pounds 5 ounces for children from six to nine, 5 pounds 7 ounces for boys ten to twelve, 4 pounds 5 ounces for girls ten to twelve, and 5 pounds 6 ounces for girls of thirteen, as recommended by Holt.

Of 555 cases 185 were of full American parentage, 90 having one parent American. Few of the children were Italian, Austrian, or Jewish. The great majority were American, then Irish and various strains of English, German, and Scandinavian. The tables also distinguish children according to school—public school, parochial school, industrial school, and those not attending school. There were too few observations among the industrial school children to be of any value. The observations made for different ages show no appreciable difference between the other three classes. As to height in early years, it agrees fairly with the standard, but soon falls below. The weights are much below the standards of Bowditch, and in some instances far below the very low standards ascertained by Porter. It is also interesting to note that all of these tables are far below the standard set by the anthropometric committees of England and the United States, and very far below the measurements by Dr. Dukes* of the boys from the favored classes—*i.e.* 7,855 boys at Rugby. The chest circumference is woefully deficient at all ages for both boys and girls, being nearly an inch at each age.† (Boys, Table 1. Girls, Table 2.) What do these deficiencies mean? Are we growing a smaller race than Boston? If so, why?

Table I.—Boys.

Total Num.	Height		Weight		Ch'st C'c'm.	
	Average all Schools.					
School Children	Standard	All Schools	Low Standard	All Schools	Standard	All Schools
47	41.7	41.4	38.6	37.14	21.5	21.5
56	44.1	42.1	40.6	42.9	23.2	22.4
69	46.2	45.2	44.3	43.6	23.7	22.5
64	48.2	47.8	49.1	50.9	24.4	23.6
60	50.1	49.6	53.14	52.14	25.1	23.7
43	52.2	50.6	57.11	57.11	25.8	24.4
52	54.	52.9	63.1	63.	26.4	25.
11	55.8	54.2	67.14	63.2	27.	25.2
1	58.2	58.5	71.11	75.4	27.7	27.
403	....	....	.....	.....	....	....

Many other evidences of poor surroundings and poor care were observed, notably a frightful condition of the teeth. Teeth were examined in 955 cases and found bad in 290—bad meaning unfilled cavities, generally foul with sore gums, and in nearly every instance swollen glands in the anterior part of the neck. Bad teeth did not include de-

*Up to December 23, 1905, the Department of Health had examined 55,332 children, and in 33,551 treatment was advised. Private conversation with Dr. Cronin.

*Dukes: Hygiene of Youth, Allbutt's System of Medicine. Vol. I.

†The tape was subsequently accurately measured and found to be 1-32 of an inch short to the yard.

fective or crooked teeth. Many of these children with bad teeth had coated tongue, foul breath, and sallow, muddy skins. Naturally, for bad teeth means poorly masticated, poorly digested, and poorly absorbed food. These conditions applied to all ages and were a striking proof of the urgent need for competent, compulsory, free dental clinics for school children.

TABLE II.—GIRLS.

AVERAGE ALL SCHOOLS.

Total Num. School Children	Height		Weight		Ch'st C'c'm.	
	Standard	All Schools	Low Standard	All Schools	Standard	All Schools
43	41.4	41.6	37.	37.3	21.	21.
63	43.6	44.	38.8	41.11	22.8	21.4
62	45.9	44.7	42.4	43.9	23.5	21.9
74	48.	46.5	46.8	44.5	23.8	21.7
50	49.6	47.6	51.9	50.9	24.5	22.9
72	51.8	49.7	55.12	55.14	24.7	23.3
51	53.8	52.2	61.4	60.8	25.8	24.3
61	57.1	55.4	68.8	69.5	26.8	25.2
31	58.7	56.8	76.9	77.	28.	26.1
19	60.3	57.7	89.5	79.8	29.2	26.9
6	61.4	60.8	97.9	87.3	30.3	25.1
532	....	....	.....	.....	....	....

These tables were also divided to show the difference (which was so slight that it can be disregarded) between the children of the parochial and the public schools. There were only 29 children of the industrial schools examined, so little comparison can be made with these figures, but they are included in the totals. By comparing the results obtained, it will be seen that they are similar to, or below, the results of Porter, a far lower standard than that of Bowditch.

An incomplete physical record was published in the Sixty-second Annual Report of the New York Association for Improving the Condition of the Poor. This table showed that over 50 per cent. of 955 children had enlarged cervical glands, 30 per cent. had bad teeth, 6 per cent. had heart disease, and 3 per cent. pulmonary disease, including 13 cases of pulmonary tuberculosis. A certain number of cases of contagious diseases developed while at Sea Breeze, several each of measles, whooping-cough, mumps, diphtheria, typhoid fever, and chickenpox. I may state that no case of measles developed until the fifth day, and almost all the contagious cases were in children under five years except the typhoid cases; that is, these diseases occurred in those children who were not so carefully examined.

What cases should we not send to a fresh-air home? Any contagious case or one in which there has been exposure to contagion. Cases of pulmonary tuberculosis and cases that need hospital care rather than that of a convalescent home.

Also, young infants, so-called "feeders," unless there is a resident physician who is competent to care for such cases, and unless one is reasonably sure that such babies will not die en route, or immediately after arrival, for they are so often sent to the seashore, like a dying consumptive to the mountains, as a last chance.

Some of the more important things done for these children at Sea Breeze: Out of doors all day—a daily ocean bath. All windows wide open all night. All children are completely undressed before going to bed.* An attempt is made to teach the children not to hurry in eating. Each child is given a tooth brush and shown how to use it. Face and hands must be washed and hair brushed before coming to breakfast. Mothers are told the physical defects in their children and the nature of treatment needed. Cases of contagious diseases promptly isolated and reported to the Department of Health, are readmitted to Sea Breeze for convalescence. Unvaccinated children are reported to the Department of Health. What can be done to help them at home? Thorough inspection and complete examination of all school children. Compulsory treatment of the teeth of all school children; there should be a suitable number of dental clinics where this treatment can be competently given. More complete inspection of food supplies, more particularly of the milk supply. More thorough inspection of tenements. Instruction in schools of the older children, especially girls, as to the relative value of foods, and methods of preparing it; distribution of leaflets among the poor in their homes stating the kind of food needed and the approximate cost. A larger number of fresh-air homes to be regarded as educational centers where the elementary principles of cleanliness, ventilation, and feeding can be taught by precept and example.

*Many go to bed without undressing. One boy had to be undressed four times the first night.

What can one do to help the poor children and adults who need more fresh air? I think you will all agree that the physician's duty to his patients is to do the best he can to get each patient well, with the least amount of discomfort and suffering, and to prevent him from being ill again, so far as he can.

Yet each summer I urged the chief of one of our larger children clinics to make application for Sea Breeze for the convalescent children under his care; this was also urged upon several of his assistants. And how many children do you think were sent from that clinic? Not one. Probably no child at that clinic needed a change of air. I would ask, therefore, especially of those of you who are engaged in hospital and clinical work in the summer, to see to it in the spring that each hospital and clinic is supplied with a list of all the fresh-air charities, and, further, that this list is not only supplied but used.

If all of us in the clinics and dispensaries referred the suitable cases to the fresh-air charities, the demand would more than exceed the supply. This would be a good thing, for the demand for worthy charity never goes unheeded, and in New York would result in time in the formation of a joint application bureau which would relieve the hospitals and dispensaries of detailed search for fresh air for individual cases, and in the building of more numerous fresh-air homes for the needy and deserving poor.

I express my thanks to Dr. Charlton Wallace for assistance on several occasions at Sea Breeze, and to Dr. Norman E. Ditman for assistance at examinations at Twenty-second Street.

Without the kind and enthusiastic assistance of Miss Thomson, superintendent, and the various members of her staff at Sea Breeze, and without the hearty cooperation of the Association and various members of the staff at the central offices, this work would not have been possible.

A Believer in Nostrums.—An aged woman died at Dover, England, the other day in a room which no one but she had entered for thirteen years. It was found so full of medicine bottles and pill boxes, so stated the veracious reporter, that a clearance had to be made before the corpse could be removed.

RESECTION OF THE STOMACH FOR CARCINOMA.*

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NEW YORK.

ATTENDING SURGEON TO THE NEW YORK SKIN AND CANCER HOSPITAL; ADJUNCT PROFESSOR OF SURGERY IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL; ASSISTANT VISITING SURGEON TO THE GERMAN HOSPITAL.

THE dictum that it is useless to attempt a radical operation in carcinoma of the stomach whenever the tumor has attained such size that it can be plainly felt, has been repeated so often that it is believed by many to have the significance of an axiomatic truth. Only recently, at the annual meeting of the New York State Medical Association, some of the speakers reiterated this view. It is for this reason that I present to you a case of resection of the stomach for carcinoma performed fourteen months ago, which, if the above-mentioned policy had been adhered to, would certainly have been treated by palliative procedures, as in this case the large tumor could not only be felt but even distinctly seen protruding the abdominal walls of the emaciated patient and moving up and down with respiration. The patient presented is enjoying the best of health and has gained forty-five pounds. While I admit that most cases with large tumors of the stomach are not amenable to resection, I wish to emphasize that it is wrong and misleading to propound as an apodictic truth the experience gained by a moderate number of observations. The question of resection in carcinoma of the stomach is better stated thus, that while in most cases of large tumors a successful resection is impossible, the procedure in each special case depends upon its own merits. To express it more specifically, we must consider our ability to resect well beyond the limits of the disease; we must examine whether the involvement of the lymphatic ganglia is confined to the immediate vicinity of the tumor or is more diffuse; we must be guided by the presence or absence of involvement of the pancreas or other neighboring organs; and the nature of the adhesions must be considered. To determine the operability merely by the size of the tumor betrays a lack of discrimination, and is unscientific.

The patient, Mrs. H. W., forty-eight years of age, was referred to me by Dr. A. Caillé, in December, 1904. As long as a year ago she had felt pain in the epigastrium, dull in character, intermittent, and not necessarily augmented by taking food. Since that time she had lost fifty-four pounds and had become steadily weaker. For two months past she had vomited almost every day after taking food, even fluid food; sometimes twice daily. On admission to the German Hospital, December 26, 1904, her condition was very poor. She was considerably emaciated and profoundly anemic; her tongue was coated. Abdomen boat-shaped, considerably sunken in. In the umbilical region, a little to the right of the umbilicus, there was seen and felt a tumor, two inches or more in diameter. It was smooth, hard, and sensitive on pressure. It moved with respiration, and could also be moved from side to side. Stomach tympany extended beyond the left mammary line.

On January 2, 1905, the operation was performed. Epimesogastric incision seven or eight inches long, with excision of navel. The omentum was found attached to the pyloric part of the stomach by adhesions which were easily separated. The tumor now appeared to be about one and one-half inches in diameter, situated at the pyloric portion, completely encircling it. Inspection now showed the presence of five or six little glands in the lesser omentum and a very small one in the gastrocolic omentum, all these in close proximity to the tumor, so that they could be removed in connection with it. The duodenum appeared to be movable, and the stomach was dilated to such an extent that it seemed it would be possible after resection to approximate stomach and duodenum without tension; in other words, that Billroth's first method would be feasible, and this method was therefore selected. After applying a chain of ligatures to the gastrocolic and the lesser omentum, these were divided as far as necessary and the tumor with adjoining parts of stomach and duodenum liberated. Now compressors were applied, one to the duodenum an inch and a half below the tumor, and one to the stomach about three to three and a half inches above the tumor. The stomach was then resected two inches above the tumor and the duodenum one inch below it. The stomach was sutured by two rows of silk sutures, except at the lowermost part, which was united with the duodenum by a Murphy button.

After the operation, the patient's temperature reached its highest point, 103.4°, on the fifth day, then declined to the normal. She was kept on fluid food for nine days, then on soft diet till four weeks were up; after that time solid diet was given. On February 5, the button was discharged and the patient left the hospital. The pathologist's report was carcinoma gelatinosum.

Read before the Surgical Section of the New York Academy of Medicine, March 2, 1906.

Sprained Ankle.—Robert Carothers concludes that: No one is exempt from sprained ankle, although some are more prone than others. In severity a sprained ankle will range from a trivial accident to one of extreme severity and permanent. The outer side more often than the inner side of the ankle is the seat of trouble. The diagnosis, which is ordinarily made with ease, is at times made with difficulty, and at times an *x*-ray examination is required to make the diagnosis certain. The treatment by immobilization with a plaster-of-Paris cast is unsatisfactory and at times injurious. The treatment instituted by Cotteral, the so-called adhesive plaser strappings, advising and urging the patient to walk on the injured foot and the early removal of these straps followed by massage, gives the most satisfactory results. The old cases are to be, under anesthesia, converted into acute sprains and treated in the same manner.—*Lancet-Clinic.*

Origin of Simple Cysts of the Ovaries.—Domenico Cesa-Bianchi has made experiments on guinea-pigs, rabbits, cats, dogs, and other mammals to determine the causation of simple cysts of the ovaries. After examining the normal ovaries of many animals he concludes that embryonal remains of the Wolffian bodies may be found in many normal ovaries, which by undergoing congestion and long-continued hyperemia become abnormally developed and form simple cysts. These cysts are not the result of hydrops of the follicles, as has been stated by numerous observers. Experiments were made also by producing aseptic injuries and inflammations of the ovaries and by means of grafts, to produce cysts. The conclusions of the author are that such inflammations have no part in the production of simple cysts of the ovaries.—*Archivio per le Scienze Mediche.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

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PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, June 9, 1906.

THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.

THERE are a number of diseases in which a controversy is still being carried on regarding the superiority of operative over non-operative treatment without any definite conclusion having yet been agreed upon. One of these is exophthalmic goiter, and here the opposition to surgical intervention has apparently increased, although the results of non-operative measures have not improved very much, despite the use of the highly lauded serums and the Röntgen and radium rays. All of these are still on trial and it is too early to venture an opinion as to the completeness and permanency of the final results. It may be admitted that many cases yield to hygienic and general medical measures where the circumstances permit of the proper treatment being carried out, but in numerous instances the disease is resistant from the very beginning and conservative measures are of no avail.

That surgery should be reserved for severe cases which have resisted medical treatment is the opinion of B. Farquhar Curtis (*Annals of Surgery*, March, 1906), although he does not intend this to mean that it should be considered as a last resort, for experience has shown that the mortality is greater in the bad cases than in those in which the symptoms are less severe and the patient is in better condition. On the other hand, it is not advisable to advocate immediate and early operation in every case, because many recover with medical measures alone, and there is a mortality from operation even in the slight cases, although there is less risk than in the serious ones. Curtis thinks that the only operations which need be considered are partial thyroidectomy and extirpation of the cervical sympathetic nerve and ganglia. Ligature of the thyroid vessels has a palliative effect and is useful as a preliminary to thyroidectomy. Hoping to avoid the acute thyroid poisoning which has made the mortality from the operation so high, Curtis tried sympathectomy in seven cases, but only four of these patients recovered. Of these, however, three remained practically cured, so that the results from this operation may be deemed fairly satisfactory. The operation is much more difficult, however, than thyroidectomy; it cannot readily be done with local anesthesia, and the mortality is fully as high. For these reasons the writer is inclined to favor thyroidectomy. He performed the latter in fourteen cases, with four deaths, all advanced cases, from acute thyroidism. The operation is best done in two stages, a preliminary ligation of the arteries being followed by the partial excision of the gland. During the interval the patient should be kept in bed and general sedative measures employed, including the bromides, ice bag to the heart, etc.

The total number of cases treated by thyroidectomy which have been published now number one hundred and thirty-six, including those of Schulz, Kocher, Mayo, Hartley, and Curtis. The deaths, seventeen in number, were chiefly from acute thyroidism. It has been claimed that the operative successes represent the periods of temporary improvement so often observed in exophthalmic goiter, with or without treatment. Curtis thinks that this explanation does not hold good because many of these patients have been followed for a number of years and continued well without any other form of treatment having been employed. He justly concludes that whatever the danger of operation may ultimately be shown to be, even if the mortality be twelve per cent., there can be no doubt that the survivors will be cured of their symptoms. None of the methods of internal treatment which have thus far been tried has shown results comparable with this in advanced cases of the disease.

ANOTHER POSSIBLE ETIOLOGICAL FACTOR IN MALARIA.

ALTHOUGH the mosquito has been quite universally recognized as the main factor by which malaria is ordinarily transmitted, there are certain phases of the question which are not quite entirely cleared up, for we have well authenticated instances in which the presence of malaria, either in the individual or in a given locality, cannot satisfactorily be accounted for by the activities of this insect. Other modes of transmission have been noted, among them that by the much despised bedbug; and now we have the authority of a Brazilian physician, Dr. Schrwald (*Medizinische Blätter*, No. 10, 1906), for the statement that some of the intestinal worms are also capable of acting as the carriers of the malarial infection. In a large number of cases of this disease which came under his observation, he found that *Ankylostoma duodenale*, or the hook worm, contained malarial parasites in its intestinal canal. It is well known that these parasites subsist by attaching themselves to the interior of the intestines and absorbing the blood from the latter. Schrwald made a number of serial sections of ankylostomata derived from malarial patients and demonstrated that the malarial parasites wander from the intestinal canal of the worm into the mucous glands of the mouth. He was able to demonstrate in these glands the same forms of the malarial organism as were found in the oral glands of *Anopheles*.

It is known that the hook worm secretes a peculiar fluid which serves to prevent the coagulation of the blood of the host at the point where the worm attaches itself. In this way malarial organisms may be transmitted directly from the parasite to the blood of the host. It appears, therefore, that cases of chronic malaria and also

recurrences in regions which are ordinarily free from the disease can thus be explained very readily by the presence of these infected intestinal parasites.

The writer calls attention to the possibility that *Ankylostoma* itself may transmit malaria from the sick to the well by means of its eggs or larvæ. This supposition has not, however, been confirmed by any actual observations. From what has been said it is quite evident that the individual who harbors infected hook worms will not be freed from his malaria by the administration of quinine alone, for as long as these worms remain *in situ* the disease may continue to flourish. In such cases, therefore, it is necessary first to cure the hook worm disease. The writer also found that individuals who, after they had been infected with malaria, became anemic and cachectic, soon regained their health after these intestinal parasites had been gotten rid of. Furthermore, persons who had presented recurrent attacks of malaria every year, remained free; in fact, this became so well known that patients afflicted with malaria tried the "worm cure" before attacking the malaria itself.

These observations are quite interesting, and, taken in connection with the importance which the hook worm disease has lately assumed in our own tropical and subtropical possessions, may prove the means of combating malarial diseases which so often present many difficulties in the way of treatment.

FUNCTIONAL NEUROSES AND DISEASES OF THE FEMALE GENITALS.

The idea that certain disturbances of the nervous system in women are entirely dependent on diseases of the generative organs is very old indeed. The symptoms so graphically described by this class of patients vary greatly and may be characterized by the most improbable features. For want of a better word, the condition is now very wisely—and evasively—termed a genital reflex neurosis, and in many cases a lesion of the uterus and its adnexa has been accepted as the cause without much questioning. Gynecological procedures of varying extent are instituted, and the result is often favorable, but more often otherwise. The condition has, unfortunately, been studied from a limited point of view, for which the gynecologist is, to some extent, to blame, as operation is undertaken to relieve what is apparently a very prominent symptom, without further inquiry into other factors of disease, particularly of a nervous type, which the patient may possess. A study in which the neurological point of view is more strongly brought forward has lately been published by E. Meyer in the *Monatsschrift für Geburtshülfe und Gynäkologie* for January, 1906, in which it is shown quite conclusively that nervous disturbances which are commonly attributed to gynecological lesions are in many cases instances of true hysteria, or hysteroneurasthenia, and associated with other evidences of a general neurosis.

It is an established fact that hysteria, which we are justified in considering a psychic disease, may assert itself as a disturbance of certain organs or regions of the body without any demonstrable lesions being present in the latter, or, if present, no connection can possibly be traced between the two conditions. The psychic processes which form the basis of hysterical phenomena can, moreover, be worked out in these patients without much difficulty. Meyer claims, moreover, that, up to the present time, the theory which ascribes certain neuroses to reflexes or a kind of irradiation has not been sufficiently supported by facts; while it has often been noted that the most extensive diseased conditions of the genitals are rarely accompanied by nervous disturbances of this type.

Opinions as to the etiological significance of genital lesions in the production of hysteria vary greatly even among those who acknowledge this possibility, and the claim has been made by one prominent observer that the presence of a chronic atrophic parametritis alone is of any consequence in this connection. As noted above, it has been found, unfortunately, only too often that much vaunted gynecological procedures directed primarily against the adnexa failed to produce the desired improvement in the nervous symptoms complained of by the patient, while a much better result would have been accomplished by measures of a very different character familiar to all neurologists in the treatment of hysteria and allied states.

Although the older ideas regarding the influence exerted by genital lesions in the production of hysteria must now be modified, or at least restricted, in order to agree with the weight of latter-day evidence, there can be no doubt that derangement of the female sexual apparatus may play an important part in the character and development of hysteria and similar neuroses; but the presence of an actual localized pathological process is not essential. The diagnosis of hysteria should not be based on any one symptom; it must depend on the general psychic and nervous condition of the organism, and, in order to ascertain this, it is most essential that the previous history of the patient, hereditary influences, former nervous disturbances or injuries, etc., should always be carefully investigated. General treatment directed to the organism as a whole should be the first indication in any given case, rather than a hasty resort to local operative measures. If pathological processes in the genital organs or elsewhere are present, an operation may, with perfect justice, be undertaken. Castration and other radical procedures should, however, always be avoided, and likewise those lesser gynecological measures, which can only be expressed by the term, "tinkering," for they are more likely to bring about a fresh irritation of the nervous system than to accomplish any useful purpose.

The Case Against the Cat.

Kipling, in one of the most charming of his "Just So" stories, offers a fanciful but altogether delightful account of the way in which, in remote ages, the first cat drove a hard bargain with neolithic man for food and shelter, without binding itself to yield in return any recompense in servitude, as did the less astute horse and cow and dog. "I am the cat that walks by himself, and all places are alike to me," was the oft-reiterated

platform from which this sagacious progenitor of the feline race refused to budge in spite of all the blandishments of our own prototype; and, true enough, from that day to this, *Felis domestica* has never deserved its specific appellation, for, though tamed, the cat has never become domesticated in the true sense. It is this refusal to submit to restraint or to abandon its natural predatory habits that has of late so exercised the brotherhood of bird lovers. At the annual meeting last November of the National Association of Audubon Societies a resolution was adopted, in the interest of the feathered world, officially expressing disapprobation of the ornithophagous propensities of grimalkin; but, though well intentioned, these resolutions will hardly, we fear, appreciably reduce avian mortality from this cause. The sanitarian has, however, still more cogent grounds for discouraging the perpetuation of the cat as a household pet, and it would be the part of wisdom for the family practitioner, even at the risk of falling in the estimation of the youthful members of his clientèle, to utter a serious word of warning anent the very real possibility of disease transmission through the house cat. The enumeration of scarlatina, influenza, whooping-cough, measles, diphtheria, and ringworm probably does not exhaust the list of diseases whose communication has been or might be ascribed to this intermediary. Even the proudest and sleekest tabby yields readily to atavistic calls; and prowlings in unseemly places, refections in strange garbage cans, and midnight conclaves with the mangy outcasts of the gutter afford ready opportunities for the acquisition of contagious materials. Practically all cats have worms, most of them suffer from catarrhal conditions of the nasal passages, and the feline method of ablution is not such as to command the respect of the hygienically inclined; while no one who has witnessed the enthusiasm with which children caress their pets can fail to realize the magnificent opportunities for infection that are afforded in this way. Cats and fleas are nearly always associated, and the importance of suctorial insects as inoculating agents has been so much emphasized of late that the possibility of danger in this direction also is not altogether remote. At any rate, it appears that the doctor, like the dog—that other "friend of man"—must in the interest of public health set his face against the "fireside sphynx" and warn parents of its possibilities for harm. He should at least see to it that no cat is allowed to enter a sick room. For the physician who finds his own arguments insufficient to convince some obdurate cat-lover, we recommend an article entitled "The Case Against the Cat," appearing in the April number of *Good Housekeeping*, as eminently suitable for lay perusal in this connection.

Alleged Danger in Stamp Licking.

While the practice of moistening the gum on postage stamps, envelopes, etc., with the tongue is certainly not a commendable one under any circumstances, though the perils it involves must be regarded as excessively remote, the *Lancet* has pointed out that the English three-penny stamps are colored with a yellow dye containing chromate of lead, and that one-fifth of a grain of the salt is contained in fourteen stamps. This is regarded as an added argument against what is called "the very common, dirty practice of licking postage stamps." As the three-penny stamp is used only in exceptional cases for postage, and probably not more frequently for revenue purposes, and as the gummed side only is licked, lapping of the printed side being an occupation of idiots and young children, the danger of lead poisoning from this source to the average Briton does not yet appear imminent.

The Obstetrical Fee for Triplets.

The question of whether a physician who agrees to conduct a confinement for a specified sum is entitled to increase his charge if the delivery is a multiple one, was recently made the subject of judicial decision in a Long Island court. In the case in question triplets were born, but the father refused to pay more than the honorarium originally agreed on. The court denied the right of the obstetrician to augment his fee on this account, but decided that an additional sum should be paid to compensate for the greater quantity of dressings, etc., consumed.

News of the Week.

Memorial Tablet to Dr. Fowler.—On May 28 a tablet in memory of the late Dr. George Ryerson Fowler was unveiled in the library of the Kings County Medical Society, 1313 Bedford avenue, Brooklyn. The tablet was designed and executed by the Tiffany studios and has a bronze bust of Dr. Fowler in the center. The presentation speech was made by Dr. Lewis S. Pilcher. Dr. William F. Campbell received the memorial on behalf of the society.

New Dispensaries Proposed.—Applications have been made to the State Board of Charities for a license for a dispensary at the new Swedish Hospital in Brooklyn, and charters for the Manhattan Odontological Society and the Hebrew Memorial Dispensary. The Swedish dispensary is planned for 126 Rogers avenue, Brooklyn, and is intended to serve the large Swedish population of that district. The Hebrew Memorial Dispensary is to be located in the region below Fourteenth street and east of Third avenue. Objections were made to these petitions on the ground that new dispensaries were not needed in the neighborhoods in question.

St. John's Guild Seaside Hospital.—The seaside hospital of this organization at New Dorp, Staten Island, was opened on June 4, two weeks earlier than usual. Until the Guild's floating hospital begins its daily trips at the usual time—about July 1—the patients for the seaside hospital will be conveyed thence by the Staten Island ferry and trains, on boats leaving the foot of Whitehall street at 10 A.M. and 2 P.M. An inspector from the Department of Health will be at the ferryhouse fifteen minutes in advance of these hours, to examine the patients and countersign their tickets, and a nurse and orderly will meet the patients in the ferryhouse on the New York side and will conduct them to the hospital. The fares of the patients will be paid by the guild.

Uniform Hospital Accounting.—The committee on hospital needs and hospital finances, which was organized a year ago last March to devise some uniform method of hospital accounting and to make suggestions concerning more adequate hospital economies and financial management, has completed its work and filed its final report with the managing boards of the several hospitals of the city. The committee strongly recommends the adoption of a sys-

tem of uniform accounting, which shall be adapted to the varying conditions in different hospitals, but still permit of satisfactory comparison and classification. It is stated that four of the largest general hospitals of the city, the New York, the Presbyterian, Roosevelt, and St. Luke's hospitals, have perfected a system of uniform accounting for themselves, and the committee recommends that the system of the four hospitals mentioned be adopted as the model for all hospitals in the city, with such modifications as may be necessary. An increase in the city's per diem allowance to the hospitals already receiving municipal aid is suggested after the uniform system of accounting is adopted.

To Aid St. Vincent's Hospital. — The annual lawn festival in aid of the destitute sick of St. Vincent's Hospital was held on June 4, 5, 6, and 7, in the hospital grounds, from 3 until 6 and from 7 until 9 P.M.

Bequests to the Montefiore Home and Other Charities.—Henrietta Blumenstock, by her will, filed for probate on May 30, bequeathed $5,000 each to the Hebrew Sheltering Guardian Society, the Montefiore Home for Chronic Invalids, and the Montefiore Home for Consumptives.

Tuberculosis in Germany. — According to the figures published at the National Tuberculosis Congress recently held in Berlin, there has been a decrease of 38 per cent. in the number of deaths from tuberculosis in Germany since 1875. Sanatoria have restored to health and work 34 per cent. of the patients treated. During 1905 26,621 persons coming under the Workmen's Insurance act were treated at sanatoria. The results attained at dispensaries were also excellent. Thus in 1905 15,161 persons were examined in Berlin and 8,200 apartments inspected and modified so that infected persons could be isolated. The insurance companies of Germany from 1901 to 1905 spent £1,900,000 in fighting tuberculosis. The outlay included the establishment of twenty-six sanatoria with 2,111 beds for women and ten sanatoria with 541 beds for children.

The Free Alcohol Bill Passed.—The Free Alcohol bill was reported favorably to the Senate by the Finance Committee on May 23, and the next day the measure was passed without division. The bill has already been passed by the House, but it has been amended so that the time for its provisions to become effective has been postponed to January 1, 1907, instead of three months after passage, as was fixed by the House. The change was made by the Finance Committee both in order to give the Internal Revenue Department time to organize its service and also to afford the wood alcohol manufacturers an opportunity of disposing of their surplus stock. The bill provides that after January 1 next, domestic alcohol of such degree of proof as may be prescribed by the Commissioner of Internal Revenue may be withdrawn from bond without payment of internal revenue tax for use in the arts and industries and for fuel, light, and power; provided said alcohol shall have been mixed in the presence and under the direction of an authorized Government officer, with denaturizing material, which destroys its character as a beverage and renders it unfit for medicinal purposes. The law requires the keeping of books subject to the regulations of the internal revenue bureau. Penalties are prescribed for persons who withdraw alcohol or use it after its having been so withdrawn and conceal it to avoid the process of denaturing, with a view of making improper use of it.

Typhus Fever in Mexico.—The increasing prevalence of this disease in Mexico has stimulated research into its etiology and mode of transmission. Several announcements regarding the discovery of a specific organism have been made, and the Government has offered prizes aggregating $50,000 for the discovery of the germ and means of prophylaxis and treatment.

Unlawful Practitioners in Trouble. — A registered physician was sentenced to three months' imprisonment at a recent session of the Court of Special Sessions for furnishing prescriptions with an illegal object to women. The agents of the County Medical Society have also secured the arraignment of a man whose specialty was "electric milk" for the complexion, it being charged that he practised medicine without a license.

Patent Medicines in Minnesota.—The Minnesota Dairy and Food Department has announced that it is about to make a careful examination and analysis of all patent medicines on the market. The contents of each preparation will be published in a weekly bulletin to be issued by the department and have wide circulation. If the medicines contain opiates or alcohol the fact will be published, together with the quantity.

An Authors' Clinic.—During the meeting of the Illinois State Medical Society, held in Springfield, May 15, 16, and 17, a unique entertainment was given to those members interested in the eye, ear, nose, and throat. It was called an authors' clinic, and lasted three days, commencing Tuesday morning at the David Prince Sanitarium, Wednesday morning at the St. John's Hospital, and later at the Springfield Hospital. The clinical material was assigned to the hospitals, and the individual operator was notified of the time and place of his demonstration. When possible, operations were conducted in adjoining rooms, and on two occasions three operations were conducted simultaneously. About forty-five operations were performed during the meeting. Authors of operations who were invited were: Dr. Otto Freer, window resection of septum; Dr. Frank Allport, ptosis; Dr. Casey Wood, excision of the tarsus for intractable trachoma; Dr. B. L. Ballinger, enucleation of tonsil in its capsule; Dr. Charles Robertson, tonsil excision; Dr. F. C. Hotz, entropion; Dr. Wilder, symblepharon; Dr. Baird, advancement of the rectus; Dr. E. Fletcher Ingals, intranasal method for frontal sinusitis; Dr. Ostrum, septum deflection; Dr. A. E. Prince, strabismus and nasal obstruction. Dr. Prince also demonstrated his advancement operation, excision of the rectus for paralytic squint, and exercised a general management of the clinic.

Wood Alcohol Poisoning. — Two men were killed, another is seriously ill, and a fourth is almost totally blind as the result of a wood alcohol drinking bout held in the neighborhood of Northport, L. I., last week. The alcohol was obtained from the local druggist on the pretense that it was to be used for local application.

Suit Against a Surgeon.—Suit for $20,000 damages has been brought against a surgeon of Lincoln, Neb., by a patient who alleges that not until the completion of the operation did she know that it was to be performed in the presence of students. It is also alleged that the operation was performed in an unsuitable operating room and that it was carelessly done, so that she has suffered permanent injury.

Christian Science Healer Held. — The English healer under whose care Major Whyte recently died has been committed for trial on a charge of manslaughter, the total bail required being $10,000.

American Dermatological Association.—At the thirtieth annual meeting of this association, held in Cleveland, Ohio, May 31 and June 1 and 2, 1906, the following officers were elected for the ensuing year: *President,* Dr. Arthur Van Harlingen of Philadelphia; *Vice-President,* Dr. William A. Pusey of Chicago; *Secretary and Treasurer,* Dr. Grover W. Wende of Buffalo.

Association of Surgeons of the Southern Railway.—At the eleventh annual convention of this organization, held on May 24, Washington was chosen as the next place of meeting. The officers elected are as follows: *President,* Dr. R. S. Toombs of Greenville, Miss.; *First Vice-President,* Dr. M. F. Coomes of Louisville, Ky.; *Second Vice-President,* Dr. B. B. Simmes of Talladegra, Ala.; *Secretary and Treasurer,* Dr. J. U. Ray of Woodstock, Ala.

North Carolina State Medical Society.—At the annual session of this society, held at Charlotte on May 30, Morehead City was selected as the next place of meeting. Officers were elected as follows: *President,* Dr. S. D. Booth of Oxford; *First Vice-President,* C. M. Strong of Charlotte; *Second Vice-President,* Dr. J. E. McLaughlin of Statesville; *Third Vice-President,* Dr. W. T. Hargrove of Kinston; *Secretary,* Dr. D. A. Stanton of High Point; *Treasurer,* Dr. H. M. Tucker of Raleigh.

Michigan State Medical Society. — The forty-first annual meeting of this society was held at Jackson, May 23 to 25, 1906. New work was taken up relating to medical education and the study and prevention of tuberculosis, standing committees being appointed for research in both of these subjects. The society appropriated $500 from its funds for the benefit of the physicians of California, the sum to be sent through the American Medical Association. The following are the officers for 1906: *President,* Dr. C. B. Stockwell, Port Huron; *Vice-Presidents,* Dr. William Fuller, Grand Rapids; Dr. E. T. Abrams, Dollar Bay; Dr. D. E. Robinson, Jackson, and Dr. A. R. Stealey, Charlotte; *Secretary-Editor,* Dr. B. R. Schenck, Detroit; *Treasurer,* Dr. G. W. Moran, Detroit. The next annual session will be held in Saginaw in May, 1907.

Wayne County (Michigan) Medical Society.—At the meeting of this society recently held, officers were elected as follows: *President,* Dr. J. H. Carstens; *Vice-President,* Dr. W. F. Metcalf; *Secretary-Treasurer,* Dr. Walter D. Ford.

Massachusetts Association of City and Town Physicians.—At the annual meeting of this association, held in Boston, the following officers were elected: *President,* Dr. Edwin P. Gleason of Brockton; *Vice-President,* Dr. C. C. Crane of Norwood; *Secretary,* Dr. W. G. McFee of Haverhill; *Treasurer,* Dr. Daniel Rose of Stoughton.

Connecticut River Valley Medical Association.—Officers were elected as follows at the annual meeting, held in Bellows Falls on May 22: *President,* Dr. J. Sutcliffe Hill of Bellows Falls; *Vice-President,* Dr. A. L. Dinsmore of Keene; *Treasurer,* Dr. E. H. Campbell of Bellows Falls; *Secretary,* Dr. A. L. Miner of Bellows Falls.

Iowa State Medical Society.—Cedar Rapids was selected as the next place of meeting for this society at its recent session in Des Moines, and the following officers were elected: *President,* Dr. E. W. Clark of Grinnell; *Vice-Presidents,* Drs. H. A. Leipziger of Burlington and M. J. Kennedy of Algona. The secretary, Dr. Treynor, was elected for five years and is still in office.

Missouri State Medical Society.—The election of officers of this association at the meeting held in Jefferson City on May 17, resulted as follows: *President,* Dr. C. H. Wallace, of St. Joseph; *Vice-Presidents,* Drs. F. W. Allen of Callao, W. G. Carow of Sedalia, C. J. Orr of St. Louis, E. H. Thrailkill of Kansas City, and H. L. Reid of Charleston; *Secretary,* Dr. C. M. Nicholson of St. Louis; *Treasurer,* Dr. J. Franklin Wells of Salisbury.

Dartmouth Medical College Alumni Association.—The following officers were elected at the meeting of this association held in Concord, N. H., on May 17: *President,* Dr. W. A. Megrath of London; *First Vice-President,* Dr. R. V. Baketel of Methuen, Mass.; *Second Vice-President,* Dr. D. R. Goodhue of Springfield, Mass.; *Secretary and Treasurer,* Dr. H. N. Kingsford of Hanover.

New Hampshire State Medical Association.—The one hundred and fifteenth annual meeting of this society was held at Concord on May 17, and the following were elected as officers: *President,* Dr. Ira J. Prouty, Keene; *Vice-President,* Dr. John H. Neal, Rochester; *Secretary,* Dr. D. E. Sullivan, Concord; *Treasurer,* Dr. D. M. Courier, Newport; *Necrologist,* Dr. Eli E. Graves, Penacook. Dr. Granville P. Conn of Concord, the retiring secretary, had held this office since 1869, save for two years when he was successively vice-president and president of the society.

New Hampshire Military Surgeons.—The annual meeting of the New Hampshire Military Surgeon's Society was held at Concord on May 17, and the following officers were elected: *President,* Dr. Ezra Mitchell of Lancaster; *Secretary,* Dr. G. P. Conn of Concord; *Treasurer,* Dr. F. A. Stillings of Concord.

Michigan State Homeopathic Medical Society.—At the meeting of this organization, held in Grand Rapids on May 17, these officers were elected: *President,* Dr. Harold Wilson, Detroit; *Vice-President,* Dr. S. H. Knight, Detroit; *Second Vice-President,* Dr. O. L. Ramsdell, Petoskey; *General Secretary,* Dr. D. W. Myers, Grand Rapids; *Corresponding Secretary,* Dr. J. H. Ball, Bay City; *Treasurer,* Dr. R. M. Richards, Detroit.

San Francisco College of Physicians and Surgeons.—The annual commencement exercises of this college were held on May 17, in the Danish Lutheran Church, and diplomas were awarded to a class of twenty-nine members. Degrees in dentistry and pharmacy were also conferred.

City Seaside Park.—The Board of Estimate on June 1 gave a public hearing on the proposal to establish a municipal seaside park and convalescent home for the city's poor. The new law authorizes the Board of Estimate to spend $2,500,000 on such a project. Several sites have been recommended to the city, among them being Rockaway Park, Long Beach, South and Midland beaches on Staten Island, and Barren Island. A committee composed of President McGowan of the Board of Aldermen, President Cromwell of Richmond, Dr. J. W. Brannan, president of the Bellevue Hospital trustees, and representatives of several charitable organizations has made an inspection of these sites and considers that Rockaway Park offers the most advantageous location.

Obituary Notes.—Dr. Hugh McFatrich of Denver, Col., died on May 27, at the age of eighty-two years. He had practised in Wisconsin, Illinois, and Iowa, but retired in 1897 and since then had lived in Denver.

Dr. George A. Ketchum of Mobile, Ala., died on May 29, at the age of eighty-one years. He was born in New York City and in 1846 was graduated

from the Medical Department of the University of Pennsylvania. In 1859, in conjunction with Dr. J. C. Nott, he organized the Medical College of Alabama at Mobile. He had been professor of Theory and Practice of Medicine from the start, and upon the death of Dr. W. H. Anderson, in 1884, succeeded him as second dean. For many years before the war he was President of the Common Council of Mobile, and was a member of the convention which passed the Alabama ordinance of secession. Upon the outbreak of the war he volunteered as a surgeon. After the fall of the Confederacy he again became President of the Common Council, and was for a while *ex-officio* Mayor of the city. He was an original member of the Board of Health of Mobile, in 1871, and had since been annually elected its president.

Dr. Henry Howland Chase of Rock Island, Ill., died on May 21, at the age of forty-eight years, after an illness of several weeks due to an operation infection. He was graduated from the Chicago Homeopathic Medical College in 1881, and after practising for some time in various other places, went to Rock Island nine years ago.

Dr. S. Wayne Gamble of Kingstree, S. C., died on May 22, after an illness of three days. Dr. Gamble was a member of the Constitutional Convention of 1895 and later served as member of the House of Representatives.

Dr. Darwin D. Eads of Paris, Ky., died at Chicago on May 27. He had practised in Paris forty years and was well known as a botanist.

Dr. Louis A. Weigel of Rochester died on May 31, at the age of fifty-two years. Dr. Weigel's life was sacrificed through his devotion to his profession, for in consequence of long-continued work with the *x*-rays he developed malignant disease of both hands, and this disease, in spite of several amputations, became generalized and killed him.

Dr. William M. Findley died at Altoona, Pa., on June 2, at the age of sixty-four years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1876. He was the Blair county representative on the State Board of Health.

Dr. J. T. B. Foard of Pollard, Ala., died on May 26, at the age of seventy-three years. He had practised in Escambia county since 1868.

Dr. Harry B. Hargis of Klamath Falls, Ore., died of heart disease on May 18, at the age of forty-three years.

Dr. Samuel P. Boardman of Springfield, Ill., died suddenly on June 2. He had suffered from melancholia for some time.

Obituary.

CHARLES WARRENNE ALLEN, M.D.,

New York.

Dr. Charles Warrenne Allen of this city died of typhoid fever in the Colonial Hospital, Gibraltar, on May 30. He sailed from New York the latter part of March to attend the International Medical Congress at Lisbon, to which he was accredited as a delegate from the American Dermatological Association. Although ill at the time, he insisted upon sailing from Genoa on the return voyage on May 17, in order to be home in time to attend the meeting of the Dermatological Association in Cleveland on May 31 and present his report. Before he reached Gibraltar, however, the disease had declared itself as typhoid fever and it was thought safer for the patient to leave the ship there and seek the care of the Colonial Hospital. There he remained for eleven days, and died on the eve of the meeting of the Dermatological Association.

Dr. Allen was born in Flemington, N. J., December 4, 1854. He was educated in Nantes, France, and at the Phillips Academy at Exeter, N. H. He began the study of medicine at Harvard, but later came to New York, obtaining his degree from the College of Physicians and Surgeons with the class of 1878. After post-graduate courses of dermatological study in Paris and Vienna he began practice in this city in 1880. He gradually confined his attention more and more to dermatology, and soon won for himself a reputation as an acute observer and successful practitioner in this specialty. He was a skilled worker in Roentgen-ray therapy, and a little over a year ago wrote a lucid work on the subject, entitled "Radiotherapy, Photography, Radium, and High-Frequency Currents." He was also the author of "The Practitioner's Manual," "The Handy Book of Medical Progress," the chapter on Diseases of the Tongue in the "Reference Handbook of the Medical Sciences," and several chapters on subjects relating to dermatology in the "Twentieth Century Practice of Medicine." He was also a frequent contributor to the periodical literature of dermatology and radiotherapy. For very many years he was a valued member of the editorial staff of the Medical Record, although of late the demands of a large private practice had left him little time for editorial work.

Gregarious in his tastes, genial in disposition, and gifted with humor, Dr. Allen was popular in a wide circle of acquaintances, lay and medical, and warmly loved by those who were so fortunate as to be counted among his friends and intimates. A careful student and a facile speaker, he was naturally a prominent figure at society meetings, ready with original paper or no less original discussion to do his share in the general exchange of ideas. He will be sadly missed, cut off untimely in the prime of his professional life.

Correspondence.

FIFTEENTH INTERNATIONAL MEDICAL CONGRESS.

(From Our Special Correspondent.)

UTERINE RETRODEVIATIONS AND MYOMATA—CESAREAN SECTION—TUBERCULOSIS OF THE EYE—PATHOLOGY OF DIABETES—HIGH FREQUENCY CURRENTS IN SKIN DISEASES.

Lisbon, April 29, 1906.

Richelot of Paris took as his subject the treatment of retrodeviations of the uterus. He said that there were two types of such lesions which must be clearly distinguished. In one of these the uterus was drawn backward by adhesions resulting from diseases of the adnexa, etc., and in the other the uterus appeared perfectly healthy except for its malposition and enlargement. It had been maintained that in the second type no symptoms were produced, and that the complaints of the patients were of nervous origin. Richelot did not consider that this was so, and stated that he had observed eighty cases, of which he had followed forty very carefully. Thirty-nine of these patients had been relieved by operation and many had undergone subsequent pregnancies without mishap. The eighty patients had all been treated according to the excellent method of Doléris.

Tuffier of Paris and Rouville of Montpellier reported their results in the treatment of uterine myomata. They considered that the internal treatment of these growths was purely symptomatic and that palliative procedures were to be avoided as much as possible. The conservative operation was to be preferred, and the vaginal route was to be chosen for tumors projecting into the uterine cavity and for small myomata of the supravaginal portion of the uterus. The abdominal operation was preferable for all other cases. The size of the growth was never a contraindication to the operation, though the great numbers of the tumors or their close proximity to each other might increase the technical difficulties and might in some cases make the conservative

operation impossible. In cases in which any suspicion of carcinoma existed hysterectomy was to be preferred to enucleation. Vaginal hysterectomy was feasible when the uterus was small and freely movable, but could not often be carried out. Total hysterectomy was to be preferred to the supravaginal operation when the cervix was involved or when suppurative foci had been discovered in the organ, making infection of the stump seem likely. The ovaries should be preserved if possible. Pregnancy did not form an indication for operation unless the situation of the tumors was such as to interfere with the development of the fetus.

Palderini of Bologna spoke of the cesarean operation, its indications and technique. He said that the abdominal and the vaginal procedures must be recognized. The mortality of the Porro operation with its numerous variants had been reduced from 15 to 6.8 per cent., and in this connection it was to be remembered that the operation was often done on septic cases and on those in which more conservative attempts had failed. The greatly simplified Saenger's operation was gaining more and more adherents and was particularly suitable for cases with contracted pelves. Vaginal cesarean section was indicated in contraction of the soft parts, but when it was undertaken the possibility of the necessity for resort to total extirpation on account of hemorrhage had always to be kept in mind. If repeated cesarean section became necessary on the same woman sterilization should be considered.

Collins of London read a paper on tuberculosis of the eye and contributed a very detailed review of the subject, beginning with a historical résumé. He then discussed the value of the histological and bacteriological tests for determining the tuberculous nature of the disease. After this he described the exogenous and endogenous tuberculous affections of the eye, and stated that they were much commoner than was usually believed, especially tuberculosis of the choroid. The invasion of the different structures of the eye, including the iris, ciliary body, choroid, cornea, sclerotic, retina, and optic nerve, was described in detail. Symptomatology and diagnosis were also elaborated, and internal and surgical treatment were given due attention. Iridectomy was said to be applicable in but few cases and was to be condemned, while the method of election consisted in enucleation combined if necessary with total exenteration of the orbital tissues.

F. W. Pavy of Guy's Hospital presented a paper on the pathogeny of diabetes in which he descanted at considerable length on the metabolic problems involved in the study of this complex disease. There was evidence to show that an internal secretion derived from the pancreas was concerned in keeping the system exempt from the conditions existing in diabetes and in preventing the failure of carbohydrate assimilation. There were two sources, of a contrasting nature, for the sugar. In the one the sugar met with was the issue of a defective anabolism or molecular building-up, and in the other, an abnormal catabolism or breaking-down of molecules into which carbohydrate had been previously incorporated. The former corresponded with the "alimentary" form of the disease, the latter with the grave, or the "composite" form. The underlying cause of the disease was, however, to be sought in a disturbance of vasomotor control probably etiologized by an abnormal cerebral activity, and on this account it was possible to consider diabetes as a disease belonging to the neurosis class, the difference in this case being the implication of a particular vasomotor area instead of structures connected with voluntary motion, sensation, and the mind.

Dr. Charles W. Allen of New York contributed a paper on high frequency currents in skin diseases, in which it was stated that currents of high voltage and high frequency were of decided benefit in treating a large number of dermatological diseases. High frequency sparks had not only a surface, but a penetrating effect. They were useful in diagnosis, detecting disease in apparently healthy skin, and sought out, as well as destroyed, remnants and recurrences in scar tissue. Epithelioma, lupus, lupus-erythematosus, and lichen planus were among the diseases most benefited. In pruritic and painful affections the spark was of decided utility, and in the destruction of moles it acted promptly and painlessly. The author therefore considered it a great prophylactic measure against malignant degeneration in such growths.

Another Nostrum Fraud.—A man went into a chemist's shop and bought a bottle of some patent stuff, which was advertised thus: "No more Coughs, No More Colds. 1s. 1½d. the bottle." Three days later he went to the chemist, complaining that his throat was stopped up and that he could scarcely breathe. "I've drunk all that patent cough mixture," he said. "Drunk it?" yelled the chemist, "why, that's an india rubber solution to put on the soles of your boots!"—*London Tit-Bits.*

OUR LONDON LETTER.

(From Our Special Correspondent.)

DENTAL SURGEONS' MEETING—JUBILEE OF MEDICAL HEALTH OFFICERS—CANCER OF THYROID—EVISCERATION IN ABDOMINAL SECTION—CYST OF THE PANCREAS—LAMINARIA—LORD GLENESK ON HOSPITAL ADMINISTRATION—HOSPITAL FOR ANIMALS—SANATORIUM FOR MIDDLESEX—CHRISTIAN SCIENCE AND PECULIAR PEOPLE—BARON TAKAKI—LEGACIES TO CHARITIES

London, May 18, 1906.

Yesterday at the Examination Hall of the Royal Colleges the annual meeting of the British Dental Association was opened. The proceedings are being continued to-day and will close to-morrow. The members and their lady friends were given a reception at the College of Surgeons, and in the evening there was another reception by the Lord Mayor and Lady Mayoress.

The dentists have often given an object lesson to the General Medical Council as to how to maintain their register, to observe the rights of practitioners, and uphold professional status. The new President, Mr. Leonard Matheson, in his inaugural address touched on such questions, and some of his remarks will interest you. He said that if dentistry was now coming to hold its rightful place in the eyes of the public, the press, and the medical profession, it was largely due to the work of the Association. Neither the Dentists' Act, with its results of education and registration, nor individual effort could possibly have accomplished all that has been done. By remonstrances in private and prosecutions in public the Association had compelled offenders to respect the letter if not the spirit of the law, and in so doing had made clear to an ever-increasing section of the public that there is such a thing as a Dentists' Register, that registration indicates a distinction which is well worth the while of the public to consider between the legal and illegal practitioner. As to the question of amending and supplementing the Act of 1878, the President declared they must not merely seek class protection, but that which is evidently for the public weal. As the law at present stands, a person can practise without being on the Register, so long as he does not use the title of "dentist" or any description implying in the eye of the law that he has a special qualification to act as a dentist. The public is too easily gulled to enable the Association to hope to create a rational opinion, and the only course is to persuade the legislature to render unregistered practice penal without regard to the title or name assumed. Exactly the same state is that of the medical profession. I fear the task proposed is not likely to be soon accomplished.

The Society of Medical Officers of Health celebrated their jubilee on Friday last, when Sir Shirley F. Murphy, President, delivered an address. He took for a subject "The Medical Officer of Health, 1856-1906," and indicated the several ways in which the Society had assisted these officers in the various problems in which they are concerned. The administrative measures adopted for the prevention of infectious diseases, the variations in the death rates, and especially infant mortality, the consequences of overcrowding, and insanitary areas occupied a considerable part of his discourse. Passing then to the more definite subject of his address, he urged medical officers to be prepared at all times to widen the horizon of their views and to avoid any approach to a narrow specialism. In their actual administration they must not go beyond the wishes of the people as expressed by their local authorities; but their duty was to place all the facts as well as the advantages and disadvantages concerning any measures they might recommend before those authorities. Upon these and on Parliament would remain the decision as to the extent to which such measures should be enforced. He urged them to have patience, even though they had to witness disasters in family life through neglect to secure protection from disease, as in the case of smallpox. Great as had been the services rendered to the public by the Medical Officers of Health during the last fifty years, Sir Shirley expressed the fullest confidence that they would do much more in the future.

At the Clinical Society Mr. Hudson read a paper on Carcinoma of the Thyroid Gland. He described eight cases which exhibited the usual features of malignant tumor and six others in which the clinical features were not present, but the tumors showed the histological structure of cancer. Two tumors discovered at the necropsy were also described. These cases seem to indicate that cancer more frequently affects the thyroid than is commonly supposed, and also is perhaps more amenable to surgical treatment than might be expected, conclusions which are enforced by other cases related in the discussion. They further illustrate the difficulty of estimating the degree of malignancy of epithelial thyroid tumors. Evidence of invasion of adjoining tissues or of metastasis is most important.

Mr. Clutton, President, gave an account of several cases he had had, and expressed the opinion that as regards life

prognosis is better than usually thought. His first case was operated on in 1886 and is still well. In diagnosis he attached importance to a high degree of fixity of the tumor to the trachea. These tumors were often overlooked, being taken for simple adenomata. He thought metastases rare.

Mr. Wirgman differed as to this last point, many metastases having been recorded, usually in the vascular bones, from Douglas's pouch so that liquid might flow in the patient, who might be unaware of the thyroid tumor. He had met with two such cases recently.

Mr. Spencer remarked that in the thyroid a perfect gradation could be traced from simple adenoma to the most malignant growth, and this applied to metastatic as well as primary growths.

Mr. Hudson in reply said the questions of malignancy and of metastasis might depend on tissue resistance. An apparently benign growth might invade other structures in a malignant way if the patient were in a low condition.

Mr. Roughton related a case of perforated gastric ulcer in a woman of 26 treated by evisceration and irrigation within six hours of the perforation. There was little shock and rapid recovery. The reason of his procedure was that the contents of the stomach had escaped very freely, soiling all parts of the peritoneum. The small intestines were turned out and the cavity thoroughly irrigated from Douglass' pouch so that the liquid might flow in the opposite direction to the extravasated fluid and so minimize risk of infection.

Mr. Spencer remarked that the objection to evisceration was not shock so much as increase of tympanites produced, making it difficult to return the intestines and increasing the strain on the sutures. This was particularly so in late cases.

Mr. John D. Malcolm related a case of complete removal of a multilocular cyst of the pancreas, followed sixteen days later by anastomosis between the transverse and descending colons, on account of partial intestinal obstruction which developed in the meantime. The difficulty was at the splenic flexure, and after the second operation there were no further symptoms. The tumor is preserved in the College of Surgeons' Museum where there are two others, which seems to indicate their rarity. Only two were reported in the *Medical Society Transactions* and *Pathological Transactions*, but Dr. Fitz collected eight (*American Journal of Medical Sciences*)and Dr. Dunning one (*American Journal of Obstetrics*, 1905). Mr. Clutton mentioned at the meeting a case on which he operated some years ago. The diagnosis is naturally beset with difficulties. In fact, most cases have been regarded as renal or ovarian until operation. Complete removal was considered the only rational treatment.

Sir William Sinclair exhibited at the Obstetrical Society a number of fine specimens of laminaria obtained from islands off the west coast of Scotland. These specimens were superior to most that are found in the market, and good-sized uterine tents could be made from a single piece, which are certainly better than those made by joining sections of the material, for these latter are liable to cause irregular dilatation. Sir William said laminaria tents gave far better results than rapid dilators, and regretted that in some quarters they had gone out of use.

As to the last remark, Dr. Herman said they had not gone out of fashion so much as some supposed, for they had been in use in the London Hospital for the last thirty years. Dr. Spencer also stated they had been continuously used at University College Hospital for the last twenty-five years, and he could not imagine any gynecologist would dilate a rigid senile cervix by the rapid plan in order to explore with the finger.

Dr. Boxall said the only objection to tents was the possibility of infection, but laminaria could be sterilized by dry heat in the domestic oven and was improved by the process. Dr. Parsons rather preferred metal dilators.

Dr. Lewers said the point was the degree of dilatation required. It was in many cases impossible to dilate sufficiently by the rapid method without causing laceration. When that happened it would not be limited at the will of the operator. It might be slight, or it might extend through into the broad ligament or the peritoneal cavity. As a rule he used tents the day before exploring, and then if necessary a few Hegar's bougies under anesthesia.

Lord Glenesk, presiding at the thirty-fifth annual meeting of the Chelsea Hospital for Women, made some practical observations on management. He declared large debts meant bad administration. People who gave money liked to see it well used, not always sunk in the payment of debts. Their hospital was a living illustration, and though living from hand to mouth for some time, was now beginning a reserve fund. A lady who had done much for them had lately died at the age of eighty-four. This was Mrs. Everard (known as H. M. E.). She was a practical woman, knew what the hospital was doing, and gave freely while living, determined to leave nothing at her death. Since 1894 she had given this hospital some £8,000 and an emergency fund had been formed which in case of necessity could be utilized.

The Duchess of Teck on Tuesday opened a hospital for sick animals in London. It is filled up with every requisite for the treatment and comfort of the animals. During their stay they will be attended by the staff of veterinary surgeons. The object is that such care may be obtained gratuitously by poor owners for their sick animals. It was stated that the staff is prepared to receive any ailing creature from a canary to an elephant. Provision has also been made for lending a pony or donkey to a poor man while his own is in hospital.

An influential meeting was held on Tuesday to discuss the proposal to establish a sanatorium for Middlesex. The scheme has been talked about for a couple of years or so, but the money is not forthcoming at present. The projected building is to be of the simplest and least expensive character, but it was stated that it must cost £300 per bed. Does it not seem that too much is being spent in bricks and mortar? Architectural experts are apt to indulge in extravagance.

The "Dr." Adcock concerned in the "Christian Science" case, and who said he was qualified, but did not know if his name continued on the Register, as he had given up practice for "Christian Science," has been committed for trial for manslaughter. The detective who arrested him said he had an injection syringe and tablets of morphine and of strychnine upon him. In the "Peculiar People" case the man who was committed for manslaughter of his child by not admitting medical treatment, has during the interval lost another child, and the same verdict was found at the inquest, so there are two charges against him at the same time. It will be curious to note the result in the two cases —one an educated man, the other a laborer.

Durham University has conferred its honorary degree of D.C.L. on Baron Takaki, former Surgeon-General of the Imperial Japanese Army.

The late Mr. Edward Steinkopff, founder of the Apollinaris business, left an estate of over £1,200,000. After disposing of much, he left the residue in trust for his daughter for life, and then for such institutions or charitable objects as she may appoint.

The late Mr. Richard Twining left sums amounting to £1,000 among several hospitals.

OUR PARIS LETTER.

(From Our Special Correspondent.)

THE COURRIÈRES CATASTROPHE—ASEPTIC FEVER—NOTIFICATION IN TUBERCULOSIS—RENAL DECAPSULATION IN ECLAMPSIA—SCOPOLAMINE-MORPHINE ANESTHESIA—THE BACTERIOLOGICAL DIAGNOSIS OF SYPHILIS—CYSTOSCOPY IN PREGNANCY—DEATH OF M. CURIE.

PARIS, May 3, 1906.

THE spirit of unrest which has shown itself in so many of the labor organizations at the approach of the first of May has reacted indirectly even on the medical world. The compositors and printers of Paris having decided to strike, nearly all the medical publications have on this account been suspended and medical intellectual life has therefore been if not checked at least much interfered with.

The details of the catastrophe at Courrières, where more than 1,000 miners met their death, are already well known, but the most extraordinary part of the affair is perhaps the account of the wanderings of fourteen miners who after twenty days of unspeakable suffering were taken alive from the wrecked mine. Forced to sustain themselves on oats, the bark of wood, and putrid meat, and satisfying their thirst with a mixture of stagnant water and urine, they triumphed over death and emerged still living from the depths of the earth. It is hard to understand how it was that these men should have been able to withstand such conditions, why they were not poisoned by the ptomaines of the decomposing meat, and how they managed to live for twenty days in an atmosphere vitiated by poisonous vapors, without light and almost without air. The endurance and the powers of resistance, but especially the spirit of indomitable courage, exhibited by these fourteen miners may truly be termed admirable.

At the Académie des Sciences, Charrin and Jardry presented the results of their observations on aseptic postoperative fever. It happens often enough that after certain operations and even after confinements sudden rises of temperature appear which reach a considerable elevation and then disappear again with equal rapidity. Fever of this sort, in view of its intensity, is well calculated to give rise to much anxiety, for the frequency of infection after operations causes the surgeon to suspect some bacterial process, of which the prognosis is usually grave. The authors have carried out a series of experiments which

tend to show that among these elevations of temperature there are many which need give rise to no anxiety. Such manifestations are caused by chemical toxins which are not living and are therefore incapable of reproduction or of causing infection. In the serous exudations, and especially in shed blood, the authors were able to demonstrate substances, probably belonging to the class of the ferments, which could incite elevations of temperature.

At the Académie de Médecine the discussion on the notification of cases of tuberculosis and the disinfection of the dwellings of consumptives was concluded. Huchard stated that he believed that compulsory notification only after death was a totally inadequate measure, as the danger of contagion was not obviated, and on the other hand compulsory notification during life involved the gravest disadvantages. The struggle against tuberculosis then became a struggle against the tuberculous, and this was something to be avoided at all costs. In addition, it was necessary to take into consideration the position of the physician and the matter of professional confidence, which had to be preserved. He considered that the most important thing in combating the disease was the question of the soil it developed in, and that the object to be sought after was to protect those who were predisposed owing to poverty, poor ventilation, unhygienic dwellings, and alcoholism. The discussion has now been closed and M. Guéniot, the president, is about to transmit to the tuberculosis commission the various opinions that have been delivered before the Académie. The commission will combine these in one or more resolutions which will be presented to the Académie to be voted on.

The Académie then heard the report delivered by Pinard concerning the work done by Chambrelent and Pousson on decapsulation of the kidney and nephrotomy in severe types of eclampsia. The authors first stated that the etiological theory which was most widely accepted at present was that in which eclampsia was regarded as a form of intoxication through the blood stream, produced by a poison whose origin was still undetermined and which gave rise to lesions of the liver and kidney. In eclampsia renal decapsulation and incision of the parenchyma of the organ relieved the intrarenal tension and congestion. In addition the bleeding which accompanied nephrotomy was directly beneficial. The authors referred to numerous instances in which eclamptic patients whose condition had appeared hopeless had been saved by this means. They also referred to the work done by Edebohls in this connection, but while this author advised simply decapsulation of the kidney in these cases, they recommended incision of the parenchyma as well. Pinard, in concluding, said that these measures were very useful in cases of eclampsia, but he did not recommend surgical intervention except in the cases accompanied by anuria, in which there was a very considerable elevation of the intracapsular pressure in the organ.

An interesting discussion was started by Routier before the Société de Chirurgie on the subject of scopolamine-morphine anesthesia. Routier thought that the favorable effect of this combination on chloroform anesthesia had been exaggerated. There were great differences in the behavior of patients under chloroform anesthesia, and subcutaneous injections of any sort or elaborate inhalers could not change this fact. The most important factor was the way in which the chloroform was given, and he would continue to feel more confidence in a good anesthetist who used only a simple compress, than in all the so-called perfected procedures and appliances, which, after all, had succeeded in obviating completely only two of the principal drawbacks of chloroform anesthesia, the preanesthetic excitement and the postanesthetic vomiting. Terrier replied by presenting his personal statistics of scopolamine-morphine anesthesia. His list comprised seventy-one cases, and in none of these were any complications ever noted. On the contrary, patients who had previously been subjected to the action of chloroform alone and who had given rise to uneasiness by the way in which they took the anesthetic, were anesthetized in a positively ideal manner when the scopolamine-morphine combination was used in conjunction with the chloroform. Chaput also spoke in favor of the new method which he had tried in thirty cases, and Segond, who had used it in twenty laparotomies, also advocated it. He considered that the procedure was of the greatest value, particularly in dealing with nervous or alcoholic patients and with those who had suffered much discomfort as the result of former anesthetizations. Jalaguier said that he had used this method of anesthesia twenty-one times and that he had been as favorably impressed with its advantages as had been the speakers who preceded him.

At the Société Médicale des Hôpitaux, Thibierge, Lesourd, and Ravout presented a study on the bacteriological diagnosis of syphilis and the spirochete of Schaudinn. As a result of their experimental work the authors concluded that in doubtful cases of syphilis three diagnostic methods should be resorted to. The simplest was to examine scrapings of the lesions smeared on slides; if this gave negative results, sections should be made of small fragments of tissue removed for the purpose, and finally, if necessary, blood cultures should be made. These methods were identical with those which justified the diagnosis of tuberculosis in a lesion.

Bar and Luys presented an important contribution before the Société d'Obstétrique on the use of the direct vision cystoscope for the examination of the bladder in pregnancy. It was pointed out that toward the latter part of pregnancy the intravesical segregation of the urine with the segregator became impossible on account of the distortion of the bladder caused by the growth of the uterus. Nevertheless it was sometimes necessary to ascertain the condition of the urine secreted by each kidney and then ureteral catheterization appeared to be the only resource. In order to effect this the direct vision cystoscope would be found very easily applicable, both on account of its form and on account of the practically perfect asepsis with which the ureters could be catheterized. In these cases it was much more useful than the prism cystoscope. The authors then described the distortions of the bladder which might be observed during pregnancy. Finally, from the practical standpoint they emphasized the value of the direct vision cystoscope in performing lavage of the ureters and of the renal pelvis in cases of pyelonephritis.

French science has just lost one of its most promising lights in the person of M. Curie, who, as everyone knows, played so important a rôle in the discovery of radium. This eminent scientist, still in his youth, met with his death in a street accident, being run over by a truck. His important researches had secured for him the award of the Nobel prize. He spent nearly all of his time in his laboratory in the Sorbonne, together with his wife, who was his collaborator and took part in his researches.

OUR LETTER FROM COPENHAGEN.

WORK OF THE COPENHAGEN MEDICAL SOCIETY—REGULATION OF PROSTITUTION—THE WIDAL TEST WITH DEAD CULTURES—DEATH OF PROF. HASLUND.

COPENHAGEN, May 16, 1906.

As the scientific sessions of the Copenhagen Medical Society have now closed for the winter term it may be deemed appropriate to review the communications of particular interest made there. At the first meeting of the season Prof. Saxtorph read a paper on spinal stovain anesthesia. He had used the method without accident in 150 patients for operations of many different kinds on the lower extremities, and was very favorably impressed by its effects. At a later session Dr. T. F. Fischer showed some cases of epithelioma of the face cured by Roentgen-rays, and mentioned having used the treatment in 20 cases, the result being that 10 patients were cured, 6 much improved, while in four only a transitory amelioration was effected.

Dr. P. Tetens Hald read a paper on treatment of deformities of the nose by paraffin injections. He had till then treated 49 cases, all with good and for the most part even excellent results, as showed by the presentation of patients' photos and plaster-of-Paris casts. He exclusively injected in a solid state a paraffin melting at 50° C. or at a higher temperature, and was prompted to do so by the fact that all published ocular accidents had occurred after the injection of a paraffin with a lower melting point.

The most important paper of the season was without doubt that read by the well-known authority on surgery of the urinary tract, Prof. Thorkild Rovsing. In a masterly manner he treated the question of the importance and curability of vesical tuberculosis and illustrated his paper in the most interesting way by exhibitions of specimens of extirpated kidneys, lantern slides of microscopic preparations, etc.; several cured patients were also present.

Prof. Tscherning showed a case of thyroidectomy for exophthalmic goiter and of lienectomy together with other surgical rarities. Among these was an unusual case of foreign body of the bladder, consisting in the whole handle of a toothbrush. The operator, who by the examination of the patient was led to expect a stone, was more astonished at his finding than the patient himself, who, after the operation, owned to have an indistinct recollection of a public girl having pushed the handle down his urethra on an occasion when he had paid her a visit in an intoxicated state.

It is highly to be regretted that the Danish legislative body does not count more than one medical man among its members. Had the profession been more fully represented, perhaps we should have been spared a new, and I fear not too good, law tending to the regulation of the prostitution in Denmark. Here, as in all parts of the world, the contest has been between the partisans of a control of prostitutes and those who will

not admit any control of them. The latter party altered the old law according to which a female, if found guilty of prostituting herself, was first admonished and if caught *in flagranti* for a second time was enrolled among the *pucllæ publicæ*. On these (in Copenhagen amounting to about 700) the police authorities enforced a biweekly medical examination, which eventually resulted in treatment in a hospital *ad hoc*. The new law does not punish prostitution as such, and makes totally away with the mentioned odious official enrolling of females. So far so good. But the beneficial effects of the law are certainly marred to a regrettable degree by two unlucky regulations: the one authorizes the police to arrest and punish as vagabonds such suspected women as cannot convince the authorities of their being able to make their living in a decent manner. It is much to be feared that as a result only the poor prostitutes will be punished and that arbitrary proceedings on the side of the police will become more numerous than formerly, though the intent of the new law confessedly is to prevent such. Another unlucky feature is the regulation that obliges the practitioners to report to the authorities on all such patients with venereal diseases, seen and treated by them, as cease to consult them before being discharged as cured. Nobody liking to have his name mentioned in connections of this sort, the last mentioned regulation may result in the infected abstaining from seeking proper treatment, and, instead of that, going without treatment or falling into the claws of quacks. And I am afraid that it will not be counterbalanced by the excellent regulation providing private dispensaries where any venereal patient has the right to be treated free of cost, whether he be rich or poor. Though well aware of the uncertainty of statistics on this sort of subject, one cannot help looking forward with great interest to a comparison of the frequency of venereal diseases in Denmark before and after the new law.

Dr. George Dreyer, assistant bacteriologist to the University of Copenhagen, who for a series of years has contributed several valuable papers on bacteriological topics, has recently published an article of great practical interest on the use of dead cultures of the typhoid bacillus for the Widal test. The idea is not new in itself. As early as 1897 Widal was aware of the advantage of handling dead typhoid bacilli instead of live ones, and showed that the specific agglutination occurred also in cultures killed by addition of 6.7 per cent. formol. But the importance of Dr. Dreyer's work is found in two circumstances, the one being that the agglutinability of the cultures killed after this method is a little superior to that possessed by fresh living cultures, while for instance the much recommended Ficker's *Typhus diagnosticum* (also a killed culture) is considerably inferior to living cultures, as shown by Dreyer. (It is perhaps not without interest to observe, that Dreyer publishes his method with all particulars, while the production of Ficker's diagnosticum is kept a secret.) The other interesting feature of Dreyer's method is that his killed cultures retain their agglutinability unaltered for one-half to one year. As a thermostat is not strictly necessary, the method may be expected to appeal very much to the general practitioner, especially in the country, because it enables him to do his Widal tests himself without having the trouble of working with live typhoid bacilli; the only thing he has got to do is to procure once or twice a year a little quantity of the dead culture.

Some time ago the dermatologist Prof. Alexander Haslund died, aged sixty-one. He was an excellent diagnostician and very popular with the younger members of the profession, to most of whom he had been a teacher as lecturer to the University on skin and venereal diseases. His scientific works are chiefly to be found in the *Archiv für Dermatologie und Syphilis*, of which he was a coeditor.

To Prevent Struggling During Narcosis.—Gersuny has found the following plan useful in controlling the struggles of patients passing through the earlier stages of anesthesia: The hands and forearms are enclosed in long cuffs of celluloid which project several inches beyond the tips of the fingers and make it impossible for the patient to grasp the hands of the anesthetist or the inhaler; the cuffs are kept from slipping off by a tape fastened to the upper end of each and passing over the patient's shoulders. Attempts to sit up are easily frustrated by having a nurse place her hands under the patient's heels and keep them continually raised one or two inches above the surface. As long as the heels are elevated it is impossible for anyone to sit up, and it requires no muscular strength to effect this.—*Wiener klinische Wochenschrift.*

Progress of Medical Science.

Boston Medical and Surgical Journal, May 31, 1906.

The Complications of Acute Pneumonia.—H. Jackson has studied the complications of acute croupous pneumonia as found in the records of 1,320 cases treated at the Boston City Hospital. Of complications directly connected with the lung there were 22 cases of empyema, 4 of lung abscess, 3 of gangrene, 23 of pleurisy, with large effusion, 5 of unresolved pneumonia. Of lesions of other organs there were 22 cases of pericarditis, 6 of phlebitis, 3 of meningitis, 1 of joint disease, and 2 of neuritis. This tabulation is made up, not on the basis of the exact pathological findings of the pathologist, but on that of the clinical features of the disease. Hence there is no record of kidney or of heart complications, except in a few instances in which acute endocarditis was a prominent feature of the primary disease. Failure to recognize empyema is, according to the author, one of the commonest mistakes of physicians; the patient is supposed to have unresolved pneumonia. These empyema cases may be possibly tuberculous in nature. Summaries are given of the histories of the six cases of phlebitis, the three of meningitis, and the two of neuritis.

Stiff and Painful Shoulders.—An elaborate paper on this subject, with a series of excellent photographs, is contributed by E. A. Codman. These patients complain of stiffness and pain in the shoulder joint and upper arm. A characteristic complaint is the inability to put the arm back of the neck or behind the small of the back. Women cannot do up their back hair, while men cannot button the back of their suspenders. These cases are variously called rheumatism, fibrous ankylosis, deltoid paralysis, periarthritis, etc. The author is inclined to find an explanation in abnormality of the subacromial or subdeltoid bursa, as this bursa is indispensable in abduction and rotation of the arm. It may be inflamed as a result of trauma, fixation, as after certain fractures and operations on the breast, hand, and arm, and sepsis. Most minor lesions of the shoulder joint involve the bursa, and few involve the true joint. For acute cases, the indications are to relieve pain, give physiological rest during the inflammatory stage, and later to prevent adhesion of the inflamed surfaces. In the chronic cases the author uses a special splint described and figured. He emphasizes the point that complete abduction (elevation) of the humerus necessitate external rotation. This observation has not been previously mentioned as far as the author knows, nor has that of preventing the reformation of adhesions by a splint which holds the arm in abduction and external rotation, thus bringing raw surfaces opposite healthy ones, a result which the author's splint effectually accomplishes.

New York Medical Journal, May 26, 1906.

Danger to Healthy Individuals in Visiting Resorts Frequented by the Tuberculous.—In the consideration of this question J. H. Way, who lives in one of the resort towns of the Carolina mountains, refers to statistics collected at other similar places, and presents the following conclusions: Nontuberculous individuals necessarily incur no danger of infection with tuberculosis in visiting or residing at modern health resorts frequented by patients with pulmonary tuberculosis. There is less danger of contracting pulmonary tuberculosis in a well regulated modern health resort than elsewhere. Health resorts for tuberculosis are almost invariably places where it has been originally noted that the average of deaths from tuberculosis among the natives was remarkably small. The climatic and other local conditions which originally permitted so small a development of tuberculosis among the natives continues to render them relatively (not absolutely) immune, and as well to beneficially impress the visitors to such resort. Considered in the light of most recent scientific knowledge, it is doubtful if the infective dangers of street expectoration are so great as we have previously believed. The average greater degree of sanitary knowledge and practice prevailing to an extent among all classes at a modern health resort is also highly conducive to the physical improvement and gain shown by the immense majority of visitors to our mountain resorts. The most careful attention to sputum indoors, thorough ventilation, and open-air life so much in vogue at the modern health resorts for tuberculosis, render them safer and should be continued.

Dyspepsia Neurosa.—By this title M. Gross refers to an interference with the rhythmical action of the stom-

ach by some disturbance of nerve function. The local findings are generally limited to an abnormal acidity and an irregular motility. A prolongation may lead to certain anatomical change in the stomach wall. Subjectively the patient complains of hyperesthesia, not always caused by hyperacidity, so-called relative hyperesthesia, changeable appetite, constipation alternating with diarrhea, are varied by complaints of a general feeling of depression, sleeplessness, ill humor, and great liability to fatigue. In the morning the patient complains of feeling ill and of pressure about the head. The pain, a regular occurrence, is rather diffuse, and while at times it has no connection with the ingestion of food, at other times it seems caused by it. Vomiting is often attributable to pyloric spasm. One author mentions a hyperesthesia, a diffuse sensitiveness to pressure in the gastric region, which is distinctly demarkated by the outlines of the stomach. Treatment embraces constitutionally the various measures which have been found useful in neurasthenic patients in general. Locally we may apply poultices in hyperesthesia with good results, also Priessnitz's and warm hip baths. Sleeplessness can be removed by warm baths, followed by lukewarm douches, or by cold friction before going to bed. Other beneficial hydropathic measures are sponge baths and cold dressings. Sea baths are borne well only by robust individuals; the same refers to sea air. The author has never seen any utility from electricity.

Anterior Metatarsalgia and Its Treatment.—S. Epstein refers to the condition originally described by Morton, defining it as pain and discomfort about the anterior metatarsal arch, below and behind one or more toes. He goes at considerable length into the mechanics of the foot, describes the symptoms, and refers to three personal cases of erythromelalgia, or Weir Mitchell's neuralgia, all of which were in the foot. The first requisite in treatment is the wearing of a proper shoe. Daily massage and forcible manipulation of the toes go a long way in overcoming rigidity. Corns should be carefully removed. Faradism is the preferable mode in which to employ electricity. When the condition is associated with flat foot, the latter should be strapped in the adductor position. This is only a temporary measure, however, and should be supplemented by raising the inner border of the sole of the shoe, the wearing of a Whitman's plate, and exercises calculated to strengthen the tibialis muscles. Few cases require the operation advised by Morton. In the erythromelalgia cases, marked benefit followed the swabbing of the foot once a week with pure carbolic acid, followed by immediate washing off with alcohol.

Journal of the American Medical Association, June 2, 1906.

Quarantine and Its Relation to Public Health.—M. J. Rosenau reviews the recent aspects of quarantine in its relations to public health, and states that it may be likened to jails, penitentiaries, houses of detention, and other necessary evils of this world. He outlines briefly the work of the Federal quarantine service, and enumerates the diseases which have been stricken from the list of quarantinable diseases. He discusses the limitations of disinfectants, and states that disinfection is no longer regarded as a panacea. Sanitation, he declares, is the only cure for quarantine regulations, and says that if all communities, especially seaports, were to place their cities in the best sanitary condition, in accordance with the teachings of modern science, there would be little danger of disease spreading to epidemic proportions, and practically no need of quarantine restrictions. Modern sanitation is very expensive. It means thorough drainage, proper disposal of wastes, good paving, pure water, and cities constructed with sufficient breathing spaces between houses, so that all the inhabitants may receive their proper proportion of fresh air and sunshine; it also includes the destruction of mosquitos, rats, and other vermin which help to spread disease, and a proper supervision of the food supply. He discusses the lessons to be learned from the recent yellow fever epidemic, and reviews the opinions of various observers regarding the hereditary transmission of the yellow fever parasite in the mosquito.

The Renaissance of Therapeutics.—R. C. Cabot remarks that the prominence gained by surgery from its brilliant and beneficent successes is being moderated to some extent, by lessening the anxiety of surgeons for operation and by the result of hygienic treatment of osseous and glandular tuberculosis. As surgery settles into its place, a new wave of therapeutic activity is arising along other lines. The treatment of tuberculosis, which was formerly regarded as very nearly hopeless, now shows what may be called an aggressive spirit in therapeutics, the results of which are remarkable. In the cold, damp, changeable climate of Boston not merely the ideal patients, who have an incipient lesion, good courage and backbone, a country house, and real intelligence, are being cured, but some of the stupid, discouraged, slum cases, that were formerly abandoned as (under the circumstances) hopeless. Another example of this aggressive spirit is shown by the attitude of the school physician, who now insists on general physical examination of every child in the school at least once a year, whether it complains or not. The campaign against tuberculosis is now interesting the public as well as the profession. The increasing prevalence of therapeutics is another indication of advance. The physician also becomes aware of the importance of psychic factors in the production of disease. It is going to be recognized as a legitimate and, indeed, an essential part of therapeutics to seek for the relief of any cause that is producing disease. This necessitates the investigation of social, industrial, and family conditions. The recognition of social and psychic factors as causes of disease, and the measurably successful effort to reach and to modify these causes, is one of the most striking marks of the present rebirth of therapeutics. In the newer psychic and sociological fields which medicine has begun to invade, women will find a large field of usefulness. The effective application of all therapeutics (if you except surgery), Cabot states, is women's work. These changes in therapeutics are accompanied by the beginning of the end of many evils, especially the false mystery that has often encompassed the doctor and the conception of drugs as the *alpha* and *omega* of therapeutics. He concludes as follows: "(1) Therapeutics has become, within the past few years, very noticeably more effective. (2) This increased effectiveness is the result of (*a*) the aggressive spirit, as exemplified by the work of the New York Board of Health in school hygiene and school inspection, and by the tuberculosis work now being carried on in Boston; (*b*) the greater part now being taken by the laity in medicinal work, both by intelligent cooperation and by financial support; (*c*) our greater acquaintance with physical therapeutics, especially with the details on which their successful application depends; (*d*) the rise of scientific mind cure and of social work, marking a recognition of the psychical and of the social elements in all disease; (*e*) a wider utilization of the unique talents of women in the field of therapeutics. (3) With the rise of the type of therapeutics here described, we are now witnessing a limitation of the sphere both of surgical therapeutics and of drug therapeutics. The latter limitation will do much to undermine the superstitions on which the 'patent-medicine' habit rests."

Treatment of Idiopathic Epilepsy by Appendicostomy for Colonic Irrigation.—S. LaPlace considers it probable that epilepsy is due to the manifestation of a toxin accumulated in the system as a result of the intoxication of improper food or tissue metabolism, and the locality of the production of this poison is the colon. Consequently, he has resorted to appendicostomy, with subsequent irrigation of the colon through the fistula, in one case, with excellent results. He concludes that the treatment is harmless, and is based on sufficiently sound theoretical and scientific grounds; and even should improvement of the epilepsy not result, it cannot fail to do good from a hygienic standpoint in affording general relief from constipation, to which most sufferers from epilepsy are subject. The repeated flushings of the colon keep it as nearly empty as possible, and almost eliminate its presence as a reservoir for undigested and putrefying substances. Fear of a permanent artificial opening in the intestine should not be entertained. The artificial fistula closes easily, and, after months of treatment, should one desire to discontinue the flushings of the colon, the natural processes of evacuation are resumed without difficulty. The method is not expected to cure all cases of idiopathic epilepsy, but only those whose existence can be traced to this particular cause. The procedure here advocated should be accompanied by the proper dietetic measures.

Skin Grafting.—J. E. Cannaday uses bi-daily dressings of gauze wet with chloral hydrate solution (2 grains to the ounce), and protected with oil silk, as a preliminary for obtaining a clean granulating surface. When ready to graft he freshens the granulated surface with a nail brush, which he prefers to the curette. He uses Thiersch grafts, taken by preference from the patient. The grafts are shaved by a sawing motion, one-half the thickness of the skin and one-half inch by one and a half inches in size. As soon as cut they are

turned over the left index finger, skin side next the finger, and carried directly to the denuded site and pressed down on its surface, the edges being smoothed off with a probe. The process is repeated till the area is covered. He believes this direct transplantation better than the intervention of any saline or other solution, which makes the operation more difficult and less certain. He covers the grafted site with thin dental rubber dam, crisscrossed for drainage if the area is large. Over this he places a small gauze pad, anchored with zinc oxide adhesive plaster, and externally a cotton, gauze, and bandage dressing. Some method of immobilization may be desirable, and if the grafting is done on a limb, he keeps it on the level of the body, or a little elevated. Slight pressure will keep the grafts in place and prevent serum accumulation or bleeding; too much pressure kills the grafts. He has now used this method in twenty-three cases, chiefly burns and lacerated wounds, without a single complete failure.

The Lancet, May 19, 1906.

Action on Bacteria of Electrical Discharges of High Potential and Rapid Frequency.—Interesting experiments in this direction have been made by A. G. Foulerton and A. M. Kellar. The current obtained from the electric light supply was first transformed into a rapidly oscillating current of very high potential, and then into an oscillatory discharge of rapid frequency by means of a condenser and spark-gap. The bacteria were exposed to the action of the discharger while suspended in distilled water contained in test-tubes. The authors note that in all the experiments in which a decided germicidal effect was observed, it appeared that this was due entirely to the action of substances formed as the result of electrical action on the atmosphere in which the discharge occurred; and it appeared that under the time conditions of the experiments the electrical force employed was not capable of exercising any injurious action on the bacteria tested. And it is probable that when in medical practice cases of lupus and certain other cases in which there is an exposed ulcerated surface are treated by "high-frequency" discharges, the results produced are due entirely to the action on bacteria of nitrous and nitric acids formed in the neighboring air. And from a therapeutic point of view the use of high-frequency discharges in such cases must be looked upon mainly as an efficient method for bringing germicidal substances in a nascent and very active condition into contact with the bacteria present in the lesion exposed to the action of the discharge.

Peculiar Form of Hemoptysis with Numerous Spirochetes in the Expectorations.—A. Castellani reports two interesting cases, one occurring in a Cingalese, and the other in a native Indian, both adult males. The clinical histories suggested that the cases were hemorrhagic bronchitis, as tuberculosis could be excluded with reasonable certainty. Microscopical examination excluded the possibility of endemic hemoptysis from distomum, while the large number of spirochetes in the expectoration, sometimes practically without other germs, suggested that the former were the cause of the bleeding. They were always very numerous, and stained well by the Leishman method, generally taking on a bluish tint; they could be stained also with the ordinary aniline dyes, though not so well. They were generally mixed with some bacteria, but sometimes when the sputum was collected in sterile Petri dishes and preparations made at once, they were practically the only germs present. Vincent's fusiform bacilli were never observed. These spirochetes were not all alike. They might be divided morphologically into several groups. (1) Very thick individually, from 15 to 30 microns in length, with irregular waves, which varied in number but were never very numerous. The parasites, with the Leishman method, stained deep blue; they were pointed at both ends. (2) Spirochetes resembling the *Spirochæta refringens* (Schaudinn), with a few graceful waves and pointed extremities. (3) Thin, delicate spirochetes with numerous small, rather uniform waves and tapering ends. Sometimes one of the extremities was blunt while the other was pointed. (4) Very delicate parasite, though thicker than the *Spirochæta pallida*, with very few waves, generally irregular in shape.

Hypertrophy and Dilatation of the Heart in a Child without Valvular Disease or General Adhesion of the Pericardium.—G. Carpenter and S. Fisher report the case of a boy of eight years with the usual symptoms of cardiac incompetency. The apex was in the fifth space outside the nipple line. There was a systolic murmur at the apex, and a reduplicated second sound over the pulmonary area. Cardiac dullness extended over one inch to the right of the sternum, and a to-and-fro sound was heard at the base, suggesting either an endocardial or pericardial origin. The child died after having been under observation for about four months. At the autopsy the pericardium was found free from disease. Nothing could be found to account for the basic murmur. Both pulmonary and aortic valves were intact, but the ventral and tricuspid orifices were dilated, although their valve cusps were normal. The authors believe that rheumatism may cause hypertrophy apart from valvular disease and general pericardial thickening, and ascribe this result to a poisoning of the heart produced by the disease chiefly during the growing period of life. After the age of twenty years, rheumatic pericarditis causes little or no cardiac dilatation, although this inflammation is undoubtedly an evidence of the most intense form of rheumatic heart infection.

Extensive Rupture of the Liver without External Injury.—F. S. Lloyd's patient was a man who had been crushed between two wagons and had died soon after. Excepting one or two surface scratches the body showed no marks of violence. Autopsy showed the abdomen full of blood. The liver was large, in conformity with the massive physical development of the patient, pale, but healthy in substance. Through the thickest portion of the right lobe was a tremendous fissure, running backward through both capsule and glandular substance from the anterior edge to the posterior surface, and being so complete that the liver was all but divided by it into two portions, only a narrow bridge of liver tissue about an inch thick connecting them. The fissure was straight and was eight and a half inches long, the surfaces exposed by it being rough and granular looking. The greatest breadth of the torn surface was roughly four inches, tapering thence to a point toward the anterior edge. About the center of this fissure was another contused tear three inches long, running perpendicularly to it outward to the right; this, however, only penetrated the liver substance for a depth less than half an inch; one or two smaller tears radiated from the point of junction of the major tears in a stellate manner. The gall-bladder and the rest of the liver were normal, as were all the other abdominal viscera.

British Medical Journal, May 9, 1906.

Acute Yellow Atrophy of the Liver, Following Influenza.—O. M. Booth and J. Williamson report the case of a man of thirty-one years who had had, three years previously, an attack of jaundice, and who when seen by them was in an attack of influenza of six weeks' duration. Two days later he began to have convulsions, which alternated with a typhoid condition. A jaundice gradually developed itself, the liver dullness became narrow, and the diagnosis of acute yellow atrophy was made. No autopsy was held.

Tonsillitis in Convalescence from Diphtheria.—The paper of J. D. Rolleston is based upon the observation of nine hundred cases of diphtheria, seen in hospital work during a period of three years. Apart from cases of inflammation of the tonsils, which proved at the time or subsequently to be scarlatinal in origin, the tonsillitis occurred in sixty-four cases either within or usually toward the end of the first three weeks of the disease, or at a much later period. In the first class the tonsillitis found in thirty cases was invariably associated with late manifestations of the serum, which consist of a rash generally of the type of a circinate erythema, and usually associated with pyrexia, less frequently with pains in the joints or muscles, and adenitis of the submaxillary and cervical glands. The appearances presented by the throat at this time vary from an injection of the fauces with a follicular deposit on the tonsils, to large, semi-confluent patches resembling early stages of diphtheria. They are not adherent, however, and often disappear without local treatment, leaving no ulceration. Staphylococci and streptococci are generally found in rich abundance. Secondary angina in diphtheria apart from serum manifestations is not uncommon. It occurred in thirty-four of the author's cases. The average time was the fortieth day. It occurs more frequently in adults and older children, in children, and in the damp months. Symptoms are as a rule slight. The average duration of the fever is four days, but in most cases the temperature did not rise above 101°. The pulse was rapid, but examination of the heart was negative, nor was there anything to suggest a rheumatic infection. The faucial exudation was almost always discrete, disappearing in a few days without local treatment. Cultures proved that the exudate was not diphtheritic.

Lung Complications After Operations Under Anesthesia.—Analysis of 55 cases by G. E. Armstrong gives the following statistics: (1) Among the 14 cases of lobar pneumonia there were 10 of sepsis of some form. In 8 of these there was peritonitis, 3 being due to typhoid perforation; 3 had chronic nephritis, 1 aspirated vomitus, 1 suffered from fractured ribs, and 1 from diabetes. (2) There were 16 cases of bronchopneumonia, among them being 12 cases of sepsis of some form, including 6 cases of peritonitis, 1 of which was secondary to typhoid perforation; 3 had nephritis, 4 aspirated food or vomitus, 3 were trephining cases, and in 6 there was preexisting emphysema. (3) Among the 19 cases of bronchitis there were 5 of trephining, in 7 there was peritonitis, in 3 nephritis; in 2 there was preexisting emphysema, 1 with chronic bronchitis; in 1 there was typhoid perforation, and another had tracheotomy performed; this one aspirated blood. (4) Of the 3 cases of plastic pleurisy 2 were associated with tuberculous cervical adenitis, and 1 with cancer of the sternum; all these recovered. (5) There was 1 case of pleural effusion, occurring in a patient suffering from suppurative mastitis with pleurisy on the same side. (6) There were 2 cases of empyema, 1 following excision of an epithelioma from the lower lip. There was no history of pneumonia preceding the empyema. One followed an operation for appendicitis, with abscess and generalized peritonitis.

Postanesthetic Acetonuria.—A subtitle of the paper by L. Beesly is "The significance of delayed chloroform poisoning and the advantages of ether over chloroform in acute infective conditions." He has carried out a series of examinations of the urine of patients before and after operation. He finds that the similarity of the symptoms described as occurring in so-called acid intoxication, acidosis, acetonuria, and delayed chloroform poisoning, all point to a similar metabolic disturbance, one of the ultimate products of which is acetone, and that this product occurs with the greatest regularity after the administration of a general anesthetic. He believes that a certain degree of poisoning occurs after every operation. The paper is too elaborate to be abstracted in full, but is of great interest to all practitioners. The author's conclusions are (1) That two separate conditions should be recognized—acute and chronic acetonuria. (2) That ether and chloroform invariably induce a temporary acute acetonuria, which may be very detrimental even to an apparently healthy organism. (3) That this acute anesthetic acetonuria is accompanied by symptoms of acid intoxication, sometimes ending in death, when the kidneys are unable to cope with the increased formation of acetone by a corresponding capability of excretion. (4) That although ether may produce a greater acetonuria, this is less harmful than that produced by chloroform, because ether is less injurious to the cells of the liver and kidneys, and thus does not hinder their power of elimination. (5) That the more plentifully and rapidly excretion is carried on the less serious is the poisoning. (6) That the effects of the poisoning are mitigated by the administration of alkalies, which may also be given with advantage before operation if poisoning be anticipated. (7) That the usual risks of anesthesia are not increased by preexistent chronic acetonuria. (8) That anesthesia is dangerous with preexistent acute acetonuria, especially if the anesthetic is chloroform. (9) That a guarded prognosis must always be given when acute acetonuria is present with symptoms of poisoning (10) That death following the administration of chloroform with symptoms of poisoning may be due to the idiosyncrasy of the patient.

Berliner klinische Wochenschrift, May 14, 1906.

The Bactericidal Action of Radioactive Mineral Waters.—Rheinboldt describes experiments made on a certain mineral water known to possess radioactive qualities, in order to determine its effect on bacterial growth. Samples of the bottled water ordinarily sold and of a specimen obtained fifteen hours previously from the spring were allowed to act under similar conditions on equal amounts of a bouillon culture of *Bacillus prodigiosus*, and plates were made at regular intervals. It was found that the old water exerted no influence whatever on the development of the bacteria, whereas the fresh specimen had a very pronounced inhibitory effect, which reached great intensity after four hours' contact with the bacteria, and then continued for some time longer. An attempt to reimpregnate the old water with artificial radium emanations was only partially successful, as the antibacterial properties thus contributed to it disappeared again very promptly. The author suggests that possibly there are other inhibitory properties in mineral waters in addition to the radium emanations.

The Testing of Digitalis Preparations.—Focke says that the systematic testing of digitalis preparations is even more necessary than the standardization of such products as diphtheria antitoxin. The variability in the quality of the digitalis preparations used is so great, and the therapeutic importance of the drug is so high, that even though it should be necessary to increase its cost to the consumer, efficient methods of standardization should be employed. Tests made on frogs for the purpose of comparing the clinical value of digitalis preparations differing in nature are wholly unreliable and unsatisfactory, but, on the other hand, the frog lends itself admirably as a test object for determining the comparative activity of different specimens of the same type of preparation. The entire subject of the uniformity of digitalis preparations has been too much neglected, and the author proposes that in order to correct this deficiency, the now existing laboratories for the examination of food supplies, etc., be also required to supervise the strength of the digitalis derivatives sold by apothecaries.

Münchener medizinische Wochenschrift, May 15, 1906.

Analgesia of the Tendo Achillis in Tabes.—Racine discusses the occurrence of a symptom described by Abadie as affording early evidence of the presence of locomotor ataxia. This consists in great reduction or complete abolition of the tenderness normally present in the tendo Achillis when pressed between the fingers. In healthy individuals even moderate pressure in this region produces severe pain, and the author by means of a specially devised form of dynamometer was able to determine that a pressure of five to ten kilograms is distinctly unpleasant, and one of over ten kilograms is painful to ordinary persons. Individual variations in tenderness were noted, and in one or two instances there appeared to be almost total analgesia in persons who exhibited no other symptoms of tabes. On the other hand, the symptom was found present in about 80 per cent. of the tabetics examined, and the author agrees with Abadie that it is a fairly valuable and constant sign of the disease. He does not believe, however, that Abadie's claim that analgesia of the Achillis tendon is a pathognomonic early symptom is altogether justifiable, and considers that it cannot be placed in the same category with the absence of knee-jerk or the Argyll-Robertson pupil.

A New Route for Operating on Malignant Nasal Growths.—Denker describes a plan of operation which is intended to give free access to the nasal passages for the removal of large tumors without entailing the facial deformity that follows the ordinary methods. It consists in opening the nasal passage through the maxillary antrum. This is effected by an extensive incision along the junction of the upper lip with the alveolus, by means of which the lip and cheek are dissected up from the superior maxilla as far as the orbital border. In this way the opening of the bony nares is exposed, and the mucous membrane is stripped up from the bone. The antrum is then opened from without and enough of its internal wall is also removed to expose the new growth. The necessary operative procedure can easily be carried out through this opening, and at the close of the operation the cheek is allowed to drop back into place and the incision in the mucous membrane is sutured. The after-treatment of the nasal wound is managed through the nostrils. The author describes three cases in which this plan was followed. In two instances malignant growths were removed, and in the third a fibroma, probably originating in the pterygopalatine fissure, was partially extirpated. In this case access to the entire region involved could not be secured through the antrum, and for such conditions in which the retromaxillary fossa is involved, the author recommends temporary resection of the superior maxilla.

Anesthesia with the Roth-Dräger Apparatus.—Hagen reports very favorably on this method of inducing anesthesia, basing his conclusions on seven hundred cases in which the apparatus was used. The procedure consists in the administration of a continuous stream of oxygen to which accurately measured quantities of ether or chloroform, or both together, may be added. The proportions of each constituent of the mixture are readily controllable. The advantages claimed for the apparatus are that it allows of extremely accurate dosage and of the widest possible range of individualization. The anesthetic vapors are administered in greatly

diluted form and in reduced quantities. The accumulation of carbon dioxide in the body is prevented, and the stimulation produced by the oxygen is beneficial. Induction of anesthesia is easy, and is usually unaccompanied by the stage of excitement ordinarily seen. The only drawback to the method is its expense, which is considerable, in spite of the fact that only about one-half as much ether or chloroform is required as when the older methods of administration are employed.

Deutsche medizinische Wochenschrift, May 17, 1906.

Observations on Sahli's Desmoid Reaction.—Einhorn affirms that this test of gastric efficiency is not as reliable as it has been claimed to be by its originator. The procedure is based on the principle that catgut can be digested only in the stomach, and that the pancreatic juice does not affect it. Small bags of rubber tissue containing a little methylene blue or iodoform, and tied up with a strand of raw catgut, are given to the patient, together with an ordinary meal. If the gastric function is good the test substance used should be demonstrable in the urine or saliva six to eight hours after the administration of the test pill. Einhorn found that in four cases of gastric achylia a positive reaction was obtained by this method, apparently indicating that digestion of the catgut must have occurred in the intestine. In one instance the stomach contents, removed several hours after the test pill had been given were free from any blue color, although the urine passed shortly afterward was blue. The author therefore concludes that the test is unsatisfactory, because catgut can be digested in the intestine as well as in the stomach.

Experimental and Clinical Observations on the Nature of Phthisis Bulbi.—Schirmer has conducted a series of experiments on rabbits' eyes, in the course of which he produced artificial atrophy by the introduction into the anterior chamber of small amounts of mercury, salt solution, adrenalin solution, etc. As a result of this work and of his clinical observations, he concludes that the condition of primary hypotonicity present in phthisis bulbi, which often appears even a few hours after the onset of an inflammation, is due to the circulatory disturbances attending the process. The result is that an abnormally albuminous aqueous humor is secreted in abnormally small amounts. In favorable cases this condition disappears again as the inflammation subsides, and the intraocular pressure then returns to the normal. In the unfavorable cases so many vessels in the ciliary processes are destroyed in the course of the inflammatory process that even after the termination of the circulatory disturbance the remaining vessels are not competent to supply adequate quantities of intraocular fluid. In consequence, intraocular pressure is permanently reduced and the walls of the bulb in contracting through their own elasticity increase in thickness, thus giving rise to the nonirritative type of phthisis. If in addition to the destruction of the vessels inflammatory circulatory disturbances persist, the secretion of aqueous humor overrich in albumin in small quantities continues, and the clinical condition resulting is that of phthisis dolorosa.

Lung Stones.—Bürgi describes two cases of this singular affection. In the one, that of a man of thirty-three years, there was advanced pulmonary tuberculosis. The patient on one occasion coughed up fifteen hard concretions of about the size of a pea. The other patient was a young woman, in whom the diagnosis of tuberculosis was probable, but was not altogether substantiated. During a period of several months she coughed up large numbers of pulmonary concretions, varying in size from that of a pinhead to that of a pea. In the course of a year her general condition improved greatly and the pulmonary signs disappeared. Examination of the stones in each instance showed that they were composed of mucus, epithelial débris, etc. The inorganic constituents were for the most part calcium phosphate and magnesium phosphate.

French and Italian Journals.

Subperitoneal Fibrous Body in a Woman Three and One-Half Months Pregnant; Laparotomy; Enucleation; Recovery.—Pozzi removed a fibrous body from a patient who was three and a half months pregnant. This body was as large as two fists. It was wedged in the pelvic inlet, and if it had been allowed to remain would probably have caused grave dystocia at term. Pozzi determined at operation that this fibrous body had no connection with the gravid uterus. It was in such a position that it pressed upon the rectum. It was enucleated and the cavity was tamponed. The recovery of the patient was excellent, pregnancy continuing normally.—*La Tribune Médicale, March 31, 1906.*

Albuminose of Bence Jones and Kahler's Disease.—E. Cavazzani presents a case of Kahler's disease in a female, in whose urine albumose was demonstrated, and calls attention to the pathological interest of this substance which may lead to knowledge of the function of the medulla of the bones, especially with regard to the production of an internal secretion of unorganized material. He has noted in experiments on animals a toxic influence of this substance manifested by dyspnea and muscular asthenia. Merletti has observed albumose in some cases of eclampsia in a prodromal period before the convulsions occurred, and regards it as a phenomenon preceding the intoxication of eclampsia. In the puerperal state albumose does not arise from a medullary genesis, but in all probability depends on the active processes of proteolysis which go on in the zone of the epithelial portion of the placental villi.—*La Riforma Medica, April 7, 1906.*

The Indirect Effect of Alcohol on the Heart.—O. Dauwe declares that alcohol has a directly harmful action on the function and the vitality of the cardiac muscle, and consequently, far from being a cause of increased pressure, its action on the heart can only hinder it. Another action, then, must be found for alcohol which will be strong enough to overcome the cardiac depression. Kochmann is the investigator who has determined this. A special influence exerted by alcohol on the abdominal plexuses which governs the abdominal circulation and that of the inferior extremities has been discovered. This action, which probably has its principal seat in the splanchnic ganglia, acts through an energetic vasoconstriction. The result of this action is the increase of general pressure, which causes a more active circulation in the coronary vessels of the heart. This effect on the circulation is sufficient not only to compensate the depressing action of alcohol on the cardiac muscle, but also to cause the action of the heart to be strengthened.—*Gazette des Hôpitaux Civils et Militaires, April 10, 1906.*

The Eye in Relation to Acquired Syphilis.—A Cantonnet declares that the effects of syphilis on the eye are very frequent and very grave. Among other lesions which he mentions are the following: The eyelids sometimes are the seat of the chancre; the conjunctiva in some cases is also the seat of this lesion; the cornea may be attacked by interstitial keratitis. Rarely is the sclerotic inflamed. The uveal tract is affected by secondary syphilis with considerable frequency. The choroid, the retina, and the optic nerve may also be attacked by this disease. The orbit may be the seat of osteoperiostitis or gummata, exostoses, or osteomata. The lacrymal gland is affected in some cases. Paralysis or neuralgia may be noted in the nervous apparatus of the eye. The writer puts iritis in the first rank of these lesions due to syphilis. The general treatment should be very energetic, for ocular syphilis is a very grave affection.—*Revue Française de Médecine et de Chirurgie, April 10, 1906.*

Anemia of Infancy.—A. G. Petrone characterizes anemia in infancy as frequent, though less so than in the adult. Numerous conditions that may produce it exist in the baby, and they combine with the lack of the resistance of the hematopoietic organs of the baby to morbific agents. The only rational classification of anemia depends on the hematology. The essential symptom of anemia is oligochromemia, dependent on lowered globular resistance. There are three groups, chlorotic, simple, and pernicious anemias. In the chlorotic type the oligochromemia is produced by lessened globular resistance without diminution of the number of the red blood corpuscles. There is insufficiency of the amount of iron for the formation of hemoglobin, which may be congenital and depend on scarcity of the reserve iron which the infant takes from the mother's blood, on a premature exhaustion of this reserve, or on exaggeration of hemolysis in the first few days after birth. Simple anemia has its oligochromemia produced by oligocythemia or by lessened number of red corpuscles combined with lessened globular resistance. There is often polychromatophylia, anisocytosis, and normoblasts in the circulation. Pernicious anemia is characterized by an intense oligocythemia, oligochromemia, megaloblasts in the circulation, anisocytosis, poikilocytosis and polychromatophylia. All ordinary causes of anemia may operate in a sufficient degree to produce the pernicious form and in addition intestinal parasites, hemorrhage, malaria, syphilis, and intestinal autointoxication may be mentioned. There are many complicated forms of anemia connected with splenomegaly.—*Gazzetta Medica di Roma* March 15, 1906.

Book Reviews.

Précis de Diagnostique, Chimique, Microscopique, et Parasitologique. Par les Docteurs Jules Quiart et L. Grimbert. A l'usage des médecins, des pharmaciens, des etudiants en médecine preparant le troisième examen, et des étudiants en pharmacie. Paris: F. R. de Rudeval, 1906.

In this volume of 960 pages with 500 figures a very satisfactory exposition is given of the subject of clinical diagnosis by laboratory methods as practised in France. To the American critic certain omissions appear strange, such, for example, as the absence of all mention of the Fleischl hemoglobinometer or its modifications, and the preference of the blood-counting apparatus of Malassez over that of Thoma, which also is not referred to. The technique of staining blood films is not so fully described as is customary in American or German works, and in numerous other respects the volume differs from the orthodox teaching of the German and American schools. This criticism is not intended to be condemnatory, however, for the volume presents many features of much excellence, notably the sections devoted to parasitology, which are unusually complete. The illustrations are very numerous and for the most part are satisfactory, those in the blood again being the weakest. While not of a nature to supplant other textbooks, the work presents enough new points of view to be a desirable supplement to other books on the subject.

Sex and Character. By Otto Weininger. Authorized Translation from the Sixth German Edition. London: William Heinemann; New York: G. P. Putnam's Sons, 1906.

After having read this volume through one is tempted to repeat Johnson's time-honored remark regarding the performance of the dancing dog—that the wonder is not that the feat should be done so well, but that it should be done at all. No one could deny that, considered solely as the work of a youth who died by his own hand at the age of less than twenty-three years, the present book is a remarkable achievement and represents an astounding degree of familiarity with many departments of learning. Unfortunately it also affords a striking example of the gulf between knowledge and wisdom, and it is impossible to attach to this farrago of misogynistical diatribes any significance as a contribution to scientific literature, and as belongs, for example, to the not less pessimistic but entirely rational essay of Möbius on "The Physiological Weakmindedness of Woman." The author, with the customary self-complacency of the megalomaniac, presents his own unsupported assertions as logic and offers invective as argument. The inconsequential way in which he denies to woman the possession of any spiritual or psychical faculty other than the coupling instinct in its most restricted sense is more suggestive of the *jeux d'esprit* of G. Bernard Shaw than of any more serious philosophy, and it is out of the question to regard the book as anything but the product of a mind diseased. The work has interest solely to the psychologist and alienist as being the outpouring of a disordered mentality, but unfortunately it is of a type to attain popularity among the laity, as is attested by the fact that six editions of the German original have already been distributed.

The Crux of Pastoral Medicine. The Perils of Embryonic Man: Abortion, Craniotomy, and the Cesarean Section, Myoma, and the Porro Section. By Rev. Andrew Klarmann, A.M. Second, Revised and Enlarged Edition. New York and Cincinnati: Fr. Pustet & Company, 1905.

The facts that the first edition of this little volume, contrary to all expectations, was welcomed by the medical profession, that there exists a pressing need of a common meeting ground for physician and priest at the bedside of the patient, and also that there is a tendency of the laity to an evasion of the moral responsibility incurred in the marriage relation, have actuated the author in presenting a second edition of this work.

He shows how the problems of life and generation in the light of modern biological, physiological, medical, and surgical progress have but lent emphasis to the authoritative rulings of the Church on the questions involved. The stand taken by the author in regard to abortion, the Porro operation, and the moral responsibilities involved in marriage may seem extreme to many, but desperate diseases need desperate remedies, and the benumbed conscience, in too many instances abetted by the physician and ignored by the theologian, is sorely in need of such awakening as the perusal of this little book will stimulate.

Surgical Nursing, and the Principles of Surgery for Nurses. By Russell Howard, M.B., M.S., F.R.C.S., Lecturer on Surgical Nursing to the Probationers of the London Hospital, etc., London: Edward Arnold, 1905.

The growth of the profession of nursing has been marked by the appearance of numerous books in which are laid down the principles of both medicine and surgery with the idea of making the nurses' work more intelligible. How much of this is finally absorbed by those for whom it is intended is questionable, for there are so many practical duties to be performed that a nurse has little opportunity to think of the theoretical aspects of the matter. But up to a certain point such books as that here referred to are of value both in the training school and as a work of reference later. This particular one may be described as *multum in parvo*, for almost the entire domain of surgery is discussed in brief paragraphs, together with a variety of other subjects. There are a number of items which will be found differing from those usually associated with American practices, but aside from this the book forms a lucid and quite comprehensive handbook on the subject of nursing.

Food and the Principles of Dietetics. By Robert Hutchinson, M.D., Edin., F.R.C.P. Assistant Physician to the London Hospital and to the Hospital for Sick Children, Great Ormond Street; Author of "Lectures on Diseases of Children;" "Patent Foods and Patent Medicines," Joint Author of "Clinical Methods." With Plates and Diagrams. Revised Edition. New York: William Wood & Company, 1906.

Writers on dietetics have been busy of late years in keeping pace with the demands for information on the subject of feeding in sickness and health that the present era of clinical research in medical problems has stimulated. Dr. Hutchinson's book promptly attained universal recognition in its first appearance a few years ago, and that its value has been generally appreciated is shown by the necessity for this new edition after so short an interval. The author manages a highly important subject in a manner to bring forward to the full its interesting aspects, and by his agreeable style renders the book entertaining as well as authoritative. The dietetic problems that must be encountered in daily practice are often difficult of solution, but the present volume can safely be recommended as one of the most satisfactory guides that has yet been written. A feature of especial interest and one that may often be used in impressing some medical lesson on an unbelieving patient, is the very free use of ingenious diagrams to indicate the percentage composition of the various articles of food. The problems in relation to the amount of food required under different conditions, the value of alcohol and other stimulants, the most advantageous methods of cooking, the matter of diet in diseases of metabolism, etc., are all discussed in a very practical way. The conclusions are those reached by an observer of wide experience whose object has been to assist the practitioner in the management of the difficult cases of nutritional disorder that often fall to his lot.

The Ophthalmoscope and How to Use It. With Colored Illustrations, Descriptions, and Treatment of the Principal Diseases of the Fundus. By James Thorington, A.M., M.D. Author of "Refraction and How to Refract," and "Retinoscopy;" Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. 73 Illustrations, 12 Colored Plates. Philadelphia: P. Blakiston's Son & Co. 1906.

While the successful use of the ophthalmoscope is an art that can be acquired only by diligent practice, the beginner's progress will be much hastened if he has a clear conception of the optics of ophthalmoscopy and their practical application. Dr. Thorington has presented the principles involved in the clearest possible fashion, and his directions for the learner are admirably conceived and expressed. The portion of the work devoted to the pathological conditions to be detected by the ophthalmoscope is equally satisfactory and includes terse descriptions of the treatment for each lesion. The volume is a fitting companion to the author's previous works on allied subjects.

Die Behandlung der Krankheiten der Nase und des Nasenrachens. Von Prof. D. A. Onodi, Budapest, und Prof. Dr. A. Rosenberg, Berlin. Berlin: Oscar Coblentz, 1906.

Familiar ground is traversed in this freely illustrated textbook, and yet it has a certain charm of freshness. The authors have drawn upon their personal clinical experiences and include the very latest therapeutic advances in medication and surgery. No less than one hundred and sixty-three pages are devoted to the consideration of sinus diseases, and many of the illustrations in this section have been made apparently from anatomical specimens prepared expressly for this purpose. Another feature not always notable in German text-books is that the entire contents have been well paragraphed so that it is easy to find any particular subject. At the present time it is difficult for a text-book to say much that is new to anyone who follows the current literature of any of the specialties, for most of the advances are first exploited in some one of the journals, but we have no hesitation in saying that the present volume is a thoroughly up-to-date exposition of nasal and nasopharyngeal maladies.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-seventh Annual Meeting, Held in Boston, June 5, 6, 7, and 8, 1906.

(Special Report to the MEDICAL RECORD.)

GENERAL SESSIONS.

First Day—Tuesday, June 5.

DR. LEWIS MCMURTRY OF LOUISVILLE, KY., PRESIDENT, IN THE CHAIR.

THE first general session of the fifty-seventh annual meeting of the Association was called to order in Mechanics' Hall at 10.30 in the morning. The officers and guests entered in procession at that time, and marched from the rear of the hall to the platform, led by Governor Guild and the Rev. Dr. Edward Everett Hale. Following the Governor walked Mayor Fitzgerald, escorted by Dr. Herbert L. Burrell, and after them the officers and invited guests of the Association, each escorted by some member of the local committee. Dr. Paul Thorndike was chief marshal, assisted by Dr. L. T. Wilson. Among the ex-presidents seated on the platform were Dr. Henry O. Marcy of Boston, John A. Wyeth of New York, Charles A. L. Reed of Cincinnati, Frank Billings of Chicago, William W. Keen and John H. Musser of Philadelphia, and Joseph M. Matthews of Louisville.

The Rev. Dr. EDWARD EVERETT HALE was introduced by President McMurtry, and made the opening prayer, in which he petitioned for peace and that those assembled together might be prospered in their deliberations and in their work of ministering to the physical ills of suffering humanity.

Addresses of Welcome.—Governor CURTIS GUILD of Massachusetts then delivered an address of welcome, saying that he had come in the name of the Commonwealth to welcome the physicians from all over the country, to extend to them the privileges that the State could give, in order that their visit to Boston might be full of delight and also instructive. He hoped that while the visitors were inspecting the various city institutions they would not omit those under State control, such as the free distribution of diphtheria antitoxin, which was carried on under the careful auspices of the Commonwealth; also those institutions which look after the interests of the feeble-minded, and which had made the name of Dr. Fernald a household word; also the insane hospitals, the schools for the blind, and other worthy institutions. American physicians had ever been distinguished for their patriotism and devotion to the duties of their citizenship. One of the earliest sacrifices to our freedom was that of Dr. Warren at Bunker Hill. Another conspicuous Massachusetts doctor, who had well served in Cuba and was now rendering conspicuous services to his country in the Far East, was General Leonard Wood. War was a curse, but one war, conducted by medical men, had been a blessing to the world—that was the campaign against yellow fever in Havana, in which the number of human lives saved was much greater than that of those sacrificed in the Cuban war. This war had been waged and carried to a triumphant issue by surgeons of the United States Army.

President ELIOT of Harvard College, in his address of welcome, paid tribute to the noble qualities of the medical profession, and recounted the many benefits its members conferred on the community at large. He said that he welcomed the American Medical Association to an exceptional community, in which physicians and surgeons had for generations held equal rank with the members of all other learned and scientific professions. Massachusetts had long recognized in physicians and surgeons as a class powerful contributors to the public health and happiness, to the advancement of medical knowledge, to the industrial and economic interests of the community, and to its moral welfare. For generations this fortunate community had enjoyed the privilege of knowing intimately physicians who illustrated the highest qualities of human nature—men courageous and resolute under responsibility, imperturbable in the presence of danger, conservative and yet bold, in professional relations patient, cheerful, and tender, diligent learners throughout life, and diligent teachers of sound doctrine concerning health and disease, virtue and vice. Experience of these noble qualities in the best physicians and surgeons during the past two hundred years had led Massachusetts to recognize completely the dignity and serviceableness of the profession of medicine, and to treat it, therefore, with the highest official and social consideration. This was more than could be said with accuracy concerning the standing of the physician in many older and more conspicuous communities. He then spoke of the many advantages in point of hygiene, sanitary regulations, hospital accommodations, etc., that had been conferred on the city of Boston through the efforts of its medical men, and said that the community paid its homage of admiration and gratitude to the profession, and extended to its medical guests the most cordial hospitality and expressions of good will.

Dr. A. T. CABOT welcomed the members and foreign guests in behalf of the Massachusetts State Medical Society, of which he was President. He spoke of the sanitary work being carried on by the physicians of the State, especially in the fight against tuberculosis. He suggested that preventive work in this direction might be done on a large scale by the Association, whose meetings here he was sure would be productive of a decided forward step in medical work.

Mayor JOHN F. FITZGERALD followed with greetings on behalf of the city. He referred to the previous meeting of the Association in Boston forty-one years ago. Since then much progress had been made in the healing art, and many brave and heroic contests had been waged by medical men against yellow fever, tuberculosis, and other scourges of mankind. He hoped the visitors to Boston would not fail to note what the city government was doing in the discharge of its share of the responsibility for the health of the people. It provided sanitary living conditions, a pure water supply, inspection of milk and vinegar, registration and quarantine of all contagious diseases, hygienic instruction in the public schools and public parks, gymnasia, playgrounds, and baths. He spoke of the distinguished men who had at one time or another been numbered with the faculty of the Harvard Medical School. He mentioned the work of the Massachusetts General, the Boston City, the Carney, and the Children's hospitals, and said there was yet to be erected a hospital for tuberculosis—a foe as insidious and implacable in Boston as the typhoid fever which scourged Philadelphia and Pittsburg. He promised a monument to any member of the medical profession who might discover the means of effectively checking the ravages of this great evil.

Dr. HERBERT L. BURRELL then made the report of the Committee of Arrangements.

Dr. MCMURTRY, the retiring president, introduced the president-elect, Dr. WILLIAM J. MAYO of Rochester, Minn., who at once delivered the

President's Address.—This was a discussion of the medical profession in this country as a unit, and of the problems, technical, ethical, and social, which confronted it. After briefly reviewing the present status of the American Medical Association, and congratulat-

ing its members on what had been accomplished by the organization, Dr. Mayo pointed out that the backing of an authoritative body of this sort would help the profession very much in fulfilling its sacred duty to the public in instituting sanitary reforms. New and fundamental truths had followed each other so rapidly that we had scarcely been able to digest them, and much less could we expect the public to have kept pace. The layman's view was that of twenty-five years ago. He accepted with avidity new dogmas and "pathys" based on theories incredibly foolish in the light of modern investigation, and we had allowed him to become fixed in these beliefs. We had permitted the public to be educated by "patent-medicine" advertisements and the voluble charlatanism of the commercially interested. In return we were classed with these schemers, and efforts for the general good were believed to be selfishly inspired. The Utopianism of our profession was too idealistic for ready comprehension in this commercial age. The time had come for the public to be taken into our confidence; if we wished better results, we must enlighten the people, for with them lay the final word. General sanitary matters of the greatest importance were becoming understood through medical influences. The public had been and was being educated in regard to the "great white plague," tuberculosis, and statistics were beginning to show the effect of this diffusion of knowledge. The good that had resulted from the education of the public in regard to the propagation of disease by mosquitos, and especially the necessity for quarantining patients with yellow fever or malaria, was already perceptible, and society must also be taught the early symptoms of cancer, the greatest foe of humanity, that its manifestations might be recognized while in the curable period. A propaganda of this kind, inaugurated by the profession of Germany, had borne fruit. The typhoid fever question was then discussed, and the culpability of municipalities that failed properly to safeguard their water supplies was dwelt on. The crusade against patent medicines was commended. Dr. Mayo then said that one of the few misfortunes of the individual freedom afforded by a republican form of government was that it enabled the most ignorant man, through prejudice, to interfere with and delay needed legislation, with the result that, by the time the law could be passed, the immediate object to be obtained had often disappeared. In Germany compulsory vaccination had practically caused smallpox to disappear from the army and country, a person properly protected being immune. In the State of Minnesota inability to enforce vaccination in the late smallpox epidemic permitted, from a few sources, 27,876 persons to become infected with this disorder; all due to a small but vociferous band of anti-vaccination agitators. Contagious disease in any place was not a matter of local or state interest alone, as the ease and freedom of transportation rendered local control impracticable and properly placed it in the hands of the general government. The keenness with which the American people were watching the affairs at Panama argued well for the future. The communication of Dr. Charles A. L. Reed awakened public interest. His portrayal of red tape and obstruction to sanitation in the Canal Zone had resulted in obtaining for that most able army medical officer, Colonel Gorgas, power to carry out the necessary reforms, and had made the Canal Zone the most sanitary place in Latin America.

In considering the matter of military and naval sanitation Dr. Mayo pointed to the successful methods of the Japanese medical corps in the recent war as an illustration of what could be effected in this direction if proper support were given to the medical authorities. Our own army and navy medical departments had worked intelligently against overwhelming odds. Their individual members had international reputations honestly achieved. Their schools for the special training of their men were in the highest degree efficient and deserving of every praise; but the departments had been so small as to be unable to act even as nuclei about which in time of war competent forces could be gathered and the militia of our country entered into conflict fearfully handicapped. The indications, however, were that these matters would now be rectified, and if so it would guarantee to the patriotic American that should he again be called on to serve his country his enemies would be in front and that he would not be destroyed by his own side through neglect of sanitary laws. The United States Public Health and Marine-Hospital Service had been and was doing splendid work in sanitation. Its skilled investigators had revolutionized quarantine measures and had placed preventive medicine on a solid basis. Their powers should be extended so that such unnecessary outbreaks as occurred in New Orleans should not be repeated. They should be given control of national quarantine in all its phases.

Dr. Mayo then took up the subject of medical education, state licensure, and reciprocity. What was needed, he said, was a higher standard of requirements and more and better supervision of professional schools. The Council on Medical Education was working hard and was now in a position not only to show what should be done, but to initiate needed reforms. No more important work had ever been taken up by the profession. At the present time medical education was uncontrolled and each State had its own standard of requirements. We could not rid ourselves of dogmas and "pathys" until we could secure a universal primary law as to the minimum amount of knowledge on fundamental branches. To accomplish this the American Medical Association must cooperate with and encourage medical colleges to do better work. The profession owed it to itself to investigate in some manner what the schools were doing and to make it known whether or not they fulfilled their obligations to the student. No well-conducted college could object to such reasonable supervision. Another question of great importance was that of reciprocity in medical license. The conditions now were well-nigh intolerable and restrained the individual freedom guaranteed by the Constitution. The boundaries between states were imaginary lines; yet a physician on one side of a border could not relieve human suffering on the opposite side without becoming amenable to the law or subjecting himself to vexatious examinations which he had already successfully passed in his own State. This must be met and speedily by agreement between examining boards as to the minimum of requirements. After all, this was but a part of the educational problem. If we could solve this, licensing boards could at once adopt more uniform examinations and reciprocity.

In considering some of the abuses from which the medical profession suffered Dr. Mayo spoke first of the matter of life insurance examinations. It was a matter of professional pride that, in the general condemnation of the life insurance companies, although every other part of the control had been shown to be corrupt, no breath of scandal had touched the medical department. Yet the local examiner had the most cause of all to be dissatisfied, owing to the reduction that had been made in the fees for examinations. The general officers of some companies had taken great credit on themselves for voluntarily reducing their salaries 20 per cent., and it was a rank injustice that the one body of men who had emerged clean from the insurance scandals should suffer the most for the crimes of others. A thorough medical examination to

prevent fraud by the admission of unsafe risks was essential. With few exceptions the line companies paid a fair fee, and less should not be accepted. The casualty companies were the worst offenders, and some concerted action should be taken to compel them to mend their evil ways. Lodge practice was another scheme by which officers of an association drew salaries ostensibly to give medical services at a figure below the possible point at which a professional man can live and continue his education. The people were badly served, as competent physicians could not be secured to do the work, and the whole scheme was properly condemned by the various medical associations all over the country.

Hospital abuse by patients who were able to pay, through the neglect and indifference of the trustees, was prevalent, and thereby the profession was robbed of just returns for labor and the funds of charitable persons were misused to an extent which was almost beyond belief. All hospitals should have competent individuals whose business it was to see that no one secured free treatment who was able to pay. It was a misfortune that the large majority of hospitals had no physicians among their directors. Hospital management was often extravagant and wasteful, due to official influence in furnishing comfortable berths for incompetent relatives or unfortunate friends in some salaried executive position. Fortunately the list of grievances was not large, and Dr. Mayo believed that they could be harmoniously adjusted if taken up with the proper authorities in a conciliatory spirit. Our first object must be to see that no poor person should be subjected to the slightest inconvenience or annoyance, and that every worthy charity should have our united support; but we must look to it that the charitable practitioner's time, knowledge, and skill should not be misused.

In speaking of the practice of medicine as a business Dr. Mayo said that one of the demoralizing tendencies in this commercial age was the money standard of success. Physicians were not called or chosen; accident or environment brought about their choice of profession. While professional life broadened the mental horizon and increased sympathy, it could not change man's nature, and men who were unfair in business affairs were to be found in the profession. The one crying evil, which fortunately was not widespread, was the giving of commissions—in other words, the selling of the confidence which the patient has in his practitioner—to some specialist who will divide the fee in return for reference of the case. The one secretly takes money from the patient without his consent, and the other, in order to complete the bargain, charges more than he should. This was equally harmful to the one who received and to the one who gave. Some attempts had been made to justify it, but the very fact that it was secret showed that both parties were ashamed to have it known and was an acknowledgment of its moral obliquity.

Dr. Mayo then urged the establishment of a better and more ethical relationship between the physician and the pharmacist and deprecated dispensing by the former and counter-prescribing by the latter. Finally, he spoke of the necessity for continued study and efforts at self-improvement for all physicians, and emphasized the desirability of frequent trips for the purpose of observation of the work of others. In conclusion he made a plea for unity of spirit and purpose in the profession, saying that the vital need of the medical profession was a harmonious organization—an organization that would encourage right thinking and good usage among ourselves, help to secure needed medical reforms, compel redress of grievances, and promote and encourage the highest interests of its individual members; and in this lay the future usefulness of our profession as a whole.

Evening Session—Tuesday, June 5.

The second general session was held in Jordan Hall at 7.30 P. M. It was occupied by the delivery of two of the general addresses.

Oration on Medicine.—Dr. Frederick C. Shattuck of Boston, Mass., delivered this address, taking as his title "How Progress Comes in Medicine." He began by saying that during the past year there had been no very conspicuous advance in medicine. Advance there had been, of course, but it had been all along the line, rather than in any one direction. He proposed, therefore, to attempt roughly to sketch some features of the progress of medicine in the past, its irregularity, apparent lack of logical sequence, dependence on the progress of science (knowledge) as a whole, the way in which advance along a very narrow line might lead to advance along the whole front. He said that we might compare the whole body of scientific workers to an army determined to enter into and possess the empire of ignorance, a country of vast extent, and presenting every conceivable physical difficulty to advance and occupation. As organized to-day, we might distinguish six army corps—anatomy, physiology, chemistry, physics, pathology, clinical history. The speaker then traced the development of the study of gross anatomy, which he said was about as well, though not so widely, known three hundred years ago as to-day. The contributions of Harvey, Malpighi, Leeuwenhock, Bichat, Hooke, Schleiden, Schwann, Wolff, and Virchow were noted, and their significance in the upbuilding of the science noted. In reference to the nervous system, Dr. Shattuck said that in the past hundred years the anatomy of the central nervous system had not been illuminated by anatomists. The microscope showed that the gray matter was composed mainly of cells, the white of fibers. No mere anatomic study could possibly have differentiated the function of gray and white matter, the anterior and posterior nerve-roots, the motor and sensory nerves running in a common cable. Charles Bell, the surgeon, by vivisection, made a great step in physiology and thus advanced anatomy. Marshall Hall, the physician, and Johannes Mueller, the physiologist, again made a further advance in explaining reflex action and its mechanism. Waller, the physiologist, taught us the lesson of the degeneration of nerve fibers separated from their centers. Anatomy never could have taught us the great lesson of cerebral localization, nor could animal experimentation or physiology alone. The starting point came from the clinician, who, through careful comparison of the experiments of disease on the human being during life and after death, pointed out the way for physiological experiment to follow. Critical clinical study first, pathological anatomy second, physiology third, anatomy fourth; structure and function, function and structure; indissoluby bound together; advance in one must lead to advance in the other. Chemistry was passed over lightly by the speaker, and then the development of pathological anatomy was outlined. Morgagni might be regarded as the founder of pathological anatomy, John Hunter of its greater outgrowth—pathology. Pathological anatomy, however, remained sterile until wedded to clinical observation. Laennec was the high priest who officiated at this alliance. Borrowing percussion from Corvisart, who ressurrected it from the grave of Auenbrugger, and, with the aid of physics, developing immediate auscultation, he compared the signs of thoracic disease in life in the ward with the changes wrought by it after death, and in ten years performed one of the most stupendous feats in medicine, putting the recognition of cardiac and

pulmonary disease in the living at a level from which it had advanced little for sixty-odd years, when the physicist with his *x*-rays made a good advance. Not only so, but Laennec's conception of tuberculosis in the lungs was far more true than that to which a too exclusively anatomic point of view led Virchow, whose great authority again led astray Buhl, Niemeyer, and a host of pathologists and clinicians. Louis followed close on Laennec and enforced the lesson of the value of method and accuracy in the study of disease. It was he who inspired the young American pupils to separate typhus and typhoid fever. Neither pathological anatomy nor clinical study alone sufficed; in conjunction they succeeded. The power to distinguish between the two diseases clinically had done much to bring about the practical extinction of the contagious typhus. Later developments had been the discoveries in the fields of malaria, trichiniasis, Texas cattle fever, sleeping sickness, tsetse fly disease, relapsing fever, etc., and these were some of the triumphs in the application of bacteriology to medicine. Bacteriology was brought into being by the conjunction of the perfected microscope; the chemist Pasteur, who gave the death-blow to the doctrine of spontaneous generation; another chemist, Hoffman, who made his own fortune and then promoted the welfare of humanity by his discovery of the aniline dyes, which enable us to see and distinguish organisms many of which are otherwise invisible or unrecognizable; and the physician, Koch, whose solid media on plates so greatly facilitated the isolation and perpetuation of pure cultures of this and that organism. Cut out any one of these four links, and we should not be where we were. Laennec's conception of the unity of tuberculosis of the lungs was confirmed, and it was proved that lupus and scrofula, which the great Hebra suggested to be manifestations of syphilis in the second or third generation, was tuberculous in nature. Smallpox, appendicitis, pancreatitis, anesthesia, and myxedema were taken as examples of other conditions in which progress had been particularly striking. In this connection Dr. Shattuck said that the tendency of the present day was too much toward the limitation of the term scientific medicine to that part of investigation carried on either apart from hospitals or by men not directly dealing with the sick. The work of the clinician might be every whit as scientific as that of his laboratory brother. The purely laboratory man had the advantage that he could inaugurate, systematize, and govern his experiments, most of which must be on animals. The clinician had the advantage that the experiments performed for him by disease were on human beings, and were oftentimes of such a nature as could not possibly be made artificially. On the other hand, the clinician was apt to find his time and strength so drawn on by individuals clamorous for relief that his highest work suffered. Before turning aside from the work of the clinician, the speaker mentioned one other advance which had been made and several riddles which still confronted us. In the index of Watson's Practice, a book not read to-day as much as it should be, American edition of 1872, neuritis was found only as optic neuritis. James Jackson had recognized paralysis due to alcohol. Buzzard popularized the knowledge that the trouble was seated in the peripheral nerves in these cases, and that alcohol was only one of many toxic agents liable to cause this result. How easy it was to-day to recognize multiple neuritis, usually to determine its cause in any given case; but there were just as many cases of it fifty years ago as there were to-day. Jaundice was formerly a disease. It was now a symptom only. Rheumatism we now recognized as a tangled skein, the threads of which we were just beginning to unravel. We were dissatisfied with diabetes as a final diagnosis, and were groping for light which might enable us to differentiate the causes of sugar as we had those of bile in the blood and the tissues. We suspected an infection behind purpura. We spoke of purpura simplex and purpura hemorrhagica. We knew that there were many infections which, when intense, were liable to cause hemorrhage. Our ignorance was dense as to the part played in any case by individual peculiarity, as well as to other features of many cases of purpura. Physics had contributed the Roentgen rays to the armamentarium of the physician, as also such means of diagnosis as were involved in the ophthalmoscope and other methods for illuminating the cavities of the body. The debt of medicine to all those half-truths which were too indiscriminately classed under the terms quackery or charlatanism, was real and should be recognized. We believed homeopathy to rest on assumptions unfounded in fact, untenable to-day. The most bigoted of us, however—for there was a bigotry of science as well as of religion—could not deny that homeopathy had advanced medicine, leading to a clearer knowledge of the limitation of the therapeutic action of drugs, of their uses and abuses. The power of suggestion, the influence of mind over body, whether exercised through hypnotism, mind cure, faith cure, Christian science, what you will, threw a flood of light on physiology and pathology, stimulated the study of experimental psychology, illuminated the influence of the nervous system on the circulation, and thus on nutrition. An eminent orthopedist recently classed the natural bone setters, so-called, as forerunners of science, at a time when ignorance as to the action of trauma and disease on joints was profound. They, relying on common sense and observation alone, achieved results which science, timid from knowledge of its ignorance, failed to achieve. There was always a germ of truth in every form of irregular (unscientific) healing—a fact which it behooved us to recognize and be ready to apply. In conclusion, Dr. Shattuck said that he had tried to illustrate from the history of the past the apparently inconsequent advance of knowledge, the correlation of the sciences, the way in which a fact seemingly perhaps unimportant was always potentially fruitful, often bearing fruit of a totally unexpected kind, it might be after many days. In a positive sense we knew more than our predecessors; in a relative sense we might be said to know less. The farther we advanced into the empire of ignorance, the larger we found it to be, each mountain peak showing higher peaks in the distance.

Oration on Surgery.—Dr. Joseph D. Bryant of New York delivered this address, taking as his title "The Nature and Progress of Malignant Disease." After expressing his sense of appreciation of the honor conferred in inviting him to address the American Medical Association on this topic he prefaced his discussion of the subject by stating that in the course of his address he would use the terms malignant disease and cancer in the general sense, since only a general idea of its nature and progress could be considered in the comparatively short time allotted for the purpose. He then began by saying that cancer was a general and not a local variety of disease. The field of its activity was quite as extensive as was the world itself. The vertebrate order of creatures was more or less afflicted with cancer throughout the entire classified series. The highest vertebrate orders of life suffered from cancer more than did all other orders combined. The civilized and the domesticated classes of higher rank suffered more from this form of infliction than did those of lower rank, or of the natural state. Man everywhere paid distinctive vital tribute to this disease; not, however, in equal proportions, but in accordance with the standard of the civilization of which he was a part. The higher the standard the greater was the contri-

bution to malignant fate; the humbler and more natural the standard the less onerous was the demand. The rulers of mighty nations and the humblest human factors of savage existence, each in their respective ratios, succumbed to the mysterious lethal influences of cancer. Also fish and flesh, staple articles of food of man, each in a varying measure, were the abode of malignant action, and more especially was the latter class thus affected. The fish of pure streams and ponds and those of salty habitations were in no small degree the subjects of cancer. The genteel trout and the beneficent cod were examples of this fact, respectively. Even the invertebrate oyster in one instance was widely reported to have yielded to malignant change, though in this instance the growth was really a benign one and not a cancer as was at first supposed. Dr. Bryant then spoke of the modern efforts to discover the true nature of cancer, and mentioned the various governmental and other commissions that were investigating the subject in this country and in Europe. In this connection, he stated, it was not amiss to heed the fact that experimentally and practically the transmission of cancer from man to animals or from one animal to another of different species had not yet been successfully witnessed beyond gainsay, notwithstanding the repeated attempts to attain the purpose and the results of long critical observation. On the contrary, the apparent transmission of cancer between animals of like species and its unquestionable extension by metastasis in those already afflicted was of common knowledge. The vegetable kingdom suffered at times and in isolated places from a form of local progressive disease apparently akin in nature to the malignant characteristics of the animal economy. In fact, the realization that these peculiar vegetable afflictions were caused by a parasite in many instances prompted the renewed suggestion on the part of Hutchinson that growths of similar appearance in man might later be found to depend on the presence of parasites. Since that time, more especially during the last fifteen years, the contention in this respect between the supporters of the parasitic and nonparasitic ideas regarding this disease has been continuous and spirited, and as yet without a generally satisfactory conclusion. The occurrence of cancer among the ancients and its description by the early physicians was then reviewed and the history of the disease traced up to comparatively modern times when John Hunter recognized the influence of trauma as a causative factor. From the period of Virchow's earlier researches to the present day, theories regarding the nature of cancer had multiplied to a bewildering extent. The two extremes at present were the following: (1) That cancer, like many other morbid processes, was due to a microorganism; (2) that cancer represented a morbid proliferation of certain normal cellular elements as the result of diminished inhibitory action. The development of the parasitic theory of cancer was then outlined as well as the geographical distribution of the disease. In speaking of the apparently increased morbidity from this cause noted of late, Dr. Bryant said that the undoubted increase in human longevity of recent time added many, indeed, to the list of those who from augmented years fell within the age limit of cancer attack, and thus apparently increased the spread because of a seeming greater morbid activity. And, too, it should not be forgotten that many from without sought harbor in a city for the relief which its hospitals and extended experience afforded, some of whom, unfortunately, added their sad contribution to the city's death rate from cancer. On the other hand, the life-saving means now employed in defending and rescuing the young from the baneful onset of infectious disease, was increasing the number of the living, and, therefore, neutralizing proportionately the apparent increase in death from cancer. After giving some statistics relative to the occurrence of the different forms of cancer the speaker said that while it had long been conceded that external influences, traumatic and otherwise, contributed to the frequency of accessible cancer in a greater or less degree, it was also self-evident that other and more potent agencies than these must be invoked to account not only for the occurrence of inaccessible cancer, but also for its great preponderance over those accessibly located at all periods of life, more especially the dominant one, that above 25 years of age. The increase in cancer visitation, in connection with advancing years, had long been a matter of common knowledge. But that the location of cancer, at all times of life and especially in adult life, should be of inaccessible, rather than of accessible nature, was more than remarkable. It was even startling, suggesting in no common tone the idea that, directly or indirectly, subtler influences than external traumatism or infecting agents could exercise were active in the development and spread of cancer. The possibility of the entry of the causative factor through the gastrointestinal tract was considered, and it was stated that there was no good reason to believe that the question of food had great importance in this connection. In dealing with the outlook for the future in the treatment of cancer the speaker emphasized the necessity for early surgical intervention. He believed that the outcome of operative endeavor in malignant cases had well-nigh reached the highest possible success, unless aided by increased faith and lessened secretiveness on the part of the sufferers from a malignant infliction. Since it now appeared that cancer was located most often in the deep internal parts, beyond the safe limits of unaided sight and mere touch (inaccessible cancer) two and one-half times more frequently than was accessible cancer, regardless of age or sex, then, indeed, was the fact doubly impressed, of the necessity for prompt acknowledgment of the presence of morbid manifestations and prompt determination of their nature. The handicap imposed by inaccessible cases because of their greater distance from the surface, often enabled the disease to advance undiscovered to a degree forbidding operative action when their presence was finally known. In too many instances of cancer, especially the inaccessible kind, the reasonable suspicions of its presence on the part of the patient or friends were quieted by the soothing platitudes of medical advice, until all opportunity of relief was at an end. The physician and the surgeon should join in the observation and treatment of all such cases as these, early fostering a mutual plan of action that contemplated prompt explorative investigation in doubtful instances, and forbade delay in those of undoubted character. The necessity for educating the laity in regard to the evidences of beginning malignant disease, and also for maintaining careful supervision of patients once operated on in order to guard against relapses was pointed out. In conclusion Dr. Bryant said that the public must be warned against falling into the hands of quacks, and surgeons themselves should avoid substituting new, untried methods of treatment for established operative procedures.

Second Day—Wednesday, June 6.

The third general meeting of the Association was held in Jordan Hall, Wednesday evening, to listen to the address on State Medicine of Dr. William H. Sanders of Montgomery, Ala.

President's Reception.—After the general meeting on Wednesday night a reception was tendered by the medical

men of New England to the President of the American Medical Association. It was attended by immense numbers, though the rule was enforced that no one not wearing an official badge should be admitted. Over 4,000 members were at the meeting, and as many guests. All these attended, besides those invited from the city.

HOUSE OF DELEGATES.

First Day—Monday, June 4.

The meeting was called to order by Dr. Lewis S. McMurtry of Louisville, Ky. Dr. McMurtry said that this was the third time in its history that the American Medical Association had met in Boston. The previous meetings were held in 1849 and 1865. The present meeting promised to be the largest and most enthusiastic in the history of the Association, and it seemed only proper that the historic old town of Boston, so revered by all the country, should be the scene of a record session. The speaker said that undoubtedly one of the most important features of the present session was the coming of members from a united profession in New York State. That this reunion had been accomplished with unanimity and perfect harmony was a triumph of professional dignity. He said that one of the important things which must engage the attention of the House of Delegates was the subject of the discussion of proprietary medicines now occupying so much attention. The discussion had been precipitated by the decision of the Council of Pharmacy and Chemistry to exclude from the *Journal of the American Medical Association* advertisements of all remedies the makers of which did not furnish an accurate formula of their components. Much had been said in the rather acrimonious discussion of this subject of the existence of a ring or clique said to be intrenched within the Association, but Dr. McMurtry assured the House of Delegates that, so far as he, as President of the Association, knew, there was no such thing as ring or clique. There was no officer or board or committee which was not directly created by the House of Delegates and responsible to them.

Report of the Secretary.—Dr. George H. Simmons of Chicago then read the secretary's report. Last year on June 1, 1905, there were 19,285 members of the association. Down to May 1, 1906, the names of 5,559 were added to the list of members, 1,208 names were dropped, 171 because of death, 619 because of resignation. The net gain was, for eleven months, 4,351 members. The total membership May 1, 1906, was 23,636.

Report of the Board of Trustees.—Dr. T. J. Happel of Tennessee presented the report of the Board of Trustees. He announced a surplus in the treasury, deducting $10,000 of indebtedness, of over $236,000. The annual income of the association amounted to about $275,000. The annual expenses to approximately $250,000. The net surplus each year above all expenses was about $25,000.

Report on Medical Legislation.—Dr. C. A. L. Reed of Cincinnati, O., then presented the report of the committee on medical legislation. He said that the past year had been an extremely busy one, the committee having to do with legislation with regard to: 1. A Department of Public Health, with Representation in the Cabinet. 2. The Army Medical Reorganization Bill. 3. The Pure Food and Drug Bill. 4. Amendment of the Lunacy Laws of the District of Columbia. 5. Governmental Regulation of Indigent Consumptives. 6. Antinostrum Crusade. 7. Government Recognition of the Services of Dr. James Carroll. 8. Regulation of Medical Practice in the Government Reservation of Hot Springs. 9. Bill for the Relief of the Widow of the Late Surgeon-General Wm. A. Hammond. 10. Bill to Restore the Canteen in the Army. 11. Bill Regulating the Treatment of Inebriates in the District of Columbia. 12. The Postoffice Attitude Toward Nostrums.

The National Legislative Council.—Dr. Reed declared that this was a feature of legislative organization of the American Medical Association that deserved every possible encouragement. Many do not realize its possibilities for good, but there is scarcely any phase of medical life between the annual meetings that was of more importance or vital significance.

Bureau of Medical Legislation.—This represented a development of the organization of legislative effort for medical purposes that the committee considered should be once more brought to the attention of the House of Delegates.

Organization to Suppress Quackery.—The committee considered this as almost the most important function of the legislative committees of medical societies. It had been asked to take a prominent part in a movement whose sole object shall be to deal with the question of quackery as represented not only in the manufacture and purveying of poisonous or otherwise deleterious proprietary medicines, but in the dishonest representations that were made by unscrupulous advertisers.

Necessity for Legislative Committees.—This was emphasized by the conditions which had developed as the result of the investigation of the Chicago stockyards. There was need, it was said, of vigilant trained minds to appreciate the possibilities of abuse and bring about correction of evils that threaten health so nearly. The question, then, of proper compensation for those who give their time to such work as will bring legislative relief for these evils must be earnestly considered if the association would not abuse the privilege it has of taking the time of its members.

Reciprocity in Medical Practice.—Dr. W. L. Rodman of Philadelphia, Pa., said that reciprocity of licensure between the various States was the burning topic in the practice of medicine at the present day, and every one admitted that there were serious injustices worked in individual cases by the present confusion of State laws. The committee suggested that a council on Medical Education should be intrusted with the recognition of the attainments and the moral character of applicants to practise and that their recommendation should have weight with all State examining boards. Ten years of practice should be considered the equivalent of passage of an examination. Uniformity could only be brought about by the fusion of many elements in medical life. The examining boards, the association of medical colleges, and the State societies might work together for it. The outlook would be hopeful if a start were once made.

Second Day—Tuesday, June 5.

The House of Delegates was called to order by Dr. William J. Mayo, who had been installed as President of the Association at the first general session.

Walter Reed Monument Fund.—In the absence of Dr. Keen of Philadelphia, who was unable to be present, the report of the Dr. Walter Reed Monument Fund was read by Dr. Simmons. Nearly $20,000 had been actually collected and about $1,200 additional subscribed. Most of this had come from members of the medical profession. The commercial interests of the country, though so much benefited by the successful investigations of Dr. Reed, had done practically nothing in the matter of contributions to a monument that would properly commemorate what was, after all, one of the most distinctive advances in medicine of the last hundred years. The committee's report further commented on the fact that only $25 of the amount had come from Cuba, though that island had been rescued by Dr. Reed's work from its greatest plague—the one thing that had seemed to preclude the idea of its becoming the center of great commercial undertakings. The Southern States, though so favorably affected by Reed's discoveries, had not been much more generous, and scarcely more than $1,000 had come from that region. As having accomplished its work, the committee asked to be discharged, though it had been hoped originally that $25,000 would be collected.

Report of Organization Committee.—Dr. J. M. McCormack of Bowling Green, Ky., read the report of his

work as chairman of the Organization Committee. The most interesting phase of it had been the question of arousing public attention to medical questions. Another point toward which, in his capacity as professional organizer, he had been working was the establishment of courses of post-graduate study in medical societies. He had been greatly hampered in his work by the machinations of the makers of proprietary medicines.

Amendment to Constitution.—After having laid over for two years, having been further modified last year, this amendment to the constitution was adopted after some debate in which the danger of concentrating too much power in the hands of the Board of Trustees was pointed out. The amendment last year read: "If, after a place of session has been selected, it becomes apparent that satisfactory transportation rates cannot be secured, or the Association cannot be properly entertained and cared for, the Committee on Transportation and Place of Session be and are hereby authorized to change said place of session, but said change shall not be made later than three months preceding the date fixed for the annual session." To this the following modification was made: "The time and place of session may, however, be changed by the unanimous action of the Board of Trustees at any time prior to four months from the time selected for the meeting." By an amendment to the bylaws the Committee of Arrangements of the Place of Meeting remained at all times under the control of the Board of Trustees. The Board of Trustees shall have full control of all arrangements for the annual sessions and shall provide meeting places for the Association, the House of Delegates, and the various sections. It shall also have control of all exhibits. The Board of Trustees in their discretion may appoint a local committee of arrangements which shall be at all times under the control of the Board of Trustees. An amendment to the bylaws was passed empowering sections of the Association to elect a delegate and an alternate. Such delegates, as also those appointed from the Army and Navy and other commissioned medical services of the United States, to serve for but one year. A special amendment to the bylaws was passed, allowing commissioned medical officers of the United States Army and Navy and of the Marine Hospital Service to become members of the Association without the payment of the usual dues.

Scientific Exhibit Report.—Dr. F. B. Wynn of Indianapolis, Director of the Scientific Exhibit, made his report on the gradual development of this department of the annual meeting. It began in 1900, at Atlantic City, with a simple pathological exhibit. Now it had extended to a large exposition of most features of modern medicine. Its growth had brought about the establishment of medical museums in many State and county societies, and in general the collection of all sorts of interesting medical material, and undoubtedly had suggested the idea of the recent exhibit of the National Tuberculosis Association, which admittedly had accomplished so much good. Further popular exhibits of medical objects would help in the medical education of the masses and the general crusade against disease and the campaign for sanitary evolution.

Loving Cup from Board of Trustees.—Dr. T. J. Happel of Tennessee, chairman of the Board of Trustees, then presented to Dr. F. B. Wynn, for the trustees, a loving cup in recognition of the successful work he had done (even assuming the pecuniary obligations of the first exhibit until relieved of them by the trustees) in organizing this exhibit, which had now become one of the most interesting, instructive, and valuable features of the annual meeting of the Association. Dr. Wynn, in accepting, emphasized his disclaimer of deserving all the commendation for the success of the exhibit. He named many men in many cities without whose help it would have been impossible.

Amendment as to Roll Call of Delegates.—As the result of the report of the Committee on Reporting of Minutes, it was resolved that henceforth there would be a roll-call of the House of Delegates, attendance to be noted accurately in the minute book.

Vote of Thanks.— Dr. Phillip Mills Jones of San Francisco, Cal., offered a series of resolutions, all of which were adopted. A vote of thanks to Dr. George H. Simmons was the first clause and with its preamble included an indorsement of all the work he had done. A vote of thanks and indorsement of his work was also given to Dr. J. N. McCormack, the official organizer. It was resolved that the Trustees should henceforth be nominated orally in the House of Delegates and elected separately.

Independent Medical Journals.—The committee disclaimed any intention on the part of the National Association or on that of the State Societies to injure the independent medical journals owned or edited by physicians. These had in the past done excellent work for the development of medicine and the diffusion of the kowledge of medical advances. Many of them still continued to accomplish this valuable purpose. The House of Delegates then was asked to recommend to the support and patronage of the members of the American Medical Association such medical journals as did not receive unethical advertisements.

Fireproof Vault for Records.—The committee presented a resolution for the construction of a brick fireproof vault in the basement of the American Medical Association's building in Chicago for the preservation of all records of importance and especially of those relating to the licenses of physicians. Because of the neglect of such a precaution all records of medical license in San Francisco were lost, the records of the State Medical Society, of the County Medical Society, and even of the County Clerk having been destroyed. Fortunately all the data had been sent to Chicago for the Medical Directory of the Association and could now be recovered.

The American Medical Directory.—The work of making a medical directory of the county was approved and it was announced that it would not cost more to members than the actual expense involved in its publication. This might be large the first year, but subsequently would be less, though its value would grow from year to year.

The Pure Food Bill.—Dr. C. A. L. Reed, chairman of the Committee on Medical Legislation, introduced a preamble and resolutions which were unanimously adopted, calling upon Congress to place the pending pure-food and drug bill on its passage during the present week.

Insurance Fees.—Dr. J. N. M. McCormack of Bowling Green, Ky., introduced a resolution asking for the appointment of a committee to investigate the present situation as regards medical life insurance examiners' fees. The recent reduction in fees had been made without any due reason. The medical departments of the large life insurance companies had been the only ones unsmirched by the recent investigations, yet when the reform economies had been introduced the medical examiners had suffered the most. Certainly the former fee was not excessive.

Medical Libraries for San Francisco Physicians.—Dr. Frank Billings of Chicago introduced resolutions asking the cooperation of the American Medical Association in the provision of books for the physicians of San Francisco who had lost their all by the earthquake and fire.

The Army Medical Bill.—A resolution was introduced commending this bill, which had the approval of the President of the United States and of the Secretary of War, but which had been before Congress for two years without being acted upon. The bill would improve the medical service of the Army especially. The President of the American Medical Association was instructed to send a telegram to the speakers of the House of Representatives at Wash-

ington asking him in the name of the association to use his best efforts to secure the passage of the bill as soon as possible.

Relief Contribution for San Francisco Physicians.—A resolution was introduced and passed unanimously appropriating $5,000 for the needy physicians who suffered by the San Francisco earthquake and fire. This resolution was referred to the Board of Trustees. On motion after some discussion it was resolved that this fund should not be for distribution only to members of the American Medical Association in and around San Francisco, but to all physicians in good standing. Because of the fact that in some known instances at least physicians in other parts of California lost their all it was resolved to leave to the Board of Trustees as informed by the California State Medical Society the question of distributing this fund to physicians outside of San Francisco also wherever it was deemed advisable.

Remission of Annual Dues.—On motion of Dr. J. N. McCormack of Kentucky the annual dues of all members of the American Medical Association living in San Francisco were remitted for the next year. The same rule was to apply to sufferers from the earthquake in other parts of California. The whole matter was referred to the Board of Trustees for eventual decision, and the resolutions were to be considered as at most advisory, not imperative.

SECTION ON MEDICINE.

Dr. Herbert C. Moffitt of San Francisco, Cal., in the Chair.

First Day—Tuesday, June 5.

Some Clinical Observations in a Case of Acute Lymphatic Leukemia, Suggesting Infection as an Etiological Factor in the Disease.—Dr. Philip Marvel of Atlantic City read this paper. He said that the etiology of leukemia, notwithstanding the great progress made in recent years, still remained in doubt, but the morbid phenomena of acute infectious diseases had impressed him with the strong conviction of their resemblance to the clinical manifestations of the case of acute leukemia or lymphemia which he reported in very great detail, that he wanted to call attention to it. He first referred to the anatomy and physiology of the palatine or faucial tonsils, which were apparently the chief, if not the primary, points of attack in the case reported, and which bore a relational comparison to the cases to which reference was to be made. It was not without interest in this connection that reference was made to the coincidence that infections much more readily occurred in childhood and in early life than in advancing or mature age, which was equally true of leukemia, especially of the acute lymphatic form. It was very unfortunate that an autopsy was not obtainable. The special features to which he wished to draw attention were, first, the undefinable cause of the pain in the limb, being the first noticeable evidence of the disease; secondly, the slowly progressive anemia, coincident with menorrhagia; third, the acute attack of tonsillitis, and its relation to the subsequent enlargement of the lymphatic glands in the neck, face, axilla, and groin, with the thyroids, liver, and spleen; fourth, the absence of pathogenic change in the blood cells. Clinically supporting the diagnosis were the following observations: The rapidly progressing anemia, conspicuous preponderance of lymphocytes, general debility, pathogenic change in the lymphatic glands, enlargement of the spleen, liver, and thyroids, early appearance of petechia, ecchymotic or purpuric areas, hemorrhagic dyscrasia, gastrointestinal irritation, and associated with the latter part of the illness, profuse sweating. The clinical evidences pointing to infection in this case were strikingly similar to those recognized in scurry sepses and other accepted bacterial diseases. A review of the cases of acute leukemia, previously reported, showed a remarkably large percentage of tonsillitis, associated with the earlier symptoms of the disease, hitherto not considered important. If one followed closely recent studies in numerous systemic infections that had been the immediate evidences of a streptococcic tonsillitis, *e.g.* endocarditis, myocarditis, nephritis, articuloarthritis, peritonitis, appendicitis, and a variety of conditions, called rheumatism, etc., and these were occasioning no slight interest in the relationship, and which he believed did exist, between the streptococcic invasion of the palatine tonsils and the pathogenic involvements which followed, the inference was not without interest. Reasoning *a priori*, the foregoing, he said, would seem strongly supportive of the position taken, viz., that the acute streptococcic tonsillitis occurring as the earliest definite manifestation in this case, if not immediately causative, the streptococci or their toxins had much to do with the pathogenic change and subsequent behavior of the lymphatics and blood tissues, and incidentally with the serious metabolic disturbance, functional failures, and death which followed.

The Relation of Excessive Gastric Acidity to Gastric Symptoms.—Dr. J. Dutton Steele of Philadelphia read this paper. He said that his object in presenting this paper was to confirm Dr. Stockton's observations, and he proposed to go a step farther to show that excess of acid alone was not capable of producing the symptoms of gastric irritation seen in so-called hyperacidity. There must be some other condition present which rendered the gastric mucous membrane more sensitive than usual, so that it could not stand an amount of acid that would be easily tolerated if the mucous membrane was in a normal condition. In order to determine what produced this hyperesthesia of the gastric mucous membrane he presented an analysis of a series of thirty cases with symptoms of hyperacidity, which showed quite clearly that the irritation occurred, not only when the per cent. of the acid was high, but often when it was within the middle and lower grade. This would indicate that the mucous membrane was so hypersensitive that it was intolerant not only to high grades of acid, but often to middle or low grades. In about one-half of his cases the cause for the irritation and pain laid in the existence of decided gastric motor insufficiency or of hypersecretion. In his cases three had undoubted signs of alimentary hypersecretion. Ten cases had decided retention. In fourteen cases of his list no cause could be demonstrated for the hyperesthesia. In seven the acidity was of the higher grade and in the other seven of the lower and middle grades, including one case of achylia. In almost all the cases the gastric symptoms were directly connected with overworry or fatigue, or were the part of a general nervous irritability. In all the patients the gastric symptoms improved and finally disappeared under a treatment directed toward relieving the nervous strain and raising the level of nutrition without paying much attention to the conditions of the stomach. The result of the treatment, quite as much as anything else, would indicate that the hyperesthesia was a local manifestation of a general nervous irritability. That was, it was a sensory neurosis of the stomach. If what he said was true, namely, that the hyperesthesia rather than the acidity was the point of attack in our therapeutics, then considerable light was thrown upon the treatment of the condition. Dr. Steele then considered briefly the following three points in the treatment: the diet, the use of sedatives, of alkalies and of nux vomica. Regarded from the standpoint of the treatment of hyperesthesia of a nervous origin, a liberal and unirritative diet would be the most suitable; its liberality would improve nutrition, and in this way help general nervous irritability. All food should be given in such a form as to produce the least possible irritation. To relieve the pain the acid should be neutralized after the height of digestion, and this required the use of alkalies at about the time the pain would

appear. The various nervous sedatives had proven very useful in temporarily relieving the discomfort in these cases with irritative symptoms. In the rare cases of achylia with hyperacidity symptoms they were the only means of relief. The beneficial effects of nux vomica in spite of the apparent contraindication to its use in cases of hyperacidity symptoms, were perfectly explained when we considered that it was a sensory neurosis and not a temporary increase in gastric acidity that we were treating. His own experience had shown that nux vomica given as Musser suggested was an excellent remedy in those cases where one was attempting to remove a local neurosis by increasing the general nervous stability of the individual.

Dr. De Lancey Rochester of Buffalo emphasized the importance of making numerous examinations of the gastric contents and under different kinds of circumstances before coming to any definite conclusions as to the presence of superacidity. With regard to the motor insufficiency as a cause of the pain, he said it was not simply this but the attempt of the stomach to empty itself, producing a sort of colicky pain.

Dr. Charles G. Stockton of Buffalo said the subject of hyperesthesia in this connection was very important, and more of these cases were seen than those of hyperchlorhydria. The profession, too, should recognize the fact that sometimes symptoms may be made very acute merely from disturbances of the general nervous system, and which can be relieved by measures only of a general character.

Dr. H. A. Hare of Philadelphia said that the giving of drugs to relieve the pain in this condition was similar to the homeopathic form of treatment, not, of course, following the principle of *similia similibus curantur,* but characterized by an endeavor to treat the symptoms instead of the cause producing the symptoms. Most of the drugs recommended in many text-books for the relief of these cases were under the group of nerve sedatives. They not only did no good, but they did much harm in many instances. Many of these cases that had resisted treatment by drugs, diet, etc., had recovered by following out a plan of rest cure. It was again very important that an examination of the gastric contents should be made several times, at the identical same time of day, under the same identical circumstances, and by the same identical man, if definite results were to be gotten.

Dr. Smith of Boston said that if the hyperchlorhydria was due to a general neurosis this condition then should be treated.

Dr. Chas. N. Hughes of St. Louis spoke of the work of a man who wrote three-quarters of a century ago who anticipated some of the views that were now being offered in this country and abroad, and in this book the relation between the stomach and the brain was entered into further. A consideration of this would result in great value in the management of dyspepsia or apepsia.

Dr. John A. Witherspoon of Nashville, Tenn., believed that it was not only necessary to examine the stomach contents, but also to examine its size and its capacity for drainage; the essential part of the treatment in these cases was directed to drainage of the stomach.

Dr. Sippy of Chicago said that the complexity of symptoms commonly designated as hyperchlorhydria were often treated by the general practitioner, and he wished to call attention to the fact that pain was not a common symptom. There was complained of more a feeling of discomfort or fullness. When pain was present as a constant symptom it almost always meant the presence of an ulcer.

Dr. Max Einhorn of New York discussed the paper. Dr. Steele closed the discussion.

Post-Critical Fever and Other Sequelæ of Croupous Pneumonia.—Dr. James E. Talley of Philadelphia read this paper and said that a study of the last 325 cases at the Presbyterian Hospital formed the basis for the article. He said that almost naturally one thought of suppurative conditions somewhere as the commonest cause of the persistence of fever after the crisis in pneumonia, though apparently endocardial and pericardial inflammation was a close second. Among the suppurative cases they found five of empyema, one being interlobar, one encysted, and one genuine case of lung abscess which was large enough to be diagnosed antemortem. After relating the histories of many cases Dr. Talley said that the causes of post-critical fever in croupous pneumonia were evidently manifold, and the exact cause could only be determined in a given case by careful and repeated examinations of the patient. Even when such examinations were apparently negative, one should be slow in attributing the fever simply to delayed resolution or autolysis alone. The number of small abscesses found in the stage of gray hepatization, post-mortem, would incline him to believe that it was not alone the slow resolution, but perhaps more often a varying degree of this purulent tendency, especially in the stage of gray hepatization, that explained the fever. Though the abscesses were usually multiple, one case showed distinctly one small abscess which in itself might have caused the persistence of fever, and it was conceivable that such an abscess might discharge undetected or, surrounded by an encysting wall, gradually absorb and the case recover without the exact cause of the fever ever being known. Even an encysted empyema, if small, might be hard to demonstrate. The value of the *x*-ray in detecting these conditions in the chest were variable. It was the common experience of a thickened pleura in this class of cases that rendered the *x*-ray of less value. Given a previous consolidation without much thickening of the pleura, and the shadow was less uniformly dense than that of fluid in the pleura; so that under such circumstances a loculated empyema or a full abscess cavity was apt to stand out by its dense shadow in contrast to the less homogeneous shadow of a resolving pneumonic consolidation. Under such circumstances an empty cavity was even more evident, surrounded as it usually was by its wall. One case showed that an area of bronchiectasis with the bronchial tubes filled with secretion simulated an abscess. The mistake was all the more natural, as there existed above a well-defined cavity of an abscess that had discharged. It was doubtful if the number of endocardial or pericardial involvements in this series really represented the vast importance of the subject, and that which must be attached to this cause as the factor in many fatal cases. One must be alert for this complication, especially in those who have an old endarteritis or atheroma. The case detailed showed that the right side of the heart was by no means free from serious involvement. The development of a systolic murmur might be explained by the anemia well known after pneumonia or by the relative insufficiency due to a weakened heart muscle; but the development also of a diastolic murmur usually meant that there was genuine endocarditis, as proven by the autopsies.

Dr. De Lancey Rochester of Buffalo, Dr. N. S. Davis of Chicago, Dr. Lichty of Pittsburg, Dr. Alexander Lambert of New York, and Dr. LeRoy of Nashville, discussed the paper.

A Case of Colon Bacillus Septicemia.—Dr. DeLancey Rochester of Buffalo, reported in minute detail this case. The patient had a septicemia due to an organism belonging to the *Bacillus coli* group. This organism in the beginning did not have the characteristics of the *Bacillus coli communis,* but under subsequent cultivation developed them. The organs and tissues had the gross lesions of septicemia.

Proprietary Medicines and Their Abuses.—Dr. George Dock of Ann Arbor, Mich., read this paper. In discussing some of the remedies proposed for the present abuses he said that one was the exclusion of advertisements of proprietary remedies, at least those of unknown composition, from medical journals, and there were some good reasons why this view should receive consideration. A scientific periodical journal certainly made a more pleasing impression when it was

free from all advertising. Merely keeping such advertisements out of the journals would, however, not stop the nuisance, for the same matter, or more, would be forced upon us in other ways. Nor would the exclusion of such matter from journals be a likely aid to the morals of those who now fell victims to the wiles of the advertiser. It would hardly be expected that physicians would abandon the reading of journals with advertisements of nostrums, but if the goods advertised were not bought the obnoxious pages would soon disappear. It would seem possible to exclude the most exaggerated or obviously baseless claims, but even this was not so easy as might seem at first glance. A decided gain would come from a freer criticism of all kinds in our medical literature. A fear of frankness seemed to bind upon all; much depended upon trade affiliations, but it seemed to spread beyond them. The best proprietary remedies would continue to be made and advertised; all sorts of claims would be made for them, and the profession could not directly stop those things, even though they thought it desirable to do so. They could, however, learn how to use better than they did now well-known remedies, and in that way lessen the use of the others. Although they could not draw a sharp line between unprincipled time-serving or the affectation of ultra-modernity, they could at least express their opinions of crude experimentation. They could look as coolly upon new drugs as they did upon a new phase of mental healing or a new application of massage. If this were done, production would be less rapid, the vogue of each novelty shorter, the possible virtues of some more quickly determined. He asked how the profession could be brought to a better attitude as regarded the present evil. What was needed was (1) broader and deeper training in preliminary and biological branches, and the cultivation of exact habits of mind; (2) a more intense study of pathology, not merely to acquire anatomical data, but to learn the actual results and extent of the lesions in common diseases, so that the student might offset speculation with fact; (3) a more intimate study of clinical medicine, that could come only from more prolonged and more personal investigation at the bedside. Dr. Dock summed up by stating that proprietary medicines were increasing as the result of natural developments. Their abuses sprang partly from the exaggeration of legitimate commercial methods, partly from the credulity of the medical profession. The remedy for the latter was wholly in ourselves, and he asked that all do what they could to overcome this at least.

The Physician's Responsibility in the Nostrum Evil.—Dr. Richard C. Cabot of Boston considered this phase of the question.

Dr. W. S. Thayer of Baltimore, Dr. H. A. Hare of Philadelphia, Dr. McClellan of Chicago, Dr. S. Solis-Cohen of Philadelphia, Dr. Hutchinson of Arrowhead Springs, Cal., Dr. Francien of Philadelphia, Dr. LeRoy of Nashville, Tenn., discussed the paper.

Drs. Dock and Cabot closed the discussion.

Indications and Contraindications to the Use of the X-Rays in Medical Cases.—Dr. D. L. Edsall of Philadelphia considered this topic.

Drs. Brown and Price discussed it.

Second Day—Wednesday, June 6.

The meeting this day was a joint session with the Section on Pathology.

Some Observations on the Effect of the Withdrawal of Fluid from the Thorax on the Blood Pressure.—Dr. Joseph A. Capps of Chicago read this paper. He said pleural exudates were often under a positive pressure of 5 to 26 mm. during expiration, and that this positive pressure acted in direct opposition to the normal intrathoracic negative pressure impeding the flow of the venous blood from the abdomen into the thorax when the exudate was large. An effort was then made (by the respiratory muscles) to restore the negative pressure within the chest; deep inspiration increased the intrathoracic negative pressure to such an extent that compensation, or partial compensation that the venous flow was maintained. If such compensation failed, the right heart received an insufficient amount of blood; the left heart did not fill the body arteries, the blood-pressure sunk rapidly and death became imminent. The withdrawal of fluid from the pleural cavity was attended with less danger than its introduction or accumulation. Unfavorable symptoms usually came on suddenly, so that any sign that would warn of the approaching danger would be of great benefit, and the observations were made with that view. In his observations of 15 cases of pleural effusion, four of which were tapped twice, he took the blood pressure at short intervals before, during, and after thoracentesis, in each of which aspiration had been used. The blood charts exhibited widely varying features, but there were some constant features, as follows: during the excitement of preparation and pain of puncture, a temporary rise in temperature; during withdrawal of fluid, pressure fell and reached the lowest point at the time of or subsequent to the removal of the needle, the average fall in the 19 aspirations being 20 mm.; pressure taken an hour or two afterward was usually 5 to 15 mm. lower than the initial pressure, the average fall in the 19 being over 8 mm. Some special influences had also been noted, as follows; the amount of fluid withdrawn was an important factor in determining the degree of the fall; the rapidity of the withdrawal was no less important, other things being equal, slow aspiration causing less fall than rapid; the duration of the effusion was of greatest importance, and in the recent cases the fall was not great and the recovery was rapid; in long-standing cases the fall was greater; senile changes in blood-vessels and heart seemed to favor rapid and deep fall with slow recovery, however; heart disease alone appeared to have little effect, neither did pneumothorax appreciably affect the blood pressure; up to a certain point arterial pressure increased with increase in pressure of intraabdominal fluid; beyond this it fell, and this fall was regarded as of the nature of a temporary collapse, due to sudden relaxation of the splanchnic vessels. The rate of withdrawal of the fluid was found of more importance than the amount withdrawn, though the final pressure was more affected by the amount. Pressure externally on the abdominal wall at end of drainage raised pressure 5 to 20 mm. Cases which underwent a marked fall during operation showed the most marked improvement.

Chronic Nontuberculous Affections of the Lung.—Dr. Sherman G. Bonney of Denver read this paper. He said that bronchitis and bronchiectasis, while strictly excluded by the subject, almost invariably coexisted with emphysema, chronic interstitial pneumonia, pneumonokoniosis, and nontuberculous bacterial infections, the clinical manifestations of which were reviewed in his paper. The chief interest attached to the study of nontuberculous pulmonary conditions related to their simulation of consumption, so that a clearer differentiation would be of value. Cases indigenous to Colorado were such as exhibited morbid changes developed as a result of local conditions. So-called miners' phthisis was difficult of dissociation from consumption, as it presented the rational symptoms of tuberculosis, even to frequent pulmonary hemorrhages, and occasionally showed the presence of the tubercle bacilli. In these cases the author said that bacilli appearing only after long observation were not to be considered an etiological factor of importance, as the terminal infection had merely been engrafted upon a soil previously made receptive. The actual morbid processes consisted of chronic bronchi-

tis, emphysema, bronchiectasis, pneumonokoniosis, with occasional cavity formations resulting from anemic necrosis and other causes. Such cases developed in the mining districts (of Colorado) almost exclusively. Predisposing causes were long hours underground, breathing atmosphere devoid of oxygen, extreme dampness, exhalations from the candles, smoke resulting from the blasting, the constrained position, frequent wetting of the feet, alcoholic habits, immoderate exercise at high altitudes, and unhygienic surroundings when not at work. The distinguishing feature being the chronic bronchitis and emphysema and bronchiectasis, the development of which was due to the frequent paroxysmal cough, weakening of the bronchial walls from emphysema, and pressure exerted by stagnating secretions. Corresponding to fibrous tissue proliferation of interstitial pneumonia, bronchiectatic cavities developed; through the ulceration of the mucous membrane these might be transformed into genuine pulmonary cavities, or they might develop by reason of necrotic softening of the tissues, in which event they were more likely to increase in size and had wider bearing on the course, especially if communicating with a bronchial tube. Secondarily to these changes were marked circulatory changes manifested by venous engorgement and enlargement of the right heart. Symptoms which arose from this group of chronic disturbances were of gradual development, relating chiefly to dyspnea, cough, and expectoration, loss of weight and strength, and cyanosis. The physical signs upon inspection consisted of dyspnea; capillary dilatation upon chest in front, changes in configuration of thorax commonly ascribed to emphysema, sometimes unilateral or bilaetral retraction of the apices. Upon palpation the signs were signs of partial consolidation, usually at apices, moist râles, fine and medium sized, unilateral dullness; cavity signs in almost any portion of the lung, exactly as in tuberculosis. The prognosis was regarded as almost invariably unfavorable. The essential diagnostic feature was the differentiation from pulmonary tuberculosis. Another class of cases observed were those designated as "imported cases," being the cases sent to Colorado under a diagnosis of tuberculosis. Chronic influenza was mentioned as being capable of exhibiting all the rational symptoms of tuberculosis. In cases under treatment where there was absence of tubercle bacilli the amelioration of symptoms had been disproportionate to the required periods for corresponding improvement in similar cases showing the tubercle bacilli.

The Treatment of Pleurisy with Effusion.—Dr. F. Forchheimer of Cincinnati read this paper. He said a number of explanations had been offered to show how serous effusion was removed by nature, the oldest being that of absorption, either by blood-vessels or lymphatics. The mechanism was merely a "lymphatic pump," but when there was a great effusion lymphatic absorption was entirely suspended, because expiration could not take place. The author regarded it as more likely, however, that the compression of the lung was the predetermining factor. This intrapleural pressure had been found to be as great as 40 mm. of mercury. If these explanations were accepted, it would then appear that absorption was arrested by inflammatory processes deposited upon the endothelial layer; also by intrapleural pressure. Absorption by the pleura, being diminished by exudative processes, the inflammation of the pleura itself must be reduced, for which the present treatment consisted of the use of the ice bag, local hydrotherapy, rest in bed, strapping the affected side, counterirritation. The second indication mentioned was the loosening of the intrapleural pressure by the removal of the fluid. General and local treatments had been employed; the general aiming to modify the blood structure in such a way that absorption took place, for which purpose use was made of cathartics, diuretics, diaphoretics, diet, and the milk cure, but the local treatment was preferred by the author as fully covering and meeting the indications, and of the two local methods, counterirritation and emptying the fluid, the latter was declared the most successful and practicable. The author believed that the fluid should not be allowed to remain in the cavity until the development of dangerous symptoms, or even to collect, because of the danger of the formation of adhesions, and because a man having a pleuritic effusion was not to be considered as in a good condition, as dangerous symptoms might develop at any time. Proper precautions were necessary. The aspirator should at first contain air, and the attempt should not be made to withdraw all the fluid at one sitting. No more should be withdrawn than necessary to relieve the symptoms, as natural absorption would then take place. Patients should be in as nearly a recumbent position as possible and the patient should be watched during the operation, and if there was violent and spasmodic coughing, constriction, faintness, and pain the operation should be suspended for a while. In chronic serous effusion a different condition was present, and accordingly somewhat different methods, suitable for the relief of that condition, would be required. In empyema the treatment differed in principle from the treatment of serous effusion. The treatment was a purely surgical one, and the indication would be the opening and draining of the abscess. Of course some of the cases recovered where aspiration was the only treatment, but the proportion of recoveries had been small, and it would be impossible to say just which case would get well. The earlier the abscess was opened, the less would be the mortality. Difficulty arose at times in getting the abscess to heal up. When the adhesions covering the lung were removed, it expanded, so that even a rigid walled abscess could be made to heal up.

Dr. J. C. Wilson of Philadelphia said that he heartily indorsed the appeal that had been made in the papers for an early removal of the pleuritic effusion because the effusion was to be regarded as a foreign body interfering with the mechanical functioning of the thoracic organs, and was liable to become a focus for the production of toxins.

Dr. J. N. Hall of Denver called especial attention to the points brought out by Dr. Bonney, stating that there were many factors not usually mentioned in the text books. These men worked from two to two and a half miles above sea-level, and lived in camps one or two thousand feet below the mines. They developed hearts of a weight out of proportion to the body weight; they also increased in lung power. Emphasis was laid again upon the remarks of Dr. Bonney as to the predisposing causes.

Cytology and Pleural Effusion.—Dr. Percy Musgrave of Boston read this paper. He said the following cells had been observed in pleural fluids: lymphocytes, polynuclear leucocytes, mononuclear leucocytes, eosinophiles, mast cells, endothelial cells, free and in clumps, or so-called plaques, red blood corpuscles, nucleated red blood corpuscles, masses of both sarcoma and carcinoma cells. Cells found in common in the blood and in pleural fluids differed in that the latter might have undergone degeneration. The white corpuscles as a rule had undergone a shrinkage, which was true in a lesser degree of the polynuclear leucocytes. The technique of the examination was described as consisting merely of the withdrawal of the fluid under aseptic conditions, which was centrifugalized for five or ten minutes. A loop of this mixture would be placed on a cover slip and allowed to dry, and then stained. The author believed that many of the differences as to the value of cytodiagnosis were due to careless technique. The author believed the method of value, and when the cytological findings were contrary to clinical findings, the cytological findings were confirmed at autopsy.

Bacteriology of Pleural Effusions.—Dr. L. W. Ladd of Cleveland, Ohio, read this paper. He said that an analysis of the cases reported in his paper would show that many of the cases, and in fact most of them, where effusions (pleural) occurred were tuberculous, though not all; that there seemed to be a tendency in the

tuberculous pleurisies to develop on the left side with greater frequency than on the right, which was also true of tuberculous empyema; that it was not always possible to demonstrate the organisms in the effusion; in pleural effusions develop acute lobar pneumonia, the organisms were discovered the oftener the diagnosis was made.

SECTION ON OBSTETRICS AND GYNECOLOGY.

DR. C. S. BACON OF CHICAGO IN THE CHAIR.

First Day—Tuesday, June 5, 1906.

The Legal Responsibility of the Physician for the Child in Utero.—Dr. C. S. BACON of Chicago, Chairman of the Section, delivered an address with this title. He called attention to the fact that physicians, as well as other biologists, regarded the child in the womb as no less a human being than after its expulsion. Its lack of some of the functions of the child *ex utero* did not disprove this statement. The legal status of the child *in utero*, however, did not conform to its biological status. He emphasized the fact that no one had a right to take the life of the child *in utero* unless for the protection of the mother, as provided by law in some States. It appeared that in most States the law made no difference between the child twenty-four hours old, for example, or in the non-viable stage, and the child about to be born, or in the viable stage. According to the ancient English common law, upon which our law was founded, the embryo or fetus before the term of quickening had no legal rights whatever, no offense being committed by its destruction. The child was supposed to exist only after it moved in the uterus. This was the common law until shortly before the separation of the Colonies from the mother country, now superseded by statutes passed by various States. Some States still provided more serious punishment for the destruction of the fetus after viability. If the mother died as a result of abortion, the one who performed the act was a murderer; if she died as the result of the use of drugs or instruments prescribed by another, the one so prescribing was guilty of manslaughter. It was not within the province of the paper to discuss the relative value of the mother's and child's life. In some States the statutes required that the advice of two physicians be secured in order to produce an abortion, and it was always necessary to show that the condition of the mother required an abortion. Nearly all physicians acknowledged that embryotomy must at times be resorted to. The indications for destructive operations had gradually narrowed. The legal responsibility of the physician was comparatively simple—if he believe that a sacrifice of the child's life was necessary to save that of the mother he was justified in operating, though he should always have consultation. Many operations would be legal that would be morally wrong.

Fibroid Tumors of the Uterus; A Study of 2,274 Consecutive Cases, Including Also a Study of 3,544 Myomata Uteri in Their Relation to Cancer of that Organ.—Dr. CHARLES P. NOBLE of Philadelphia read this paper, in which he gave a mass of statistics, from his own experience and that of others, to show that the percentage of deaths resulting from necrosis, sarcoma and carcinoma is far greater than that resulting from operation for the removal of fibroids. He had become early convinced that the classical teaching concerning fibroids was erroneous. As early as 1894 experience taught him that 30 per cent. would die if the tumors were not removed. As early as 1891 he had become convinced that the presence of fibroids acted as the cause of the development of carcinoma in the body of the uterus. The true way to estimate the gravity of fibroids was to study their morbid anatomy in consecutive cases, as well as their secondary effects on the the uterus was more often associated with fibroids than fibroids had a causal relation to the development of cancer, particularly cancer of the body of the uterus. Malignant disease more frequently resulted from the presence of fibroids that was usually believed. Relatively to its frequency adenocarcinoma of the body of the uterus was more often associated with fibroids than was epithelioma of the cervix. Some fibroids had undergone atrophy after the menopause but he was not familiar with a single authentic case in which a fibroid had entirely disappeared. It was very well known that the dangers arising from fibroid tumors were greater after the menopause than in a woman under forty years of age, which fact was emphasized by Bland-Sutton. The mortality of the operation for removal of fibroid tumors was greatly improved. Deaver, in 105 cases, had 3 deaths, and he himself, in 133 cases, had had one death. The type of tumors in which removal was debatable was small tumors, not growing and producing few symptoms, a question which must be decided in the future.

Dr. MASSEY of Philadelphia said that all the conditions enumerated in the paper as the possible outcome of the presence of fibroids should be diagnosticated before the patient be subjected to the dangers of operation. He thought medical men in dealing with life and death should be most careful to look on all sides of the subject.

Dr. HERMAN J. BOLDT of New York thought the gravity of the condition should be estimated by the symptoms presented by the individual in the particular case under observation. He did not advocate operating because it was known that certain things might happen, but because the woman had symptoms which interfered with her life. The fact that many women with fibromata had malignant degeneration he believed to be purely a matter of coincidence. He thought the mortality rate, taken case after case, would be considerably higher than that obtained by Kelly and Noble; it would be six or seven per cent. rather than one or two. The danger from embolism and thrombosis did not rest entirely with large tumors, but might be present with small tumors, and without as well as with operation.

Dr. CARSTENS of Detroit said the mental symptoms as well as the physical should be considered. If the knowledge of the presence of a tumor had a depressing effect upon the patient's mind, causing her to lose sleep and appetite and to become weak and nervous, the tumor should be removed, just as should one that, from constant bleeding, caused a woman to become weak and anemic and thus prone to take on pneumonia or almost any other disease.

Dr. GORDON of Portland, Ore., said he read a paper in 1884 before the American Gynecological Society in which he made the statement that if a woman came to him with a fibroid and he found that the symptoms of which she complained were due to the fibroid, unless she were a young woman and exceedingly desirous of having children, he would advise hysterectomy. He had no reason to change that opinion up to the present time. He believed the pendulum had swung too far in the direction of conservative surgery.

Dr. LAURENCE of Columbus, Ohio, deprecated conservatism is these cases. The same conservatism had to be gone through with with reference to appendicitis. He emphasized the point made by Dr. Carstens concerning the liability of a patient exsanguinated by a fibroid tumor to take on pneumonia and various other conditions. Surgery done as a *dernière resort* was bad surgery. The Apostoli method he heartily condemned.

Dr. MARCY of Boston said the way to cure a patient was to operate when it should be done and to do it in the scientific way in which it should be performed. He considered the Apostolli method a dangerous one. He advocated the early removal of uterine tumors and the restoration of the patient to the active walks of life.

Dr. ALFONS VON ROSTHORN of Heidelberg, Germany, said the conservatism of a few years ago had largely disappeared because of the better results obtained from modern

methods of operation. A small tumor, found perhaps by accident, might produce a series of symptoms strange to the small size of the tumor and to the locality in which it originated; on the other hand, cases might be met where the whole abdomen would be filled with myomata and yet such patients would go on for years without symptoms. He supposed that the teaching concerning the cessation of danger from fibromyomata with the appearance of the menopause had been abandoned.

Dr. A. DÜHRSSEN of Berlin, Germany, had found in his own experience that more cases of fibroid tumors died without than with operation. In a series of 200 cases of myoma he had observed that more cases died from anemia, sarcomatous degeneration, etc., than from operation. When early operation was advised the mortality was not more than 1 per cent., and he considered enucleation of a fibroid one of the most dangerous operations.

Dr. FREDERICK of Buffalo, N. Y., said from April, 1902, to the present time he had performed 177 operations for fibroids with a mortality of 2.6 per cent. He believed a fibroid tumor, if not malignant, was a malign disease because it went through the same growth, youth, adolescence, and decay, as the organism as a whole was subject to. All growths which dipped deep enough into the uterine wall, with blood supply enough to carry them on, showed a tendency to death.

Dr. HUMISTON of Cleveland, Ohio, said that up to five years ago he was so conservative that he had a mortality of 5 per cent.; since that time he had been an extremist and his mortality had been *nil*. He operated on all cases with symptoms.

Dr. REYNOLDS of Cleveland, Ohio, said he believed malignancy to be more common than statistics show. The mortality in moderate-sized fibroids not showing decided symptoms he believed to be less than 2 per cent. He emphasized the dangers of pregnancy in the presence of fibroids. He advocated hysterectomy in elderly and myomectomy in young women.

Dr. J. WESLEY BOVÉE of Washington, D. C., agreed with Dr. Noble in his deductions. Abortions were more common in persons with fibroids, and the dangers of pregnancy were increased. He would not hesitate about operating in a case of ovarian tumor, nor should one hesitate in early cancer of the cervix, even if it had given absolutely no symptoms.

Dr. Noble, in closing the discussion, gave further statistics upon which he based his deductions. He said that every time Dr. Boldt operated for ovarian cyst where the woman is not in immediate danger he violated the rule which he laid down for operating only in the presence of symptoms which warrant operation.

The Treatment of Tuberculosis of the Urinary Tract in Women.— Dr. EDGAR GARCEAU of Boston read this paper. He said the treatment of tuberculosis of the urinary tract in women had been much more satisfactory the last few years than heretofore. A better means of diagnosis had contributed to this end, as well as improved therapeusis. The vesical mucous membrane could now be treated locally with the greatest ease and accuracy by the employment of Kelly's cystoscope. Early cases of the disease were sometimes best treated by change of climate, which method of treatment should be tried first if the disease had not progressed too far. The local treatment of vesical tuberculosis depended upon the stage of the disease. In those cases in which there was only vesical injection local treatment was intolerably painful and harmful. When, however, tubercles had begun to appear, especially if there were ulcers in the bladder, a great deal could be accomplished with corrosive sublimate and nitrate of silver. The corrosive sublimate should be employed as recommended by Guyon. At the same time hygiene, rest, etc., should be insisted upon. If ulcers were present they should be treated by applications of pure nitrate of silver, the applications being repeated once or twice a week as occasion demands. When the disease was well advanced there might be a secondary infection with numerous granulations and ulcers on the vesical surface. He recommended for such cases cauterization of the whole bladder under ether. In the event of failure of this method cystotomy should be performed. The Guyon treatment should be resumed after healing of the fistula in the latter method. He cited a case in which he had done cystotomy and the fistula remained open for two years, during which time Guyon's treatment was persistently carried out. Nephrectomy should not be advised in case of renal tuberculosis with extensive coexistent tuberculous infection elsewhere in the body. A tubercular ureter was best treated by complete incision down to the bladder. He reported two absolute cures in a list of eighteen cases.

The Formation of Vesicovaginorectal Fistula Combined with Closure of the Introitus Vaginæ for the Purpose of Overcoming Certain Forms of Urinary Incontinence.—Dr. REUBEN PETERSON of Ann Arbor, Mich., in this paper reported in detail the case of a woman who had incontinence of urine and prolapse of bladder following the radical removal of a suspicious malignant growth of the urethra. Formation of a vesicovaginorectal fistula and closure of the urethra and introitus gave relief from incontinence. The rectum served the purpose of a bladder, the patient being able to hold urine for a number of hours. There was no irritation of rectum, vagina, or bladder, and careful microscopical examination of the urine failed to show any ascending renal infection, as would be expected by the experimental work of Frank, the author, and others. There would be no ascending renal infection where the vesical orifices were retained, no matter by what method the vesicorectal anastomosis be made.

Dr. NOBLE of Philadelphia said he thought tuberculosis of the urinary tract in woman far more curable than Dr. Garceau reported from his experience. In sixteen or seventeen cases of tuberculosis of the kidney which he had treated all the patients recovered from the operation and were perfectly well at present. Treatment of tuberculosis of the bladder resolved itself into whether it is primary infection or secondary infection of the kidney. He long ago gave up all methods of early diagnosis except securing the urine from each ureter by means of the ureteral catheter and injecting this into guinea-pigs. The study of the tubercle bacilli was misleading because if a negative report were rendered one would not know but that the bacilli were present, and a positive report might mean that the smegma bacillus was mistaken for the tubercle bacillus.

Dr. BOVÉE of Washington said the results as suggested by Dr. Noble, were largely dependent upon whether the disease was localized in those organs or whether it was not, and affections of the bladder disappeared if the kidney and ureter were removed. In cases where the kidney was removed and the ureter not the latter subsequently had to be removed.

Success: The Surgical Desideratum.—Dr. A. ERNEST GALLANT of New York City read this paper, summarizing as fololws the factors which, in appropriate cases, helped to bring about surgical success: (1) A most careful consideration of antenatal and postnatal diseases, and the chronicity or acuteness of the present condition before deciding to operate or not to operate. (2) The liberal use of water by mouth and rectum, before, during, and after operation. The free application of tincture of green soap, rubbed into the skin until dry when preparing the field of operation and the hands of the operator and assistant. (3) Minimum morphine, before anesthesia; the ether administered by the patient herself, in the first stage; care that the head is properly elevated; and a minimum quantity of ether employed. (4) A reasonably short incision, a reasonably quick operation, and a reasonable number of sutures to close the wound. (5) After operation the careful prevention of chilling the body; the cautious use of morphine and sedatives; lavage to allay undue

vomiting; and colonic massage and kneading for relief of distressing intestinal distention. Continuous rectal irrigation for tympany. (6) For the invigoration of the tired patient, and to prevent muscular atrophy and cardiac weakness, general massage daily, with passive and active movements while in bed and calisthenics when first about. (7) For the prevention of hernia and enteroptosis or support of prolapsed organs we apply the abdominal "stock," Rose's plaster bandage or a special corset, put on while the patient is in the dorsal-inclined posture.

Dr. ROSENTHAL of Ft. Wayne, Ind., said he always made it the practice to wash out the stomach under profound anesthesia after surgical operations. The vomiting was thus lessened, there was no complaint of thirst, and the patient was more comfortable generally.

(To be continued.)

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

AT a stated meeting held April 12, Dr. H. E. RADASCH exhibited specimens of "Well-shaped Erythrocytes." Dr. W. M. L. COPLIN exhibited "Unusual Forms of Pseudonucleated Erythrocytes in the Thyroid Gland from a Case of Acute Strumitis." Dr. E. M. L'ENGLE exhibited "A Cystic Tumor of the Mesentery." The globular mass, as large as a tangerine, was removed with a portion of the bowel and was found to be a thick-walled cyst, containing matter of buttery consistency, in which were found crystals of leucin and tyrosin. Hooklets were looked for, but not discovered. In the discussion it was suggested that the cyst might be of chylous origin. Dr. G. E. PRICE exhibited microscopic sections of normal neurofibrils, also neurofibrils from a case of pernicious anemia, and neurofibrils from a case of hydrophobia. Dr. DAVID RIESMAN exhibited "Carcinomatous Tissue Passed by Bowel in a Case of Carcinoma of the Colon." The patient was a woman who had passed blood from the bowel, and in whom a tumor in the sigmoid flexure of the colon was palpable through the vagina. Operation was undertaken and the mass removed, but recurrence took place with metastasis, and the patient died eighteen months later, under most unhappy conditions. Toward the last it was necessary to administer as much as 13 grains of morphine daily. This afforded only the smallest measure of relief, and the patient took little nourishment besides. The masses passed by the bowel were as large as English walnuts. They were found to be adenocarcinomata. Dr. W. J. FUNKE read a paper entitled "Etiology of Cholelithiasis; Bacteriological Study of 102 Calculi." Bacteria were found in a considerable number of the calculi, especially in the more recent and softer ones. The formation of the stones is to be attributed to stagnation of the bile in the presence of bacteria capable of causing precipitation of the chemical constituents of the secretion. Dr. WILLIAM G. SPILLER presented a communication entitled "Muscle-fibers in a Tumor within the Spinal Dura." The patient was a man presenting weakness in the lower extremities, with increased reflexes, and loss of control of the sphincters. After death the prostate gland was found the seat of a malignant growth, with metastatis to the cerebral dura, while in the conus medullaris was found a small formation containing muscle-tissue and supposed to be a fetal inclusion or similar congenital structure. Dr. WILLIAM PEPPER presented a communication entitled "A Probable Case of Infection with the Fasciolipsis Buski." The patient was a man who had always lived in the city, and examination of whose blood disclosed the existence of a considerable eosinophilia—from 21 to 33 per cent. Careful examination of the stools disclosed the presence of ova that corresponded in their dimensions most nearly with those of the Fasciolipsis Buski, but it was not possible to discover the parent fluke in the discharges, although large doses of thymol were administered on several occasions.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending June 2, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	351	179
Diphtheria	347	57
Measles	931	38
Scarlet Fever	192	18
Smallpox	10	3
Varicella	85	1
Typhoid Fever	25	6
Whooping Cough	49	6
Cerebrospinal Meningitis	22	17
Malarial Fever	.....	.....
Totals	2,012	325

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending June 2, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	May 12–19	6	..
Colorado, General	Apr. 1–30	10	..
Florida, General	May 19–26	2	..
Illinois, Galesburg	May 19–26	1	..
Kentucky, Covington	May 19–26	1	..
Louisiana, New Orleans	May 12–19	5	1
Massachusetts, Boston	May 19–26	2	..
Quincy	May 19–26	2	..
Mississippi, Natchez	May 12–19	1	Imported.
Missouri, St Louis	May 19–26	4	..
New York, New York	May 19–26	2	..
Ohio, Cincinnati	May 18–25	10	..
Oklahoma, Oklahoma City	May 12–26	13	..
Pennsylvania, Altoona	May 19–26	1	Imported.
Lancaster	May 19–26	2	1
Pittsburg	May 12–19	2	..
Tennessee, Knoxville	May 19–26	..	1
Utah, General	Apr. 1–30	76	..
Virginia, Petersburg	May 19–26	1	..
Wisconsin, Appleton	May 19–26	4	..
Marinette	May 12–26	4	..
Milwaukee	May 19–26	1	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Apr. 14–21	5	..
Australia, Brisbane	Mar. 31–Apr. 7	1	..
Fremantle	Mar. 24–31	3	1
Perth	Mar 24–31	1	..
Austria, Freudenthal	Apr. 14–21	2	..
Gallicia	Apr. 8–14	7	..
Voralberg	Apr. 14–21	2	..
Chile, Antofagasta	Mar. 1–31	..	23
Iquque	Apr. 22–29	3	..
Gibraltar	Apr. 29–May 6	2	..
Great Britain, Bristol	May 5–12	2	..
New Castle-on-Tyne	May 5–12	2	..
Greece, Athens	May 6–13	..	1
Patras	Apr. 10–17	4	1
India, Calcutta	Apr. 13–20	..	174
Karachi	Apr. 22–29	20	15
Madras	Apr. 21–27	..	31
Rangoon	Apr. 14–21	..	41
Italy, General	May 3–10	39	..
Netherlands, The Rotterdam	May 5–19	3	..
Russia, Moscow	Apr. 21–May 5	25	8
Odessa	Apr. 29–May 12	46	6
St. Petersburg	Apr. 21–28	7	1
Spain, Barcelona	May 1–10	..	11
Seville	Apr. 1–30	..	34

YELLOW FEVER.

Mexico, Merida	May 6–12	3	2

CHOLERA.

India, Calcutta	Apr. 14–21	..	86
Rangoon	Apr. 14–21	..	1

PLAGUE—INSULAR.

Hawaii, Honolulu	May 24	..	1

PLAGUE—FOREIGN.

India, Calcutta	Apr. 14–21	..	207
Karachi	Apr. 22–29	307	246
Rangoon	Apr. 14–21	..	65
Peru, Lima	Apr. 23–30	3	1
Trujillo	Apr. 23–30	4	1
Mansefu	Apr. 23–30	1	..
Straits Settlements, Wellesley Province	Apr. 18	..	Present.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 24.
Whole No. 1858.

New York, June 16, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

NEURONS AND NEUROFIBRILS.

A BRIEF REVIEW OF THE PRESENT TEACHINGS.

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Ten years ago the "Neuron theory," *i. e.* the theory that the nervous system was made up of a collection of anatomical and genetic nerve entities or units constituted of cell, fiber and terminal ramifications, having no connection save by contiguity, was generally accepted. In 1891, Waldeyer, the Berlin anatomist, set forth the idea of the neuron based largely upon the conception of Gerlach and Deiters and upon work that had been done by means of the Golgi and Cajal methods of staining, which, as is well known, reveal particularly the outlines of nerve cells. He maintained that nerve fibers are collections of axis cylinders which emerge directly from nerve cells, that there is no relationship to a fiber network at the point of origin, and that all nerve fibers end free in terminal ramifications without anastomosis or network formation of any kind. The neuron theory seemed entirely to harmonize with the cell theory, and the application of it to the problems of neuropathology seemed to divest many of them, particularly the systemic and combined systemic diseases, of their obscurities. In short, it appeared to harmonize so well with physiological, histological, and pathological teachings that it soon became almost universally accepted. It is not our purpose to call particular attention to the wide application of the neuron theory, to clinical medicine and to psychology, nor to the fact that in some instances it has been carried to an absurd degree.

Gradually in latter years an increasing interest has developed in the histology and microchemistry of the nervous system; and with this has come from many workers in these fields a decided opposition to the neuron theory so that to-day it is in the strict sense partially or wholly rejected by many of the most trustworthy workers in the fields of neurohistology and biology. Apathy, Bethe, Nissl, and others have sought to establish that the fibrils of nerve cells form a continuous system, without beginning, without end, like the vascular system, binding one cell body with another and thus uniting the neurons between them. Without in any sense holding a brief for those who oppose the neuron theory, we propose briefly to review some of the more important evidence that now exists to show that the nervous system is not made up of a collection of units, of invariable constitution with free endings, having no connection with one another save by contiguity, and to attempt a judgment of the evidence thus reviewed.

The temporal evolution of our knowledge of the nervous system falls into periods. The work that was done from 1835 to 1885—fifty years—and the work that has been done since 1885—twenty years.

After the discovery of the nerve cells by the zoologist Ehrenberg, and the study of them by Valentin, Purkinje, Wagner, and others, it was demonstrated by Deiters that nerve cells were made up of a cell-body and prolongations, protoplasmic and axis-cylinder prolongations, unlike in structure and behavior; the former being of the same constitution as the cell split up soon after their origin and terminate not far from the cell. The latter, of much more compact structure, were directly continuous, Deiters maintained, as nerve-fibers.

When Remak depicted axis-cylinders, or, as he called them, the "primitive bundles," he described them as finely-striated structures, but not distinctly fibrillated as did Fromann in 1864. The latter depicted fine fibrillary striations in the cells of the anterior horns and in their protoplasmic prolongations, especially distinct in the latter. The opinion generally held at that time by anatomists was that axis-cylinders or "primitive bundles" were homogenous in structure and that their peripheral terminations, at least in case of muscle plates, were in ends external to or beneath the sarcolemma.

In 1859 Lionel S. Beale, Professor of Physiology and Pathology in King's College, London (whose death was recently announced), published an article in the Philosophical Transactions (1860, page 611) in which he maintained that complete nerve circuits existed, *i.e.* that there was no free ending of nerve fibers anywhere. Nerve fibers, he said, passing to a muscle, divide into a vast number of exceedingly fine pale granular fibers which ramify upon the external surface of the sarcolemma, connected with which fibers at certain intervals are oval nuclei; and these fine fibers, after an extensive, and in many cases very circuitous course, join with other fibers to form dark bordered fibers which at length pass toward the nervous center either in the same bundle as the dark bordered fibers passing toward the muscles, or in other bundles.

He prepared tissues for examination by soaking them in or injecting them with some highly refractive fluid such as simple syrup or glycerin to which a little chromic acid had been added. Beale did an enormous amount of work in support of his claims, published various articles, illustrating them with excellent drawings, and offered to demonstrate his specimens to anyone who would take the trouble to look at them. He concluded from his work upon the different tissues of the body that nerve fibers never end or terminate by free extremities, but that in all cases complete circuits exist and that the circuit is the fundamental origin of the nervous apparatus. In other words, his position was almost identical with that of those who hold to the neurofibril theory of to-day. Beale was treated

with scant courtesy by his contemporaries and apparently even that was accorded to him only because of personal friendship with some of the leading German anatomists. Kühne, Kölliker, Margó, and Engelmann all denied the accuracy of his diagrams and the reality of his descriptions, while some of the French anatomists, notably Rouget, essayed disdainfulness and superiority, saying: "It is easy to assure oneself that the description of Beale is wholly inexact and no time should be wasted upon it by the experienced and attentive observer." Time has shown that Beale was accurate to a degree that can scarcely be believed when one remembers that the only reagents that he worked with were syrup and glycerin. It is largely due to Joris, in his prize essay published by the Belgian Royal Academy of Medicine, "Nouvelles Recherches sur les Rapports Anatomiques des Neurones," that attention has been called to the remarkable work of Beale. In the hundreds of articles, monographs, and reviews that have been written on neurons and neurofibrils in the past ten years, Beale's name is not mentioned. For instance, Bethe, in the third chapter of his "Allgemeine Anatomie und Physiologie des Nervensystems," says that the fibrillary structure of the nerve cells and its prolongations received its first great impetus from Schultze. In reality Schultze confirmed the discoveries of Beale while demonstrating the existence of isolated nerve fibrils and showing that they were specific elements of the nervous tissue. His article formed a chapter in Stricker's Handbuch der Geweblehre, 1871, which, being the most popular text-book of histology in the German language, was widely read and became very generally known. On the other hand, Beale's articles were published in the *Philosophical Transactions,* a vehicle rarely encountered by German savants, it would seem, and in the *Archives of Medicine,* of which he was editor. His position as a teacher, his membership in the Royal Society, his repute as a master of microscopical technique, apparently did not help him to a serious hearing. That Beale was master of the situation, however, and that he believed firmly in his findings, can be proven to anyone who will take the trouble to read the article in the *Archives of Medicine,* Volume IV., 1863-1870, entitled "An Anatomical Controversy," in which he deals with those who sat in judgment upon him in a most masterful manner.*

There is no doubt whatsoever that Max Schultze extended Beale's ideas very materially, but Schultze had the advantage of examining cells of tissues that had been hardened in chrome salts, in iodized serum, and in osmic acid and bichromate of potash. Schultze showed that the "primitive bundles," as he called them, constituted the specific structural element of the nervous substance. He demonstrated the distinct fibrillary striations which are entirely independent and parallel both in the protoplasmic and in the axis-cylinder prolongations. He pointed out that the non-medullated fibers split up at the end so as to form a bush-like condition of the finest fibrils. In ganglion cells treated with iodized serum he was able to see the finest striations and to trace these striations through the entire cell from one side where they came in to the other side where they passed out through other prolongations. In other words, he showed to his own satisfaction that the fibrils did not originate in the body of the cell. These discoveries led him to the conclusion that the fibrils were the essential thing in the construction of the nervous system, and that ganglion cells were no more than stations for the fibrils, which stations served to make it possible for fibrils coursing in a prolongation to get into connection with many other prolongations and also with axis-cylinders. His idea was that the nerve fibers were simple fibrillary bundles, and he therefore divided them into two classes—naked fibrillary bundles and fibrillary bundles with medullary sheaths. Despite the fact that this line of investigation was pursued with much success by other investigators, and notably by Kupffer (who, by the way, Apathy states, was the real discoverer of the neurofibrils, Sitzungsber. d. Naturwissenschaft. Atlas d. Bayerisch Acad. d. Wissensch. Med., 1883, page 473), H. Schultze, Dogiel, Flemming, and many others, it was not until 1897 when Apathy made his contribution entitled "Das leitende Element des Nervensystems und seine Beziehungen zu den Zellen" (Mittheilungen der zoologischen Station, Neapel, Volume XII.), that neurofibrils began to have an important place in the literature of neurology and histology. In several communications dating back to 1883, he had pointed out the fundamental facts of his observations and conclusions, but these were published principally in the Hungarian language and were unnoticed. In the volume that appeared in 1897 the pen pictures and verbal descriptions were so distinct and comprehensive that at once the matter was given the attention which it demanded. He maintained that the neurofibril is the essential and specific constituent of the nervous system. He had studied in detail the nervous system of the leech by the aid of a method now well known which depicted the nerve fibrils with such distinctness that they could be followed from one end of the preparation to the other. These neurofibrils appeared as deep dark threads on a slightly tinged background, or, as Bethe says, like telegraph wires against a clear sky. On cross-section of sensory or motor fibers they appear as dark spots or small, somewhat spiral lines, indicative of their spiral course.

These neurofibrils were found wherever there was nerve organization, *i.e.* in nerve fibers, in ganglion cells, in sensory epithelial cells, in glandular cells, and in all these tissues they were sharply differentiated. There was no vagueness about their outline, they were well-defined, individual morphological elements and nowhere could an ending of one of the neurofibrils be found. Apathy believed the individuality of the neurofibril, the uninterrupted course, and the endlessness to be its most striking features. In end organs, such as muscle fibers, sensory epithelial cells, glandular cells, etc., the fibrils interlace so as to form networks. In ganglion cells they seem to terminate in a similar way. The majority of the fibrils which enter ganglion cells through the protoplasmic prolongations of unipolar cells or through the many prolongations of the multipolar cells, interlace in such a fashion as to form a very intricate network. A similar network formation is found in the neuropil (the nerve cell in contradistinction to the ganglion cell), here only network, the very fine network occupying the center of the cell, is made up of very many more fibrils. Conducting primitive fibrils pass into the interior of the

*In Vol. V. of the same journal will be found an unsigned article entitled "German Criticism and British Medical Science," undoubtedly from the pen of Dr. Beale, which throws an interesting side light upon the controversy: "It has been said that science is of no nationality. . . . Such dreams must be dispelled; Germany has spoken; the investigation of Nature's minutest and most delicate secrets is *her* prerogative only. Anatomical observations are made in Germany only, and it is not possible to discover any structure elsewhere. Other countries must expect and listen to the story of what she finds. To her alone belongs the right to discover! Nay, it is doubtful if light for microscopical illumination is to be obtained elsewhere."

ganglion cell, and just as many elementary fibers leave it after the "trellis" formation. Termination, dissolution in or connection with the cell nucleus the fibril does not have.

In this conception of Apathy, the neurofibrils either go toward centers and penetrate ganglion cells, or they go toward the periphery and ramify around muscle cells and penetrate sensory or secretory cells. In invertebrates Apathy demonstrated motor fibers which extend from the cell to the muscle to which they go, and sensory fibers very much thinner than the motor which pass into the "elementary trellis" and from there into the cell. Apathy divides the cells of the nervous system into two distinct classes—nerve cells and ganglion cells. The former are analogous to muscle cells; they produce the material that conducts, *i. e.* the material that produces fibrils.

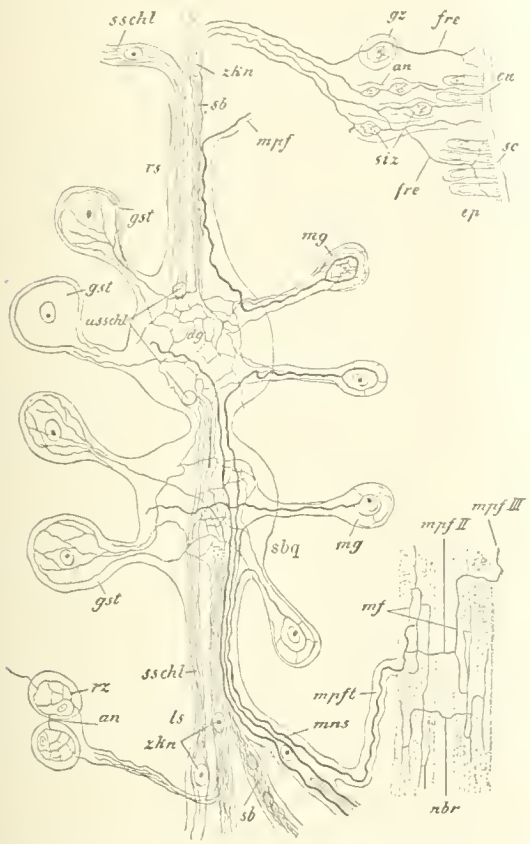

Fig. 1.—Apathy's Schema of course and communication of the conducting pathway in cross-section of a cornite of Hirudo. The two ganglion valves with motor *mg*, and sensory or merely connecting *gst* ganglion cells. The three kinds of nerve spindles or nerve fibers *sb*, *sschl*, *mns*, their arrangement in the center, distribution in the central mass of fibers and connections with the ganglion cells; their arrangement at the periphery: muscle fibers, epidermal and subepidermal sensory cells with their terminal branching in its epidermis (*fre*), *usschl* where a sensory tube *sbq*, where a sensory bundle curves into the central mass of fibers in a longitudinal direction, *mbe* conducting bridges between muscle fibers. We see from the upper right the perceptive sensory surface, the centripetal conducting febril path, which enters into the elementary gutter and thence in the ganglion cell and its mesh work. Thicker fibers which later become united in bundles as the motor nerves pass from the motor ganglion cells to muscle (lower right) and branch in the manner already described.—(From Hartmann, "*Die Neurofibrillenlehre.*")

The ganglion cells are interpolated in conductive paths like cells in an electric circuit; they produce that which is to be conducted. In ganglia these ganglion cells are arranged around the periphery and are of two kinds, large and small. Neurofibrils entering the large cells form at once an intramedullary network and from this network new fibrils detach themselves and go out through the same prolongation. Thus a prolongation conducts in two directions. Primitive fibrils may pass through a number of ganglion cells before they enter into the formation of networks. In the prolongation of the small cells there is to be found an individual fiber which is characterized by its considerable volume; this is the motor fiber. All fibrils coming out from ganglion cells enter the formation of a common network occupying the center of the ganglion. This common network is the "elementar gitter" of Apathy, or, as it may be translated, elementary trellis or screen. In some instances fibrils come directly from the cell without passing through this central network.

At the periphery of the body there is a very similar disposition of the nervous element. The neurofibril forms in the secretory cell an intracellular network, the branches of which, leaving the cell, anastomose with fibrils coming from neighboring cells to form intercellular networks.

In 1896 the teachings of Apathy were accepted by Bethe, who confirmed his findings in invertebrates by the use of other methods of investigation. Extending Apathy's conception, Bethe attempted to show that in the phylogenetic development of animal life, so-called plasmatic nerve-nets constitute the lowest method of connection of nerve cells. The fibrils of these plasmatic networks form only the intercellular trellis which constitutes the direct connection between the peripheral sensorium and the muscles. In the nervous system of all higher animals there occurs somewhere a mixture of the fibrils coming anywhere from the surface which make up the fibril trellises, and, according to Bethe, it is the position of this trellis which constitutes the difference between the different forms.

As we ascend in the scale of the vertebrates we find that the fibril gets more and more outside the cell, until finally it gets entirely out between the cells, so that, according to Bethe's view, within

Fig. 2.—Large multipolar cell from the reticular formation of the medulla of a rabbit (Cajal method).

cells fibrils merely pass through, having no more intimate relation than that caused by such passing. Either the fibril trellises remain near each other and have long pathways to receptory and effectory organs, or long pathways form between remote fibril trellises. Recent work done according to the methods of Cajal and Bielchowsky seems to corroborate in general Bethe's opinions, but it is difficult to obtain reliable information of the fibrils in central cells with these methods. Apathy maintains that there is an intercellular trellis formation in vertebrates. Hartmann (Die Neurofibrillenlehre, Braumüller,

Vienna and Leipsig, 1905) is inclined to accept this inasmuch as his preparations showed that a part of the fibrils which pass into many ganglion cells have a trellis formation which, in the large pyramidal cells, for example, lies near the basal part of the cell; in the smaller cells this takes up nearly the entire cell.

In addition, fibrils in variable numbers go from dendrite to dendrite and from axis-cylinder to dendrite through the cell without perceptible relation one to another.

Ansalone has pointed out (Contributo allo studio delle Neurofibrille nella midolla spinale dei vertebrati superiori, *Annali di Neurologia,* Ann. XXII., fasc. 3, 1904) that the neurofibrils of the cells in the spinal cord vary in appearance according to the region of the cell which is under inspection. The prolongations also present very variable pictures. In the peripheral portion of the cell there is no network in the proper sense of the term, the neurofibrils running in shape of thick cords from one pole of the cell to the other, without dividing or anastomosing. The cellular element is not at all differentiated from the surrounding tissue; and it stands in connection with fine fibrils which reach it in a direction nearly perpendicular to that of the neurofibrils. In the deeper regions of the cell the neurofibrils form a network, the communications of which with the nucleus vary according to the section plane of the cell. The fibrillary network may either cover the nucleus completely, presenting a greater condensation and a finer quality of work mesh at this level, or it may pass over it like a bridge in the form of more delicate threads. Again, it may be strictly limited to the nuclear outlines where it terminates.

Schaffer, who has recently published a paper on the subject (Recherches sur la structure dite fibrillaire de la cellule nerveuse, *Revue Neurologique,* No. 21, 1905) comes to somewhat different conclusions. The author investigated the finer fibrillary structure of the nerve cells in the spinal cord, the oblongata, and the pyramidal cells of the cortex and concluded that there are two systems of reticular structures in the nerve cells; first, a pericellular external network with thicker meshes at the periphery of the cell-body and in the protoplasmic processes, which is identical with Golgi's net; the beams of this network which represent a sort of cortical substance of the cell, form the meshwork of the cell process also, which become more plainly outlined in the presence of swelling from the general parallel arrangement of the fibrils. All the fibrils of the cell-body as well as the processes anastomose with each other and the fibrillary cellular structure is therefore really a pseudofibrillary structure of a reticular character, although presenting a parallel striped appearance in certain localities. Another net is formed by fine fibrils, which form a polygonal wide meshwork, by branching off from the crossbeams of the first net towards the interior. This internal reticular system appears denser around the nucleus; it also sends its prolongations into the protoplasmic processes. The internal and the external intracellular network stand in close connection with each other. The author finally observed extracellular fibrils which approach the cell-body in a Y-shaped oblique direction, or parallel to the pericellular network, blending with the cell-body. This Y-shaped branching of the fibrils he also considers with Bethe as sufficient proof of the existence of an endocellular network. Altogether, it does not seem to us that his evidence is sufficiently strong to support his claims, even though the evidence offered by others and that which we ourselves have seen would tend to support the view of independence of the axone fibrils from those in the dendrites.

Donnagio, working with an original method (Anatomia e fisiologia delle vie di conduzione endocellulari Atti del XII Congresso della Società freniatrica, Ital. in *Riv. sperim. di Fren.,* Volume 31, *T.* 1, 1905), concludes that "the existence of a network of fibrils in the ganglion cell, besides long fibrils which traverse the cell chiefly at the periphery, must be accepted as conclusively proven. It still remains doubtful whether or not these long fibrils anastomose with each other." Acording to structure, two types of ganglion cells may be distinguished: Cells containing only a network of fibers, and cells containing long fibrils in addition to a network. The axis-cylinder receives fibrils from the network principally.

Bethe also found by his method that ganglion cells of vertebrates are surrounded by close-meshed netform trellis which he calls the Golgi nets and which he believes is of nervous nature.

He has framed an hypothesis concerning the transmission of the nervous current from this network to the cell and to the dendrites. The dendrites, *i. e.* the protoplasmic processes, of the cells end blind. Probably the fibrils pass into Golgi nets and unite with the fibrils which proceed from the splitting up of the centripetal nerve fibrils to form network formations as in invertebrates.

Nissl agrees that the Golgi net is a new and important structural element of the nervous system, but he does not believe that the neurofibrils go out from the protoplasmic prolongations unchanged into the terminal endings of the centripetal medullated fibers. This Golgi network Bethe finds at the surface of all the cells of the central nervous system. In the cerebrum, cerebellum, Ammon's horn, and in the gelatinous substance it extends diffusely. In other regions such as the motor nuclei, the dentate nucleus, the olives, etc., it confines itself to the surface of the cell, but where two cells or two dendrites touch the Golgi network reaches from one directly to the other. It is limited to the gray matter. It does not seem to have any relationship to the vessels, the neuroglia, or the pia. But the nervous nature of this Golgi network, unfortunately for Bethe's theory, has not been proven. Cajal, Lugaro, Donnagio, Marinesco, and others maintain that this network represents nothing else than artificial coagulations of certain albuminoid substances in the interior of vessels. Nissl changes Bethe's hypothesis so that the neurofibrils of the cell border and in the terminal ramifications undergo a change which permits their colorability, a condition previously impossible. (See Fig. 2.)

Bethe's conclusion is that the nerve fibril is a multicellular formation in which the ganglion cells and the end organs are united by neurofibrils, the ganglion cells themselves being of slight functional value. The neurofibrils are the essential specific constituent of the nerves and they are the nerve substance in general. Engelmann's opinion that the axis-cylinder section of medullary substance and the nucleus of Schwann, situated between two nodes of Ranvier may be looked upon as a cell, it has been thought, has received corroboration from Bethe, who found, he maintains, that at Ranvier's nodes the fibrils alone pass through a sieve-like membrane. This, he thinks, fortifies the opinion that these constitute the confines of the cell. Retzius insists that at the above-mentioned places not only the neurofibrils but also the perifibrillary substance is seen to pass through, that the number of the neurofibrils

and also the perifibrillary substance is decreased; therefore a rarefaction of the entire substance of the axis-cylinder takes place at the nodes of Ranvier.

Nissl maintains that the complex called a neuron is not the sole nerve element. There are cellular elements which do not have their origin from ganglion cells, and there is a specific tissue of as yet unknown texture lying outside the cells, the so-called "nervous gray." This substance is of a fibrillary nature. According to him, dendrites as well as axis-cylinders terminate blind in this gray substance. Therefore, something must exist which is interpolated between the end of the axis-cylinder which is synonymous with the cessation of the medullary sheaths, and the Golgi nets and the nerve cells situated in the vicinity of the axis-cylinder termination. This is the nervous gray. He has never been able to demonstrate it, but he has attempted to show mathematically that this nervous substance must exist. He says that if the demonstrable cortical elements are added together a large portion of space remains unoccupied, but the work of Bielchowsky and Wolff on the cerebellum by the use of the former's silver method which impregnates neurofibrils and plasma with a remarkable clearness and which demonstrates the continuous transition of axis-cylinder fibrils and closely united peri- and intracellular nets, would tend to upset this.

The relationship existing between cell fibrils and axis-cylinder fibrils is still a matter that requires very great elucidation. Held and Wolff maintain that they have seen fibrils leave the terminations of the axis-cylinders and enter the body of ganglion cells, by means of Cajal's method and Bielchowsky's method respectively. Mahaim studied the nervous system of the cat, the crow, and the human subject, by the various Cajal methods. He did not in a single instance observe fibrils penetrating into the cell body. He is of the opinion that Wolff's reticulum is the result of faulty technique; this is not, however, true, for the relatively thick fibers which Held saw penetrating the cell. The author believes that this is an anatomical "semblance," for the experimental methods show by chromatolysis the marked difference existing between sections of axis-cylinders arising from a cellular nucleus, and sections of axis-cylinders penetrating into a nucleus. The relation between the pericellular terminations and the body of the cells cannot, therefore, be very intimate; and it may be stated that these terminations "are not a part of the cells." The author hopes that it will prove possible by means of appropriate experimental methods to observe degenerated pericellular masses surrounding an intact cellular body.

Bartels, studying the fibrillary structure of the ganglion cell layer of the retina by means of Bielchowsky's fibril method, maintains that he has succeeded in demonstrating the presence of fibrils which pass from a protoplasmic process through the cell and into the axis-cylinder process. He also observed other fibrils passing from one dendrite into the other, without traversing the cellular body itself. Finally fibrils were noted connecting the processes of different cells. On the other hand, Vermes (Ueber die Neurofibrillen der Retina, *Anat. Ang.*, Volume 26, Helft 22-23, 1905), who studied the retina of the horse, dog, rabbit, cat, guinea-pig, and also of the human subject by means of the Cajal and Bielchowsky fibrillary methods does not consider that the continuity of the neurofibrillary layer has been demonstrated. Ramon y Cajal (Trabajos del Laborator de investigacion biol. de la Universidad de Madrid, III., 4, dic. 1904) shows that the differentiation of the fibrils in the cells of the retina begin within the plasma zone from which the dendrites arise, and they begin with the beginning of function; they are begotten by function from the cell protoplasm.

The field in which the question of contact or continuity has been most hotly contested, however, is that of the terminal arborizations of axone at fibrils about the cells.

The recent investigations of Cajal, Bielchowsky, Holmgren, Michotte, and others, show that the neurofibrils appearing on the surface of the cell come in contact with it by means of bulbous formations known as the terminal buttons. Bielchowsky, Held, and Holmgren believe that the terminal buttons are fibril net-like structures and that the fibrils of the buttons pass into the interior of the cells. But the terminal buttons are in intimate relationship on the surface of the cell through anastomosing fibrils which form a close network. Bielchowsky holds that this formation is identical to that which Held calls the pericellular Golgi nets.

Cajal divides the terminal buttons, or terminal masses, as he calls them, which were discovered by

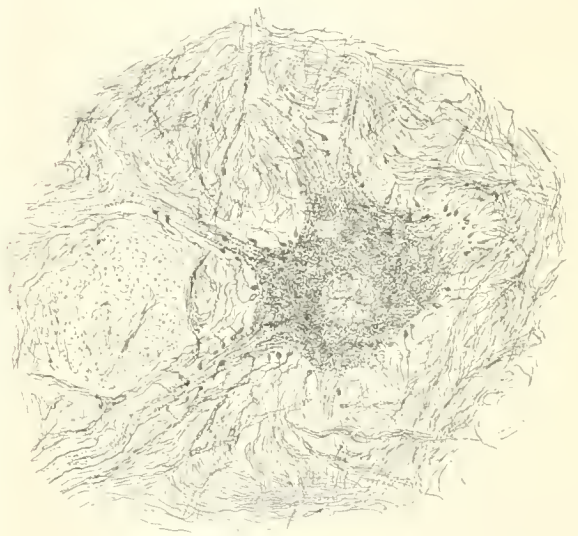

Fig. 3.—Multipolar cell with terminal buttons (Cajal method).

means of his method into two forms, the end club and the transition club. The former come from the vicinity of the cell in form of a fine thread which swells up as soon as it reaches the cell body and closely hugs the cell membrane or the dendrite with its basis. The transition form are fusiform thickenings of certain fibrils, which also become applied to the cell membrane. The end-clubs are found in large numbers at the cell body, sometimes giving it a mottled aspect like a tiger skin. They are never absent at the dendrites. Only isolated end-clubs occur at the root cone of the axis-cylinder. Van Gehuchten and Marinesco have corroborated (Boutons terminaux et reseau pericellulaire, *Le Nevraxe*, Volume VI.) these observations of Cajal's.

In specimens prepared according to Cajal's method, these end-clubs were observed to be independent of each other as well as of the cell. Cajal's method being an elective nerve fibril method, the pericellular nets, if they exist at all, can only consist of protoplasmic substance.

Held (Zur weiteren Kenntniss der Nerven-endfüsse und zur Structur der Senzellen, Abh. der K. Sächs. Ges. d. Wiss. Mat. Phys. LI. No. 2, Volume 29, 1903-1904) found nets in the ganglion cells by

means of Cajal's method. He disagrees with Cajal concerning the connection of the so-called terminal feet or buttons, and shows by photographs of his preparations that the terminal buttons are connected in continuity with the protoplasmic substance of the cell body; and that the fibrillary net which exists in the terminal button communicates with that of the cell. Hence the terminal buttons really constitute connecting links between locally remote ganglion cells of the central nervous system, in the longer or shorter path of their axis-cylinder processes. But, as we have said above, Held's views in this matter have not been accepted, neither have they been corroborated by acceptable investigators.

Fig. 3 shows fairly well the formation of these terminal buttons as they appear in Cajal preparations. No single plane, however, such as the drawing must necessarily represent, can give an adequate idea of the enormous number which literally cover the cell and dendrites. This and other preparations which we have carefully studied, seem to bear out Cajal's views very forcibly, in as far as we have been quite unable to demonstrate fibrils passing from the end feet into the interior of the cell. Even successful Bielchowsky preparations, or the illustrations of Wolff, do not establish the continuity question firmly enough in our estimation to make their position sure. One should not forget that we are dealing with very minute structures only to be seen with very high magnification, and there is such a dense network of similar structures that it becomes quite impossible to determine absolutely their ultimate destruction.

The more important communications that have appeared during the past few years on the subject of the disposition of the neurofibrils of the periphery of the body must now be briefly reviewed.

Ruffini (Ultraterminal Neurofibrils in Human Motor Endplates. *Rivista di Pathologia nervosa e mentale*. Firenze, October, 1900. Vol. V., Fac. X) states that he reexamined his old gold-chloride specimens of human motor endplates with the result that certain details were discovered, which lead him to believe that in man as well as in lower animals a closed system of anastomoses may originate from the motor ramifications (as discovered by Apathy in Hirudinea). It is quite possible, he believes, that sensory nerve fibrils enter also in connection with this anastomotic system. Ruffini noticed that extremely fine fibrils, of variable length supplied with small "varicosities" sometimes originate from the endplates. These "ultraterminal fibers" seem to terminate after a longer or shorter course within the same muscle-fiber, or more commonly in an adjacent muscle-fiber, either with a varicosity or without one. Occasionally the fibril terminates in a small secondary endplate, from which another thin fibril may take its origin. This goes to show that in man the so-called "motor endplates" are not the real termination of the motor nerve fibers; since other fine fibrils arise from them, the fate of which cannot be definitely determined.

Apathy, in discussing this communication limits himself to some very general theoretical considerations upon the importance of this fact as an argument against the neuron theory. He says that Ruffini's preparations afford proof that nerves do not terminate (or at least, do not invariably terminate—he, for his part, believing that they *never* do) in the endplates of the muscle; just as in the Hirudinea they do not terminate in the "terminal crests" described by him and which correspond exactly to the motor-plates of vertebrates. In vertebrates also, and in a very superior vertebrate at that—exceedingly fine nerve paths emerge from the terminal plate, passing in various directions through the muscle-fiber, branching and entering into adjacent muscle-fibers, just as they behave in the Hirudinea.

If it is permissible to judge from experiments made upon animals of such "inferiority," Apathy continues, his observations lead him to predicate the probable ulterior fate of the ultraterminal branches in the following fashion: In part they may pass through some neighboring muscle fibers—in their way as yet unseen—and in part they branch immediately in the interstitial substance between the muscle-fibers, becoming isolated elementary fibrils. These elementary fibrils then pass to the elementary peripheral net which spreads its large and uneven meshes in the interstitial substance between the muscle fibers. But the elementary net receives in its turn other elementary fibrils which come both from other motor plates, and from nonmotor nerves, from the nerves of general nonspecialized sensation (here perhaps from the nerves of muscular sense). It is another question, which nerves, in vertebrates, are those nerves of general sensation. In the Hirudinea, Apathy was recently able to recognize those nerves in a special type of nerves described by him in 1897, and designated as "sensory tubes."

Dogiel (Der fibrilläre Bau der Nerven End-Apparate in der Haut des Menschen, und der Säugethiere; und die Neuronen-Theorie. *Anat. Anz.* Vol. 27, Nos. 4-5, 1905) describes the termination of neurofibrils in tactile disks, the typical and modified Vater-Pacini corpuscles, the typical and modified Meissner corpuscles, and the papillary bundles of Ruffini, with the assistance of specimens obtained by means of Cajal's neurofibril method from the human skin and from the skin and mesentery of the cat. He concludes that all sensory end-ramifications consist of more or less small-meshed and completely closed nets of neurofibrils, which are placed in a larger or smaller mass of perifibrillary substance. The shape alone varies in the individual end-apparatus; round, sometimes curved, small disks of variable diameter (tactile disks, Grandry's corpuscles, swellings at the axis-cylinder ramifications of the typical and modified Meissner corpuscles), angular scales (human skin, tree-like terminations of sensory nerves of the cutis, mucous and serous membranes, intermuscular connective tissue, tendon); fusiform, club-shaped, round or oval, sometimes flattened, formations (Herbst corpuscles, typical and modified Vater-Pacini corpuscles). The neurofibril nets are either in direct contact with their surroundings (connective tissue, fibril bundles), or with special cells (tactile disks) or they have a special sheath. The most marked difference lies in the number of neurofibrils constituting the aggregate of all nets together, in which terminate the processes of a sensory cell, not in the shape of the terminal apparatus. These either reunite by means of individual neurofibrils, or by means of twigs consisting of several neurofibrils; all, together, or a certain portion, forming other end-nets in such a way that the individual terminal apparatus seems to be connected with its fellow (tactile disks, Grandry's corpuscles, leaf-shaped terminations, tree-like ramifications). All the neurofibrils of a peripheral process stand in direct communication with the intracellular net; the perifibrillary substance continues to the process, together with all its terminal nets, where it reaches the maximum amount, as that portion of the cell body which is not differentiated into fibrils. The central process differs in no impor-

tant feature from the behavior of the peripheral process; the small, club-shaped thickenings, with which the terminal ramifications rest upon the motor cells and their dendrites likewise consist of closed nets of this character. The neurofibrils do not, however, enter into organic connection with the intracellular net or the undifferentiated protoplasm; simply resting immediately upon the cell. Each sensory cell represents a neuron, which communicates neither with other cells of the central nervous system, nor with other units. The neurofibrils belonging to a neuron, form at least three, closed and firmly united nets: the intracellular, the peripheral, and the central net. Cell colonies exist beyond a doubt in the central nervous system, meaning that cells of the same type unite by means of their dendrite ramifications. According to their function the closed terminal nets rest either upon the body, or the dendrites, of another colony, or of an individual neuron, or upon non-nervous elements (muscle cells).

In contradistinction to the Apathy-Bethe neurofibril theory, the author points out that the neurofibrils are to be interpreted simply as products of the differentiation of the nerve-cell protoplasm, and that they serve to build all the terminal apparatus and ramifications, assisted by a portion of the non-differentiated plasm, the perifibrillary substance. The different psychomotor and psychosensory functions belong not only to the neurofibrils, but also to the nerve cell, and all its parts. It is not at present possible to pronounce upon the function and importance of the neurofibrils.

Klomer, working on the crista of the mouse ("Zur Kenntniss des Verhaltens der Neurofibrillen an der Peripherie," *Anat. Anz.*, Nos. 16-17, Vol. 27, 1905), says the fibrils are seen to approach the cells, entering to a moderate degree into plexus-like ramifications. They then penetrate into the cell at the lower pole, and diverge in shape of a ball, sometimes dividing into branches. The interior of the cell presents a trellis of narrow meshes, which is especially dense directly toward the base of the nucleus. Imperfect staining with methylene blue and Golgi results in the picture of the so-called terminal calices. The fibrils are seen to traverse the cells of the spinal ganglion with a distinct trellis formation, after which they pass to the habenula perforata. Especially in embryos (rodents and mice), nuclei may be seen very plainly enclosed by very fine neurofibrils. At their egress from the habenula the fibrils diverge at blunt angles. From this point on, fibrils begin to pass in a spiral, rarely in a radiating direction, to the basis of the innermost cells. The others pass in regular flexions of approximately a right angle toward the three outer spiral fiber columns, in such a manner that the fibrils which pass to the first column present one flexion, those passing to the second two, and those passing to the third three flexions. From the fibrous strands the fibers run upward in a curve to the bases of the outermost cells, and enter the cell, forming a very fine trelliswork in the basal portion especially. Free nerve terminations could not be made out at all. The author points out that the behavior of the nerves varies surprisingly in the crista and macula of different animals. The neurofibrils in the Pacinian body are rather numerous, the perifibrillary substance staining deeply and forming a distinct plate at the peripheral end, under which lies a small trellis of neurofibrils with distinct meshed formation. Concerning the effectory terminations, the author assumes a similar structure, supporting his views by the description and illustration of motor endplates and the intracellular ends of the glandular nerves from the skin of amphibia. The author was unable to discover special terminations in the myocardium, the fibrils invariably returning to form strands of parallel fibers, however fine they may have grown before. Neurofibrils do not occur anywhere without being accompanied by their matrix, the perifibrillary substance, which may be either the protoplasm of a nerve cell, of a receptory or effectory cell. Both plasma and fibrils are capable of conducting, perhaps to a different degree, just as special contractile fibrils still occur in contractile protist plasm.

Schiefferdecker (Nerven und Muskelfibrillen, das Neuron, und der Zusammenhang der Neuronen, *Sitzungsbericht der Niederrheinischen Ges. für Natur-Heilkunde*, Bonn, December 12, 1904) observed that not only do the fibrils increase in size during the contraction of a muscle fiber, but also the strips of sarcoplasm between them, the latter contracting more strongly than the former. Accordingly the sarcoplasm can no longer be considered as an indifferent substance in the muscle fiber. The conditions existing in the muscle fiber resemble those of the nerve fiber and nerve cell. Here neither the fibrils nor the plasm serve independently for conduction; but the entire nervous activity is to be interpreted as a chemical or chemicophysical process, resulting from a mutual action of the plasm upon the fibrillary substance. The chemical interaction increases in direct ratio to the surface of the fibrils. Accordingly, the intensity of the process constantly decreases from the cell-body toward the nerve termination. The author suggests a number of new terms. The indifferent protoplasm "becomes myoplasm" as soon as the cell is plainly recognizable as muscle cell, and it gradually matures into "sarcoplasm" with the formation of fibrils. In a corresponding fashion it is permissible to speak of successive "protoplasm," "neuroplasm," and "myoplasm," in the evolution of nerve cells. To the axoplasm and the axofibrils of the axis-cylinder correspond the teloplasm, and the telofibrils in the nerve termination.

The alterations of the neurofibrils caused by experiments and by disease has latterly been studied a great deal. Marinesco (*Revue Neurologique*, p. 5, 1905) studied by Cajal's fibril method the cells of the twelfth nuclei after cutting the nerve, and noted during the first stages of reaction and reparation disappearance of the fibril network, the fibrils arranging themselves in bundles or in streaks. Later the net makes its reappearance centrally around the nucleus, with simultaneous thickening of the fibrils (increase of the reduction capacity of the fibrils). Marinesco saw similar pictures in the spinal ganglion cells after section of the sciatic in rabbits, only in this case the changes occurred earlier and disappeared later.

According to Cajal, in the hungry, resting hirudo and in resting animals while digesting, the fibril apparatus is very thick. The fibrils are thin when one warms the animals and immediately after they eat. If the animal starves the fibrils are destroyed and in part reabsorbed.

Tello (Trabajos del Laborator de investigacion *Biol. de la Universidad de Madrid*, III, 2-3, p. 113, 1904) says that in the lizard, during its winter sleep, the disposition and the number of fibrils are very unlike those in the lizard during its activity.

In the hibernating adder and the lizard, the fibrils in the cell are enormously thick. They stretch themselves out in the spring to extraordinary fine threads, and all transitional states may be seen in one cell. One never fails to see in these animals the passage

of fibrils out from the cells; they go only in the dendrites and the axis-cylinders.

It would seem that in these lower vertebrates, as in Hirudinea, the perinuclear fibril apparatus is the most mighty.

Ramon y Cajal ("Variations Morphologiques du Reticulum Neurofibrillaire dans certains Etats Narmaux et Pathologiques," *Comp. rend. de la Soc. de Biol.*, LVI, 8, p. 372, 1904) shows that the fibrils do not all behave in the same way. The ganglion cells in the cord of the hibernating lizard show definite changes in the neurofibrils when exposed to heat. They become finer, more abundant and lose their bundle formation. The terminal buttons remain unchanged.

The condition of the neurofibrils in the brains of cases of general paresis have been studied considerably. Jansky ("Neurofibrils Under Normal and Pathological Conditions," *Casopais lék.*, 1905) shows that the structure of the neurofibrils is definitely altered in progressive paralysis. The findings consisted in hypertrophy, varicosity, granular transformation, and refraction of the fibrils, more especially in the smaller ganglion cells. Nothing of special interest could be made out in a case of senile dementia; while in another case of catatonic dementia præcox of several years' duration the histological examination yielded the following results only: A distinct, diffuse chromatolysis seen by the Nissl stain, the silver impregnation showing apparently normal conditions. The same striking difference was observed in another case of dementia, in which also a marked chromarolytic change in the cells accompanied an unaltered structure of the fibrils. Advanced alterations with breaking down of the chromatic substance are thus seen to be in no way dependent upon destructive disturbances of the fibrils, or to determine the latter, since the two histological elements stand in no demonstrable relationship to each other.

Jansky's findings are not in harmony with those of Dagonet (La persistance des neurofibrilles dans la paralysie générale, *Comp. rend. de la Soc. de Biol.*, Vol. 57, 1904). He examined the brains of three patients who had died of general paralysis, using the Ramon y Cajal method. Portions of the cortex taken were from different regions (parietal lobe, central and third frontal convolutions, anterior portion of the third frontal lobe, occipital lobe, cerebellum, vermis, oblongata, and cord). The extracellular fibrils were found to be universally preserved in all portions, including those in which the brain substance presented marked changes, the fibrils being normal in character. The intracellular or secondary fibrils could also be plainly seen and demonstrated. In the most marked atrophic cells the fibrils formed undulating bundles around granular masses. There was no granulation or pigmentation of the fibrils. The fibrils of the Purkinje cells and cord cells were equally well preserved.

On the other hand, Marchand (Lésions des Neurofibrilles des cellules pyramidales dans quelques maladies mentales, *Comp. Rend. de la Soc. de Biol.*, Vol. 57, 1904) has found very distinct alterations. The neurofibrils were examined according to the Ramon y Cajal method, in the pyramidal cells in the left ascending frontal convolution, central portion, and also of the second left frontal convolution, central portion, in the following diseases: Paralytic dementia (two cases), senile dementia, dementia præcox, idiocy, acute delirium, insanity, and paranoia (one case).

In the third case of progressive paralysis the lesions of the neurofibrils were most marked in the cells lying close to the meninges. Around the nucleus the neurofibrils were seen to disappear. A rather diffuse but distinct alteration of the fibrils around the perinuclear zone, consisting in atrophy of the protoplasmic processes, with disappearance of the fibrils, was observed in senile dementia. The lesions of dementia præcox were less extensive, presenting numerous pyramidal cells with normal fibrils side by side with cells whose fibrils were partially destroyed. In idiocy and microcephalus the cells were observed to contain many fibrils, but were small and had few protoplasmic processes. The lesions of insanity and acute delirium were rather similar; an irregular atrophy of the primitive fibrils, beginning around the perinuclear zone and spreading irregularly toward the sides. The amount of fibrils was found to be normal in paranoia.

Ballet and Laignel-Lavastine (*Revue Neurologique*, 1904) have likewise observed certain modifications of the neurofibrils in the cortical nerve cells of a patient having general paralysis, which were not found in the cortical cells of three patients who had died of pulmonary tuberculosis. The modifications of neurofibrils which might be expected *a priori* in general paralysis are not visible in all the cells. Like Marinesco, they noted the marked contrast between the fragmentation, granular transformation, and rarefaction of the fibrils of the medium and small pyramidal cells on the one hand, and the integrity of similar fibrils of the large pyramidal cells on the other hand. In most of the small and medium pyramidal cells the more or less clear perinuclear region is devoid of fibrils. At the base of the prolongations the fibrils are often torn asunder, wavy, or reduced to black points—some of which seem to be rods as the microscope is being adjusted. These configurations are found in a few large pyramidal cells also. Generally, however, only a rarefaction of the fibrils in the vicinity of the nucleus is visible.

Finally, it was demonstrated that in control brains the fibrillary network surrounding each cell is much richer and denser than in the brain of a general paralytic. From this point of view it is necessary to guard against error by comparing sections of exactly the same tint only, since silver impregnation increases in intensity as fields lying closer to the margins are examined.

Marinesco (Lesions of the neurofibrils in certain pathological conditions, *Comp. Rend. de la Soc. de Biol.*, 1905) believes the majority of those pathological conditions in which the chromatophil substance of the ganglion cells is markedly altered, likewise present corresponding lesions of the neurofibrils. The author was able to demonstrate such lesions in acute myelitis, purulent meningitis, foci of softening and atrophic convolutions; the neurofibrils showing variations differing in degree, imperfect staining capacity, diminution in size, complete atrophy, granular degeneration, or thickening and disintegration. In hemiplegia and paraplegia the pyramidal cells present secondary changes analogous to those following division of the axis-cylinder in peripheral nerves. Where the disease runs a rapid course, the neurofibrils likewise undergo rapid alteration. The primary seat of the lesion is also of importance, the neurofibrils rapidly degenerating and entirely disappearing in subcortical lesions and in lesions of the internal capsule. The first neurofibrils to be involved are those in the vicinity of the nucleus; the neurofibrils of the processes following in grave lesions only.

Parhon and Papinian (Note sur l'altération des neurofibrilles, etc., *Comp. Rend. de la Soc. de Biol.*, 1905). The neurofibrils of the ganglion cells of the

brain were found to be more or less altered in patients having pellagra with marked cerebrospinal symptoms. As a rule the neurofibrils of the small ganglion cells presented slight changes only, while they were almost entirely absent in large cells, such as the pyramidal cells. The nucleus also was markedly altered in the large pyramidal cells. The cervical portion of the cord was more seriously affected than the lower portions, and the root cells worse than the cells of the columns. The anterior horn cells were most deeply involved, presenting alterations resembling those of the pyramidal cells in the zone of Rolando.

Gentes et Bellot (Altérations des neurofibrilles des cellules pyramidales de l'écorce cérébrals dans l'hemiplégie, *Comp. Rend. de la Soc. de Biol.,* 1905) state that in cases of hemiplegia, where the pyramidal tract has been destroyed by the hemorrhage, a number of normal pyramidal cells are found side by side with cells whose fibrils are diminished in number, thickened, fragmented at the periphery, or entirely destroyed, especially in the central portion of the cell. No alteration was observed in a case where there was only a compression of the pyramidal tract.

Wimmer (Investigations concerning the neurofibrils in the cerebral cortex in pathological conditions, *Hospitalstidende,* No. 30, 1905) examined cases of general paralysis, delirium tremens, senile dementia, idiocy, and also one case of chronic trional intoxication by means of the Ramon y Cajal method, with Bokay's modification. In all these cases he observed a more or less marked degeneration of the fibrils in the pyramidal cells, especially in the small and medium-sized cells. A form of degeneration characteristic of each individual disease could not be demonstrated.

Bielchowsky and Brodmann (*Journal of Psychology and Neurology,* V, 1905, p. 173), in discussing the changes in the fibrils in pathological conditions, say that the scanty histopathological examinations chiefly consider the qualitative alterations in individual cells only. These procedures, however, are capable also of furnishing reliable data for the quantitative defects caused by pathological processes, and moreover they afford a view of the nervous fiber belt situated between the cells. The authors' findings were obtained exclusively by means of the Bielchowsky method. For the purpose of obtaining control specimens they began by examining definite areas of three normal brains, followed by the examination of exactly the same convolutions in seven pathological cases of an absolutely typical clinical course (dementia paralytica, dementia senilis, and idiocy). The results of their observations are proof positive of the reliability of the Bielchowsky method, the authors attaching special importance to the following points:

1. With reference to the normal histology of the cerebral cortex, the silver image is capable of completing and improving the customary parenchyma methods in various ways. The entire cortical structure appears much better differentiated in regard to the formation of fibers as well as of cells. (*a*) The nervous fiber-felt is much denser in the outer cortical layers, notably the first, second, and third layers, than in the medullary sheath specimen. Besides the medullated fibers, exceedingly numerous nonmedullated elements, especially in ramifying protoplasmic processes of the ganglion cells, participate in its formation. (*b*) The shape of the cells is very manifold, on account of the large number and great extent of the dendrites which are represented. The Bielchowsky method permits the differentiation of new types of cells, and based upon this, a finer differentiation of the layers in various segments of the convolutions. (*c*) The fibrillary structure of the cells permits the division of cell types hitherto considered as homologous, for instance, various forms of giant pyramidal cells (d). The last-named properties result in a greater variability of the cortical arrangement in general within individual layers as well as entire cortical areas.

2. For the pathological histology of organic psychoses, the fibril preparation furnishes results applicable in the uniform valuation of all nervous components. Pathognomonic characteristics of individual elements of the cortical parenchyma cannot be recognized in the fibrillary picture.

(*a*) As the principal characteristic of progressive paralysis, the parenchyma presents remarkably profound alterations in all the cells even to the disappearance of entire cellular layers with relatively fair preservation of the fibrous constituents. This circumstance is important for the functional valuation of the cell, the significance of which has of late been underrated.

The cell of general paresis is generally characterized by the early and extensive destruction of the processes and by the resolution of the fibrils, with temporary persistence of individual fibers in the body of the cell. The fibrous felt is markedly thinned out, especially in the finest elements.

(*b*) In senile dementia, in contradistinction to general paralysis, the outer shape of the cell with its dendrites is well preserved, as are likewise the cortical layers. The cellular structure is characterized by enlargement and bunching of the fibrils. The intercellular loss of fibers is less pronounced and affects coarser and finer constituents more uniformly than in general paralysis.

(*c*) In idiocy the shrunken convolutions presented radically different findings. The arrangement of the layers, the forms of the cells and the fibrillary structure were quite atypical. The number of fibers and cells was notably decreased.

Our own observations have led us to conclude that one should be very cautious in accepting the various descriptions of alteration in the neurofibrils. That alterations do exist in pathologic states is probable enough to be almost certain, and it is only against the tendency to accept too readily the attempts to classify them that we advise. This seems specially true of the Cajal method, depending as it does upon the well-known rather uncertain powers of penetration which silver salts possess. In the most successful preparations by this method there are always two zones, where the staining is absolutely unsuccessful, even in the middle zone, where the stain is most successful, all the cells are not impregnated regularly and evenly, and we have found not infrequently badly stained cells in normal preparations which resemble quite closely some of those described as pathologically altered.

Marinesco has given elaborate descriptions of the changes in the neurofibrils after tearing out the hypoglossus of rabbits. His records show changes from the forty-eighth hour up to thirty days, whereas our own preparations of the hypoglossal nucleus fail to show even at the end of the fifth day the changes he describes as having already taken place at the end of the thirty-sixth hour. We can corroborate his observation that only the anterior external group is affected, but the only alteration in the fibrils themselves seems to lie in a paler and more delicate stain. They no longer possess the dark, sharply differentiated outlines of the neighboring cells, and the contrast is quite marked. We are unable to see that the granulation and loss of structure, he so graphi-

cally describes, or a tendency of the fibrils to arrange themselves in bundles.

The Bielchowsky method, on the other hand, is much more logical in that it gives us a more constant stain of all the elements in the section, and the modifications have rendered it simple enough to permit most workers to become conversant with and rely on it. But here also there is need of much corroboration before the evidence can be accepted as final.

The new teachings ask us to imagine a fiber without a cell—a thing which we cannot do unless we give up the cellular theory.

Although there seems to be a necessity to modify the neuron theory, nothing has yet been done to cause it to be abandoned. In fact, some of the later work of Cajal, carried out according to his new method of staining, has strengthened the position of those who adhere to the neuron theory. For instance, Cajal and Retzius have both demonstrated the existence of a neurofibrillary network in the ganglion cells of vertebrates. Cajal maintains that these neurofibrils remain in the ganglion cells and their processes; they do not leave it as claimed by Apathy and Bethe, they do not emerge freely, they do not form connections with each other and accordingly they do not form a true network in the dotted substance, but merely an intimate interlacing. Cajal, Retzius and other investigators maintain that the neurofibrils in invertebrates belong to the cellular structure of the ganglion cells and their processes, being formed within them *in situ* instead of having migrated into them from without as described by Apathy and Bethe. If this is so, and at the present time it must be accepted, it tends materially to strengthen the neuron theory, for no proof has been furnished, apart from their mere existence of their extracellular appearance, and their seeming endlessness. That the neurofibrils are the actual and only conducting element of the nervous system has been assumed, but the assumption is based upon the correctness of the evidence furnished by Apathy, Bethe, *et al.*, and has been contradicted from most reliable sources.

Even though it is granted for the sake of argument that there is an intercommunication of the neurofibrils belonging to the motor and sensory system by means of networks in the cell-body, this is not adequate ground for asking us to abandon the neuron theory. There is no proof whatsoever that the fibrils have the function of conducting. That is an assumption just as the existence of a fibrillary acid by Bethe as the condition of nervous conduction is an assumption.

On the other hand, the neuron theory does not get all its support from histological study of vertebrates or invertebrates, by any means. As we shall point out later, it receives some of its strongest corroboration from embryology. But even though it were so dependent there would still be much histological evidence in support of it. For instance, the relation of the collaterals in the spinal cord, the free terminations of which can readily be demonstrated, the relation of the end-baskets around the Purkinje cells, and the granular cells of the cerebellum which Michotte (*Le Névraxe*, Vol. VI., No. 3) has particularly studied, many of which we have previously mentioned, and the results of study of the retina. Cajal has been able to demonstrate in the retina fibrillary network within the cell-body, also the anastomosis formation of the fibrils within the dendrites, but he was not able to see the anastomosis between two ganglion cells which Dogiel and Graef described.

One of the strongest supports of the neuron theory has been the teachings of embryology as set forth by His and his school. Those who oppose this theory look upon peripheral nerve fibers as the product of innumerable cells arranged one after another in chains which remain in fully developed nerves in the shape of Schwann's cells (Dorn, Apathy, Bethe, Schultze). But a recent work of R. G. Harrison of Baltimore (Sitzungsber. der Niederrhein. Ges. f. Natur. Heilk. zu Bonn, 1904), which has been received most favorably by embryologists and anatomists, gives the most unequivocal support to His' teachings that every nerve fiber is the outgrowth of an individual ganglion cell. Harrison shows, from many observations on the larvæ of amphibia that Schwann's cells, like the spinal ganglion cells, are of ectodermal origin and come from the so-called ganglion ledge of the neural canal. When this ganglion ledge is removed from the body at a certain stage of embryonal development and then the nerves develop in the normal way, it gives incontestable evidence that Schwann's cells as well as their cells of origin have no participation or significance in the formation of axis-cylinders. In other words, the peripheral spinal nerves may develop when the sheath-cells are entirely absent. This idea Harrison believes is substantiated by the fact that after complete extirpation of the ganglion ledge he has observed the development of naked fibers in the periphery.

His conclusions are: The axis-cylinders of motor nerves develop in a normal way in embryo frogs in which the development of Schwann's cells are prevented by cutting out early the ganglion ledge. The nerve consists in such cases of naked fibers which may be followed as such to the ventral portion of the thigh and tail muscles.

The sensory nerves of the tail in Triton larvæ of naked ramifying fibers, which, from their origin in the posterior cells, and the cells of the spinal ganglia to their ending, show no Schwann's cells. The latter are to be seen for the first time only after fibers have formed; they proceed gradually from the center toward the periphery, as is evident from a comparison of different stages, and also from direct observation of the fins of living frog-larvæ.

The Rohon-Beard's posterior cells of the frog embryo consist of early protoplasmic formations, which gradually stretch themselves under the skin to nerve fibers. The termination of nerve fibers so constituted consists of a thickening with fine pseudo podii prolongations. The nerve fibers are first of all simple, later they intertwine and eventually through interlacing with neighboring cells constitute a plexus. From the beginning to the end there are no Schwann's cells in these nerves. From which it appears that nerve fibers come exclusively from nerve cells.

Carrying the experiments a step further, Harrison excised in young embryo of *Rana sylvatica* and *Rana palustra* the ventral portion of the neural tubes from the cells of which develop the neuraxons of the spinal motor nerves. He left the neural ledge from which develop the spinal ganglia and sheath-cells intact. The result was that the latter developed normally, but of the former not a trace. Thus he proved incontestably, and in a way reflecting the greatest credit upon his insight and ingenuity, that the motor neuraxons are processes of the anterior horn-cells, and that the sheath-cells cannot by themselves originate these fibers.

The one thing that is needed by the opponents of the neuron theory is to show the transition of a sensory, centripetal impulse, to a motor centrifugal tract without the intermediation of a ganglion cell. If they could do that their claims would be estab-

lished. Whether they first go in or come out of the cell, whether the elementary trellis formation is originally extracellular or intracellular, whether the fibrils are at all interrupted at Ranvier's nodes, or whether there is a free peripheral termination, are all matters of trivial importance compared with this, for then the neuron theory would lose its applicability and usefulness to the problem of physiology and histology.

THE LENHARTZ TREATMENT OF GASTRIC ULCER AT THE EPPENDORFER KRANKENHAUS.

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Much is being said at present in German professional circles about the Lenhartz treatment of ulcus ventriculi, which, though employed at Eppendorf for some years, is comparatively new to the medical world, and radical enough to make it a subject for discussion, especially in view of the fact that the results attained at Eppendorf and reports of trials at other German hospitals proclaim it not only theoretically sane, but remarkably efficacious in practice.

The dietary treatment generally adhered to in this condition follows the plan based upon the work of Cruveilhier, Ziemssen-Leube, and Fleiner, with slight modifications in various hands, and consists in giving the stomach at first complete rest, allowing nothing per os save the sucking of ice, especially after a hematemesis, and furnishing nourishment by means of rich nutrient enemata. After several days a milk diet is substituted, with strict insistence on small quantities at short and regular intervals—allowing only after the second or third week 250 gm. as the maximum for every two to three hours—and this course is continued for from four to six weeks. Occasionally other fluid foods are permitted, some white meat after the fourth week, red meat in the sixth, and finally, and with care, the gradual addition of vegetables.

At the Congress for Internal Medicine at Wiesbaden, in 1901, Professor Lenhartz strongly protested against this "starvation regimen," and suggested a concentrated egg-albumin diet as a more rational method in the treatment of a gastric ulcer; for probably the chief cause of its persistence is the hyperchlorhydria almost invariably present, and, as Fleischer has pointed out experimentally and Riegel substantiated clinically, egg albumin is the most efficient food that will "bind" HCl, and thus neutralize the existing hyperacidity. In the hyperacidity occurring in nervous disorders a rich albuminous diet has long since been found the most serviceable plan of medication. And similar to the gastric disorders of neurological subjects is that in chlorotic girls: the epigastric distress, the sour regurgitation, the feeling of pressure and pain after eating, and the hyperchlorhydria are here also almost invariably present. We are sometimes undecided whether the hyperacidity pure and simple or an ulcer not yet advanced to a bleeding stage lies behind the trouble. Indeed, not only have these symptoms led to the diagnosis of gastric ulcer, but only too frequently has a chlorotic condition been the precursor of such. Here, too, the same indications hold good, and, in fact, the treatment of chlorosis by means of such a diet, together with the administration of iron, has met with excellent results, and is the one employed at Eppendorf.

From observations made in an extensive practice at Eppendorf (where 10,000 and some odd number of patients were admitted on the medical side in 1905) Lenhartz concluded that many cases of gastric ulcer do not definitely improve, or do so but very slowly, under the method of retrenched milk feeding, that the high acidity is not measurably lessened, and preeminently this: that if patients are brought into the hospital in a poor physical condition consequent upon one or more hemorrhages, often, indeed, in collapse, the "starvation treatment"—the ice and nutrient enemata and insufficient milk feeding following—not only maintains the patient in his wretched anemic state, but may even drag him into serious inanition; and such an undermined constitution hardly favors the speedy healing of an ulcer. Moreover, frequent nutrient enemata excite the gastrointestinal tract into peristaltic activity, and may thus induce renewed bleeding; besides very little nutriment is, after all, obtainable. On the other hand, should more milk be given per os, merely enough to preserve the body weight—three liters for an adult—would overfill the stomach and stretch its walls, thus preventing a contraction of the ulcer and again offering the danger of renewed bleeding. Professor Lenhartz therefore sought another dietary treatment, one that would especially combat the hyperchlorhydria and reinforce the enfeebled and anemic state of the patient, for such reinforcement is imperative in the severe cases, particularly when hemorrhage has occurred; and so the concentrated egg-albumin diet was tried. In case after case the effect proved so gratifying that this method became the routine hospital treatment. The result of such treatment is that the sour regurgitation subsides, the vomiting immediately ceases, the pain and distress after eating disappears within a few hours to a few days, and, finally, an increase in the body weight is manifest as early as the first week. Besides, the improvement is comparatively rapid, so that the patient can be dismissed as cured within a briefer time than formerly.

The following is the tabulated management at the hospital: Absolute rest in bed for at least four weeks. All mental excitement to be avoided. An icebag is placed upon the stomach, and kept there almost continuously for two weeks. This prevents gaseous distention, prompts contraction of the stomach walls, thus tending to obviate hemorrhage, and eases the pain when present. On the first day, even where a hematemesis has occurred, the patient receives between 200 and 300 c.c. of iced milk, given in spoonfuls, and two to four beaten eggs. At the same time bismuth subnitrate is given twice or thrice a day, 2.0 gm. at a dose, and is continued for ten days. The eggs are beaten up entire (with a little sugar), and the cup containing them is placed in a dish filled with ice, so that they remain cold. Sometimes a little wine is added. This food at once "binds" the supersecreted acid, and therefore mitigates the pain rapidly and causes the vomiting, often quite troublesome, to cease. The allowance of milk is increased 100 c.c. daily, and at the same time one additional egg is given, so that at the end of the first week the patient is receiving 800 c.c. of milk and six to eight eggs. Both these foods are now continued in the same amount per day for another week. For reasons given above, no more than one liter of milk a day is allowed at any time.

Beside milk and eggs some raw chopped meat is given from the fourth to the eighth day on,

usually the sixth: 35 gm. per day, in small divided doses (easily stirred up with the eggs or given alone), the day after 70 gm., and later possibly more if well digested. The patient is now able to take some rice or "griesbrei" well cooked and a little zwieback (softened). In the third week quite a mixed diet is tolerated, the meat being now given well cooked or lightly broiled. All heavy foods are, of course, interdicted as well as vegetables with husks, etc., and those tending to produce flatulence. At the same time the patient is given strict orders to masticate his food thoroughly. The accompanying chart will give the daily quantities at a glance:

Days after last Hematemesis	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Eggs	2	3	4	5	6	7	8	8	8	8	8	8	8	8	1 egg = 73 calories
	Beaten						4 beaten raw and 4 cooked								
Sugar to eggs			20	20	30	30	40	40	50	50	50	50	50	50	1000 sugar = 3830
Milk	200	300	400	500	600	700	800	900	1000	1000	1000	1000	1000	1000	1000 milk = 670
	To be given iced and a spoonful at a time.														
Raw chopped meat						35	70	70	70	70	70	70	70	70	1000 = 980
Milk-rice							100	100	200	200	300	300	300	300	1000 = 2450
Zwieback								1 pce.	2 pcs.	2	3	3	4	5	1000 = 3320
Raw ham										50	50	50	50	50	1000 = 3790
Butter										20	40	40	40	40	1000 = 7560
Calories	280	420	637	777	955	1135	1588	1721	2138	2478	2941	2941	3007	3073	

The bowels are not to be moved, both in order to avoid any peristaltic irritation and to permit the reabsorption of blood that may have passed into the intestine. In fact, one need pay absolutely no attention to constipation in the first week, nor in many cases even to the end of the second. After the second week the bowels are moved with small glycerin injections, or warm water, and after the third week this is done daily if a movement does not occur spontaneously. After this one tries to control the bowels by means of the food, and by having the patient go to stool regularly. For the anemia iron is given in the form of a soft preparation of Blaud's pills, the formula for sixty pills being: Sulphate of iron, 10.0; calcined magnesia, 1.75; glycerin, thirty drops. Two pills are given two to three times a day. These pills are given as early as the sixth, eighth, or tenth day of treatment, according to need, administered at first in a macerated condition. In severe cases arsenic is also given in the form of pills, each containing 0.001 gm. of arsenous acid. These pills are given in gradually increasing doses, three for three days, four for four days, up to seven for seven days, then decreasing again six for six days, etc. After the tenth day and to the sixth week bismuth compositum is substituted for the subnitricum and given t. i. d. before meals. The patient is usually allowed up on the twenty-eighth day and is dismissed in the sixth to tenth week.

By this method all patients have been treated in the Eppendorfer Krankenhaus for some five or more years, the treatment being at all times begun at once. Before the Lenhartz method was employed the records of 100 cases showed a recurrence of hemorrhage in 20 per cent. of patients. In a series of 135 cases with one or more hematemeses on or just prior to admission, such recurrence was noticed in but 8 per cent. of patients, three of whom had at first been in other hands. Among the 135 cases of Lenhartz there were three deaths, one due to severe anemia (the blood examination showing but 17 per cent. of hemoglobin on admission), one on the fifteenth day of treatment, due to femoral thrombosis and pulmonary emboli, and one on the twenty-seventh day, the autopsy disclosing five ulcers, one having eroded a duodenal vessel, thus occasioning profuse bleeding. This patient had had many hemorrhages before entering. Of the remaining cases the severest gave the most gratifying results. Those whose blood on admission contained but 35 per cent. of hemoglobin or under showed an average weekly increase of 7.7 per cent.; those having between 35 and 60 per cent., an average weekly increase of 6.34 per cent. In twenty-five cases under my own observation during four months there was an average weekly increase in weight of 1.15 kilos. The majority of patients were dismissed as cured before the eighth week. In no case was it manifest that any unfavorable effects were produced by the treatment.

It is interesting to notice that in the entire series no case of perforating peritonitis occurred. On the other hand, one case that during a strict Leube cure developed obvious symptoms of threatening perforation improved immediately when the Lenhartz treatment was instituted; and this case I shall record in full, as it illustrates unusually well the results obtained in a serious instance by both the Leube and Lenhartz management.

Emma L., twenty years of age, taken in charge March 15. She gave a history of epigastric pain for four weeks, a slight bloody emesis on March 3, a more profuse hemorrhage on March 4, and a very severe hematemesis on March 5. The anemia was extreme.

March 5 and 6, abstinence; 7, four saline enemata of 100 gm. each; evening, hematemesis; 8, two nutrient enemata of 100 gm. each; 9, three nutrient enemata of 100 gm. each; 10 to 13, three nutrient enemata of 100 gm. each; 14, three nutrient enemata of 100 gm. and fifteen teaspoonfuls iced milk; 15, three nutrient enemata of 100 gm. and twenty teaspoonfuls iced milk; 16, three nutrient enemata of 100 gm., five teaspoonfuls, and fifteen tablespoonfuls; in the evening there was hematemesis; 17, two nutrient enemata of 100 gm.; 18, three nutrient enemata of 100 gm.; in the evening, hematemesis again; 19, one nutrient enema of 100 gm., 300 gm. saline enema, and 100 gm. gelatin injection; 20, three nutrient enemata of 100 gm.; 21, enema of 500 gm.; 22, enema of 500 gm.; 23 until April 1, daily nutrient enemata of 600 gm. On March 27 there was repeated vomiting.

April 2, enema of 600 gm. One teaspoonful of iced milk every hour; hemoglobin, 40 per cent. From this date until April 10 nutrient enemata of from 600 down to 400 gm. were given, and, in addition, milk, at first in teaspoonful, later in tablespoonful doses every half hour. On April

11, two liters of milk was given, the enemata being stopped. The following day three liters of milk was given; April 13, two and three-fourths liters of milk, with bouillon and chicken soup; 14 and 15, two and three-fourths liters of milk, bouillon with egg, and chicken soup.

On April 16 she was placed in charge of Professor Lenhartz. On the same morning she had vomited several times, had severe gastralgia, and was exquisitely sensitive to pressure in the pyloric region. The abdomen was tense and slightly distended. Symptoms of collapse, with pulse 144 and temperature 38.5° C. (101.3° F. The application of ice-bags and administration of opium were at once prescribed.

April 17, signs of peritonitic irrigation were less apparent; 200 cm. of iced milk given spoonfulwise, and the yolk of two eggs; 18, patient very weak; about 600 gm. iced milk given per spoonful in twenty-four hours; also the beaten yolk of three eggs; 19 and 20, four eggs (entire); no pain; 21, four eggs and some chopped meat. On the following days the same diet was given, with the gradual addition of white bread, finely cut chicken, meat, and mashed potatoes. May 1, a normal strengthening diet; 12, out of bed part of the day; 18, hemoglobin 74 per cent. June 4, has gained 22 1-2 pounds; since April 30, hemoglobin 92 per cent.; discharged as cured.

Thus far Minkowski, Alb. Fraenkel (Urban-Berlin), and Senator have acknowledged the excellence of the Lenhartz treatment, the last named, however, suggesting some modifications.

THE TREATMENT OF STAMMERING.

By ELMER L. KENYON, A.B., M.D.,

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Through the agency of the speech apparatus, the action of the mechanism of thought is paralleled by the action of a peripheral mechanism of bone, cartilage, and muscle. Thought is an intricate and rapid process of mind activity in which ideas are built up through the employment of words. The intricacies, precisions, and smoothness of flow of words in thought must be reflected in the rapid, intricate, and smooth production of articulate sounds in speech.

The speech mechanism is a contrivance by which a walled-in column of air may be quickly set in motion by compression upon its closed end, while at the same instant its outward movement is impeded in a definite manner at certain points in the course of its passage. This retardation of the outwardly forced air is brought about both in the larynx by the coaptation of the vocal bands, and in the mouth by various approximations of the teeth, the lips, the tongue, and the palate. Each one of these retarding positions produces its own characteristic elemental sound, and all of them together are responsible for the various elemental sounds of the language. The exact manner of production of one of these sounds is, for example, this: Nerve commands having been dispatched simultaneously to each of the groups of muscles concerned, the chest responds by contracting upon the inner end of the air column, the larynx assumes a definite position, the vocal cords coapt, the soft palate closes the mouth cavity off from the nasal space, and the tongue meets the palate in a definite place and manner. In the production of these complicated movements each organ of the speech mechanism must act in instant harmony with the corresponding movements occurring in each one of the other organs concerned in the production of the particular sound. It is important to recall also that this whole process goes on without conscious direction—that is, automatically. In carrying on the speech function an exceedingly intimate association of action between the groups of muscles of the speech series is required. When a nerve command is sent out to one group a similar command is also dispatched to each of the others, and all are thus caused to act simultaneously in mutual harmony. Let there be any cause, however, for imperfection or hesitation in the action of any one group, and the smooth train of relationship of all the groups is disturbed and the function for which the combined action exists is imperfectly performed.

Here lies the key to the explanation of the disorder of speech in question. Founded usually upon a nervous constitution somewhat easily disconcerted, stammering is a functional disturbance of the smoothness of action natural to the complicated nervomuscular speech mechanism. It is manifested by a failure in the perfect coordination between two or more of the several muscular organs involved. Most often the laryngeal sound lags behind, or else does not come out vigorously and distinctly enough. This results in a wavering, a hesitation. In the blind efforts of the patient to bring about harmony, a struggle, with or without the reproduction of an elemental sound, occurs. There are various sorts of efforts made and various degrees of intensity in the struggle. Following backwards this difficulty in the production of the laryngeal sound we find it usually depending upon a deficiency in the compressive action of the chest, or else in imperfect methods of breath control. Moreover, muscular spasm comes to enter more or less into most instances of hesitation. In some, especially in those of long standing, the spasm becomes severe and prolonged, even blocking wholly for a moment the action of the speech mechanism. This severity of spasm arises from the misdirection of the sufferer's efforts for relief, by which he blindly causes certain muscles habitually to be surcharged with nervous energy.

The peripheral organs of speech of the stammerer are not impaired in any manner peculiar to this class of sufferers. But peripheral abnormalities may help to aggravate the disorder when already engrafted. And with young children in whom there exists a neurotic basis for stammering such peripheral abnormalities may be the determining factor in setting going the slight imperfections of coordination which are to result in the development of a stammering habit. The disturbances capable of interfering with the chain of nervous discharges necessary for the production of this complicated automatic nervomuscular act are often also of an obscure character. It is to be remembered that, forming the basis for a large majority of these cases, we have to reckon with a nervous organization which is more readily disconcerted than that of the wholly normal subject. It is certain that suggestion is in this connection of great importance. That feeling of social apprehension common to sensitive young persons leads always to self-consciousness; and self-consciousness directed towards a subconscious physiologic function is often capable of producing disturbance. Witness the lack of control in walking of an unaccustomed person as he crosses the stage before an audience.

It is intended that these brief remarks upon the nature of stammering shall be scarcely more than suggestive. Coming to sum them up, we are, for the purposes of this paper, to bear in mind the subconscious control and action of the speech mechanism,

the functional character of the disorder and its usual basis in an easily perverted nervous organization, its possible incitation by physical abnormalities affecting the action of the peripheral organs, the tendency of the trouble to become more and more firmly engrafted as time elapses, and, we should add, the helplessness of the sufferer (barring exceptional cases) to master his disorder. This helplessness is a corollary to the subconscious production of speech. Knowing almost nothing of the manner of operation of his speech organs, the sufferer himself alone must work blindly and therefore usually unsuccessfully for his own relief.

In meeting the problem of treating stammering three main ideas are to be advanced: First, education, that the patient may consciously learn how to handle his speech apparatus; second, discipline, that he may overcome a firmly rooted and stubborn habit; and, third, correction of general organic disability, and of peripheral abnormalities, in order that the delicate mechanism of speech may not be physically interfered with. The last of these considerations we shall pass over lightly, as bearing rather upon individual cases than upon the general problem of treating stammering. It may be said as a general proposition that if abnormalities are present in the region of the tongue, palate, pharynx, nose, or larynx, capable directly or indirectly of retarding the free movement of the organs concerned in the production of speech, these certainly should if possible be eliminated. Moreover, the daily maintenance of the full physical vigor, aside from its direct effect upon the tone of the nervous and muscular structures, may prove to be the turning factor in the maintenance of the firmness and persistence which is usually essential for complete success in gaining control of the refractory speech mechanism.

Taking up the main considerations to be developed in discussing the treatment of stammering, those of education and discipline, we must at the beginning bear in mind the helpless ignorance of our patient concerning the technique of speech production. We can expect him to do nothing rightly for the correction of his disorder until he knows what he must do in order to handle his speech apparatus. We, therefore, at once make him a student of normal speech from the standpoint of the technique of its production. In the adult patient it is remarkable how much of the confusing mystery and seeming complexity of speech is thereby at once done away with, and how quickly the patient is able to apply this knowledge to the actual operation of his speech apparatus.

The "discipline" of our patient goes on coincidently with his "education." His new knowledge concerning speech production should at once be put into practice. In order to accomplish this the speech apparatus of the patient is immediately severed, so far as can be, from the control of the subconscious centers and placed in charge of the superimposed conscious mentality. Speech for our pupil is no longer an automatic process, but a function governed in detail by the consciousness and the will. The speech organs hereafter during his training are to act exactly and only as the will directs. Bearing in mind the commonness and importance of defection in the chest action, the patient is to be given eventually as ready control of the muscles of the chest for compressing the air column as of those, for instance, which open and close the fist. The enlargement of the chest capacity by training is often important; and the control of the breathing in order to insure a supply of air adequate for speech purposes at each moment must in many cases receive especial attention.

Our patient must learn to handle consciously the speech mechanism, chest, larynx, and throat, as a single machine, instantly and accurately. He is to be taught the manner of action of the articulating organs of the mouth and of the larynx in the production of each of the elemental physiological sounds. In conjunction with a well-controlled chest action, he should practise these sounds until they are thoroughly understood and easily produced. Simple combinations of such sounds are to be dwelt upon in great variety. His new conscious speech is to be built from the standpoint of and in harmony with the natural workings of the speech mechanism. Although this apparatus constructs words from the physiological elements, it makes the syllable its foundation-steps of progress. For this reason and because the syllable is simpler and more readily grasped than the word, the clear division of all words into physiological syllables is to be insisted on. Our aim should be to have the patient gain a full and ready conscious control of the speech apparatus. To this end he is set definite, conscious tasks, each having reference to the demands of normal speech and to his own peculiar needs. Accurate, forceful enunciation of the elemental physiological sounds, of simple combinations of these sounds, and of the syllables of words, demanding as it does definite brief placing of the organs of speech, is admirably adapted to the training and discipline which is our aim. The nervous apparatus and the muscular mechanisms must both act instantly to a definite simple purpose over which there can be exercised positive, unhesitating control. The nervous energy is to be directed where it is needed rather than where it was formerly wrongly sent. Each muscle group is to act in exact harmony with the other muscle groups. The peculiarities of the individual will require special adaptations in his training. The patient, for example, whose stammering is largely dependent upon a nervous overrapidity of utterance must have his "time sense" with reference to speech, as Dr. Makuen puts it, especially trained. In cases of severe muscular spasm particular attention towards bringing about a diffusion of the nervous impulse which has become overconcentrated in the spasm-involved muscles must be carried out.

"The stammerer," says Alexander Melville Bell, "has to take his speech to pieces as a watchmaker does a watch, and examine all the cogs, and pins, and pivots of its mechanism; then, having discovered and corrected the defects of the separate parts of the machine, he must proceed carefully to replace them, one by one, in natural order, adjusting each to easy action before he passes to the next."

In the course of time the patient has ceased to stammer. He has gained control of his speech mechanism and directs it correctly in detail as a conscious process. He understands what he must do in order to speak correctly and he does those things. Ignorant automatic stammering speech has given place to intelligent, conscious, normal speech. But the fight is even now only well under way. Through the conscious correct action of the muscles of speech the discipline of the subconscious nervous structures must go on until they can be freely entrusted to assume control. Until his conscious correct speech has by repetition and persistence completed the cycle and itself become automatic the patient is liable upon occasions (and they will grow in frequency) to be diverted by his thought, relax his conscious control and relapse at least partially into his long-established stammering habits. Great persistence in conscious control is an

all-important necessity, albeit one that patients are prone not to realize fully.

It will be universally agreed that a firmly rooted habit of any sort is not easy of eradication. It will be also agreed that the firmness of purpose demanded for the eradication of any habit, a firmness often to be exercised through a long period and under difficult circumstances, would be found lacking in a great many persons. The stammerer is no exception to this rule. In many cases we are obliged to realize that the patient would rather stammer than not, or, in other words, that he would rather stammer than carry out the fight necessary for his release. And here enters the temperament of the sufferer to aid or to hinder. The forceless, the vacillating, he who temperamentally drifts with the currents of life, who, instead of overcoming tasks permits tasks to overcome him, will be a much harder problem than the one who by temperament courageously fights his way through every difficulty. The latter will, under guidance, sometimes recover normal speech with remarkable quickness; the former may require much encouragement for months or even years. It will be seen that the tactful resourcefulness and practical psychological insight of the director has unending opportunity for occupation in the course of his labors with the various types of the disorder and with the various temperaments of the sufferers.

The beginning of training should be made as early as the discovery of the fault, that the habit feature may be as lightly grounded as possible. It is much to be deprecated that the highest possible usefulness of the physician, the forestalling of disaster, is almost never exercised in these cases. If a tendency to stammering shows itself in the young child, let it be assumed unhesitatingly that the utmost danger of the continued development of the disorder exists, and let the physician proceed accordingly. Thus we may usually avoid untold mental suffering, not to speak of expense and often of blighted worldly hopes. In caring for stammerers of immature age we should apply the principles already laid down, but in a manner simplified to meet the reduced intelligence of the patient. It may be necessary in the very young child chiefly to guide the little chap gently, but persistently and always without excitement, into a slower and more distinct and more forcible manner of speech; and also so far as possible to lead him out of his excitable periods. But even in children as young as three or four years it is feasible and desirable to enter upon a simplified course of training upon the general lines already laid down.

The factors which bear towards a less hopeful prognosis may be stated as follows: The instances in which the disorder is most firmly rooted in the nervous structures are least hopeful, some of these being quite incapable of recovery; such are often the hereditary cases. Habitual severe spasms render the case much more difficult. The older the patient the more firmly is the habit rooted and consequently the harder the cure. Extreme weakness of will, or of persistence, as well as extreme indifference, constitute, unless they can be controlled, almost hopeless mental states. Finally, circumstances interfering with an efficient course of training (as, for example, the necessity of continually overtaxing mind and body in earning a living, or unintelligent cooperation, or indifference, on the part of the parents) are unfavorable conditions sometimes hard to overcome. In actual experience the element of doubt most often arises from the difficulty of enforcing a sufficient degree of earnestness and persistence. In general, the majority are curable and nearly all can be much helped.*

34 Washington Street.

THE STOMACH DOUCHE AND ITS APPLICATION.

By M. GROSS, M.D.,

NEW YORK.

The introduction of the stomach tube is indicated: (1) For diagnostic purposes, where in any case it is indispensable in order to permit of intelligent therapeutic procedure.

(2) For therapeutic purposes, to remove strongly tenaceous mucus in old, obstinate catarrhal inflammations of the mucous membrane of the stomach, such mucous being certainly apt to contribute to a disturbance of normal digestion. With this process may be combined the application of fluids, the chemical composition of which depends upon the effect it is intended to produce. Thus, alkaline solutions—aside from their emollient action—exercise an inhibitory effect upon the secretion; salt solutions are employed to increase secretion; weak silver solutions decrease abnormal acidity and are also used in certain hyperesthesias and in erosions. Bismuth, which is milder in action, is used for the same purpose.

(3) The stomach tube is further used in cases of serious disturbances of motility. Here the object is not only to remove food remnants, but also to exercise a purely mechanical effect upon the relaxed abdominal wall.

There is no doubt, however, that frequently we are able to overcome the above-named functional derangements by adhering to suitable diet, going through a mineral water cure, and prescribing correct medicinal treatment, so that only in a comparatively small number of cases the introduction of the stomach tube will prove indispensable. It is equally certain that frequently, even in old cases, a milder course of treatment will be found sufficient, provided the existing functional disturbances, permitting of such a course, have been clearly established.

On the other hand, there remain a series of cases, in which we are compelled to use the stomach tube for therapeutic purposes, and in these cases it will be found that only a few applications are required to lead to the desired end.

To recapitulate: The strict indications for the introduction of the stomach tube for therapeutic purposes are: (1) Acute toxic inflammations, intoxications, and ileus; (2) old mucous or non-mucous gastric inflammations; (3) a small number of sensitive stomach neuroses, hyperesthesias, chronic ulcerative affections, erosions; (4) anomalies of secretion, or chylorrhea; (5) disturbances of motility in both atonic and mechanical gastroectasia.

It is difficult to conceive how the stomach tube which is at present in general use, can produce satisfactory results for the purposes indicated. To meet these difficulties others have already suggested to let the patient lie down after the introduction of the fluid, so as to distribute the same equally over all the parts of the stomach; others again have tried to achieve the same result by shaking the entire

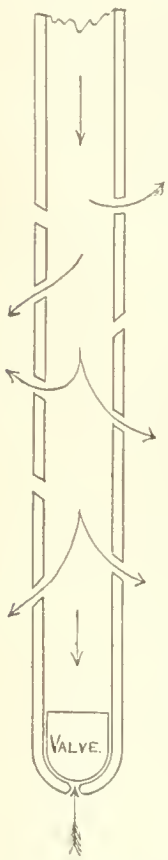
*The author wishes to acknowledge his indebtedness to many authorities, including particularly Merkel, Gutzmann, Kussmaul, Bell, Makuen, and Wyllie. He takes especial pleasure and satisfaction in publicly acknowledging his greatest indebtedness to Dr. G. Hudson Makuen of Philadelphia, whose patient, personal interest and guidance taken with his fine mastery of this subject, has piled up an indebtedness not easily to be repaid.

body of the patient—a manipulation as absurd as it is impracticable.

My contention is that only an empty stomach, readily accessible in all directions, can be thoroughly cleansed and be satisfactorily subjected to the influence of therapeutic measures.

For the purpose, then, of thoroughly removing mucus, food remnants, etc., of reaching every part of the cavity of the stomach, and of imparting tonic action to the musculature of the stomach wall in a number of cases, I exclusively employ the stomach douche, a description of which will follow. By this douche the entire inner surface of the stomach is irrigated by a fluid injected under exaggerated pressure.

In ordinary lavage the fluid injected affects only that part which is contiguous to the tube, thus either never reaching tenacious mucus at all, or only with insufficient pressure. This task, however, is accomplished by the douche. Besides, fluids introduced under exaggerated pressure tend to flow off rapidly. Thus, we have to deal not merely with simple syphon action, but with animating, irrigating spouts, which incite the reserve forces of the muscular apparatus to action, thereby contributing to an improved elasticity of the muscular layer.



Rosenheim's stomach douche does not fulfil these requirements, as I have tried to show in a former article.*

The tube which I have used during the last few years differs from an ordinary stomach tube only in that it is provided with an end opening (outlet aperture) instead of the ordinary lateral apertures, and a number of small, pinhead-size lateral holes (inlet openings), which perforate the walls of the tube in different directions.

As the fluid is injected under exaggerated pressure, the large aperture at the end tightly closes itself by a loose hard rubber valve being pressed against it, thereby absolutely deflecting the inflowing stream against the lateral apertures.

On lowering the head of the tube, the outflowing stream pushes the valve up, an operation which may be assisted by aspiration.

The tube, introduced to the length of about fifty centimeters, hangs freely in the cavity of the stomach and commands the entire field of operation. To reach every part of the stomach by the ordinary tube requires the complete filling of the stomach, which, aside from the extensive dilatation and involvement, is frequently a matter of impossibility on account of the vomiting which, according to individual idiosyncrasies, will occur sooner or later during the operation.

Einhorn's spray apparatus (which, by the way, is susceptible of simplification) may reach a large portion of the stomach, and may be suitable in cases where only small quantities of fluid require to be injected. The gaseous distention of the stomach which occurs in these cases, and which Riegel regards as an objection, rather proves an advantage, assisting as it does in the unfolding of the wall, thus rendering a large portion of its surface accessible to the spray.

The action of the stomach douche is thus mechanico-chemical, thermic, or both. The increased supply of fluid produces, in both nerves and muscles, a state of excitation, or internal massage; the direct and reflex irritation of the vasomotor nerves affects an improved circulation; the peristaltic motion is incited, and the smooth muscles respond more readily to tactile irritation. The sympathetic nerves and ganglia undergo direct excitation, causing a flow of secretion as well as reflex action on organic muscular fibers, and removing functional disturbances.

In order to increase the irritating effect upon the muscular fibers, I inject alternately warm and cold fluids, as the susceptibility of the nerves and muscles to the effect of cold in increased by a preceding injection of a warm substance.

315 Second Avenue.

*Therapeutische Monatshefte, 1896, p. 199.

DIPHTHERIA ANTITOXIN IN CHOREA.*

By B. F. HAMILTON, M.D.,

EMLENTON, PA.

About nine years ago I saw a case of diphtheria in a boy fifteen years of age. He had been suffering from an aggravated form of chorea for several months. I gave the boy full doses of diphtheritic antitoxin and opened the trachea, but he lived only a week. I noticed, however, that as soon as the antitoxin was given the choreic movements ceased and did not return. I made a mental note of this fact, and resolved to bear it in mind in the first case of intractable chorea that might come under my care. This opportunity never presented itself until quite recently. The history of the case is as follows:

A young man twenty years of age, of robust health, a night telegraph operator, had never been sick, but had become an inveterate tobacco smoker, and for the past year had not been getting nearly enough sleep. The family history is unusually good, except that an older brother has an involuntary muscular movement of the lower extremities when he attempts to walk. This came on after a severe illness in infancy, the nature of which I could not ascertain. His mind is also somewhat affected.

I was called to see this young man, first mentioned, December 15, 1905. He was suffering from an attack of subacute rheumatism affecting his hands and right side mostly. The temperature was very moderate, and all trouble seemed to subside in a week, and in ten days he reported for duty, but only for one night, as the rheumatism returned. I did not see him again until January 30, 1906. In the meantime he had been treated with various nostrums. He had at this time but little rheumatism, but was extremely nervous, and this condition, as I was informed by the family, was growing rapidly worse. His mind was quite unsettled also. I ordered him to bed at once and placed him under the care of a trained nurse, and began to give him full doses of the fluid extract of cimicifuga and Fowler's solution of arsenic. I increased the dose of the latter rapidly until twenty-five drops were taken three times a day, before any constitutional effects of the drug manifested themselves. The rheumatic symptoms subsided, but the chorea became rapidly worse, so that by February 15 his hands had to be tied together, and his feet and limbs

*Read before the Venango (Pa.) Medical Society, March 20, 1906.

had to be confined, and at times it took the combined efforts of two attendants to keep him in bed and prevent him from injuring himself. At this time it took as much as ninety grains each of chloral hydrate and bromide of potassium in divided doses during a night to procure a few hours' sleep; or, which acted rather better, forty grains each of sulphonal and trional. The delirium, which at first was moderate, was now a violent mania. It was evident that the man could not survive long under these conditions. On February 17, at 8 o'clock A. M., I gave him three thousand units Alexandris of diphtheritic antitoxin; at 12 M. a decided reaction had come on, temperature 102°; by 5 o'clock P. M. this had subsided, and the choreic symptoms were so much relieved that all restraint could be removed; delirium the same. Half the former dose of the hypnotics above mentioned procured a good rest the following night. By 8 o'clock A. M., February 18, there still being some choreic movements, I gave two thousand units of antitoxin serum; in four hours there was some reaction; temperature, 100°. By the evening of this day all irregular muscular movements had subsided, and at this writing (March 20) have not returned. The arsenic and cimicifuga were discontinued when the serum treatment was begun. Bromide of strontium with strychnine and general tonic treatment have been continued; all hypnotics were left off three or four days after the chorea had subsided. The mental condition is improving, but not yet normal. The patient eats and sleeps well.

So far as I know this is the first case of chorea treated by diphtheritic antitoxin, and I wish to call the attention of the profession to it, not to promulgate any theory, but to induce others to try it, and report the results.

I think a physician feels as helpless in the presence of a case of this distressing malady as under any other circumstance. He is bound to tell his patient that, with rest and seclusion, he will likely recover, but he can't tell when; that drugs are generally useful under these circumstances.

It is little wonder that these cases generally fall into the hands of charlatans, and the quack remedy that happens to be in use when nature is about to effect a cure gets the credit.

REICHENHALL, BAVARIA; A CLIMATIC RESORT.

By L. GRUENWALD, M.D.,

MUNICH, BAVARIA.

On the occasion of a visit from an American colleague it was vividly brought to my mind how little the famous resort "Bad Reichenhall," with its world-wide reputation, is visited by American travelers and health-seekers. To draw the attention of larger circles to the place, its natural advantages and its medical institutions, is the object of this paper.

Reichenhall is situated very near to two places much frequented by globe-trotters, viz., Munich and Salzburg, in a wide valley surrounded by high mountains, which offer a panorama of exquisite beauty and protect the whole valley against winds and storms, producing at the same time stronger insolation and higher temperature. Reichenhall is by these favorable conditions the warmest place in Bavaria proper, and strongly contrasts with Munich. Its climate in summer is less adapted for the vigorously healthy, who seek exercise and excitement, but it has no equal for convalescents and patients with affections of the mucous membranes, who find there an air of rare mildness and an equable temperature.

It is surprising that this most important natural factor, the climate, began to be appreciated only after patients had already for fifty years made use of the evaporation of the salt-water, supplied by the natural saline springs and forced to considerable height by large pumps in the Gradirhaus. Whilst at that period these inhalations were considered the principal therapeutic factor, we have learned to-day to pay more attention to the effect of the salubrious climate, which is a particular attribute of the place and cannot be enjoyed elsewhere.

In addition to these natural advantages Reichenhall has, like other resorts, a number of medical appliances and institutions, of which I shall enumerate only the principal ones.

One of the most prominent features is the drinking of whey, made of the milk of cows and goats, whose main value, besides its high degree of albumin—91 to 93 per cent.—seems to consist in the large proportion of potassium and phosphate salts in soluble form up to 0.9 per cent. Its effect is often increased by a decoction of genuine mountain herb, relieving dyspepsia.

From the mountain fir needles is obtained the renowned "Latschen oil," an aromatic oil, used pure or suspended by warm or cold inhalations.

The inhalations of Latschen oil as well as of other remedies may be called a specialty of Reichenhall, and greater and more practical institutions for vaporization of all kinds cannot be found elsewhere. The various forms of steam inhalations can be taken, if desired, in separate cabinets, but the majority of men and women take them in a large room, where they are covered by rubber cloths and sit or walk and breathe the medicated air. Adjoining the Inhalatorium is the pneumatic cabinet, whose improvement and perfection is due to the efforts of a deceased physician of Reichenhall, the son of the famous Liebig, the father of organic chemistry. The buildings for the use of condensed air are most extensive and comfortable, and are used with excellent results in cases of emphysema, chronic catarrh of the bronchi, atelectasis, and old pleuritic adhesions, being in this respect on a par with the effect of the inhalations in catarrhal conditions of the mucous membranes.

The capacity of the pneumatic cabinets is so large that 198 persons can make use of them at the same time.

Tuberculous patients are not admitted. For these and other seriously afflicted ones ample provision is made as to rooms, resting places in the gardens, verandas and the Liegecur, where they can have the unlimited use of fresh air.

Modern hydrotherapy is administered by baths of natural salt water of different concentration and temperature, to which department the physicians of the place have always paid great attention.

Additional features are a large drinking hall with a bar, furnishing all European mineral waters, kefyr, etc., a lignosulfite inhalatorium for consumption and especially purulent bronchitis, baths with Latschen oil, turf, fango, carbonic and electric baths for patients with heart disease, who are coming in increasing numbers, and a Terraincur after Oertel, extending over 200 kilometers.

But in conclusion I must again emphasize the wonderful tonic air and climate, which attracted over 30,000 people last year, the bracing effects of which are well worth a fair trial by travelers from the Western Hemisphere.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, June 16, 1906.

THE BOSTON MEETING OF THE A. M. A.

THE fifty-seventh annual meeting of the American Medical Association, held last week in Boston, will be memorable for the good work of the various local committees having charge of the arrangements. The program was carried out exactly as planned, without a hitch. Some complaint was made of the strict insistence upon the rule that admission to the meetings and receptions should be given only to registered members of the Association, but with an attendance of 4,500 members the press would have been intolerable had outsiders been admitted without badges or other credentials. Even with this precaution some of the receptions were uncomfortably crowded.

The scientific work of the meeting, so far as can be judged from the very full reports of the four chief sections which the readers of the MEDICAL RECORD have had presented to them, was quite up to the average of such assemblages. The association is, however, becoming so large that the number of papers presented in the various sections is too great to permit of their being assimilated by the hearers or profitably discussed. If the programs continue to grow it may be necessary to adopt the plan of the Association of American Physicians, according to which papers are read only in abstract—a good way for expediting business but not favorable to scientific calm and deliberation.

This meeting had promised to be politically more interesting than some of its recent predecessors, for it was rumored that a strenuous effort would be made to dismiss the secretary-editor. So great has become the dissatisfaction with his administration that this endeavor might have been successful had the general body any voice in the management of the Association, but as the society is ruled by the House of Delegates, whose members are appointed before the meeting each year by the State societies and not by the Association itself, the change of dynasty was not effected. The feeling of opposition among the members was indeed so strong that the retiring president deemed it wise to speak of it, to assure the delegates that everything was as it should be, and to avow that he personally knew nothing of the existence of any inner ring or clique. That assurance was, of course, unnecessary, for if there were an inner circle of "bosses" such an ephemeral officer as the president would not be likely to be admitted to its councils. Another evidence of the general dissatisfaction with the management of the Association was the resolution presented in the House of Delegates calling for the appointment of a committee to look into the affairs of the treasurer and secretary. Drs. Billings and Simmons must now regret the shortsightedness of their friends in tabling this resolution, for they will have to be investigated some day and the sooner the disagreeable job is over the better. As Dr. Walker of Detroit stated in introducing his resolution, the criticism of the management has been so bitter because the majority of the members do not understand the intricacies of the business of the Association; the object of the proposed investigation was therefore to clear the officers of unjust suspicion and to demonstrate to all that they had acted solely in the interests of the Association, as they understood them, uninfluenced by motives of self-seeking. The unwise tabling of these resolutions will defer what the unhappy officers might resent as the indignity of an investigation, but it will, on the other hand, strengthen the suspicion in the minds of many that certain things may have been done which would not bear the light of an investigating committee's report. So far from quieting suspicion this evading the issue will be almost certain to increase it. As the preamble to Dr. Walker's resolution read: "because of these facts, there has arisen the sentiment which bids fair to become disagreeably large, unless the cause upon which it feeds be removed, viz., ignorance of the real truth," but the only way of making the real truth known has been stopped by the friends of the accused. These two officials are now in the unenviable position of serving a body, a large minority, if not the majority, of the members of which look upon them with distrust, yet their foolish friends refuse to permit an investigation which they must surely know is the only means of restoring confidence in their integrity. The opposition to an investigation could not have been on account of the constitution of the committee named in the resolution, for the Association could trust such men as Lydston and Graham of Chicago, Wiggin of New York, Cordier of Kansas City, and Eve of Nashville, to do their work conscientiously and make a report on the facts as they found them, free from any taint of prejudice or favoritism. For the sake of the Association as well as of the officers mentioned, it is a great pity this well-intentioned endeavor to get at the truth and make it known was suppressed.

The selection of Atlantic City as the place of meeting in 1907 was not unexpected. This popular resort is a favorite convention city for medical societies, rivaling Washington in this respect, and it is apparently becoming the summer capital of the Association. No better place for the June meeting of such a large body exists. It is near the three great medical centers of the East, its hotel accommodations are more than ample, it is readily accessible from all parts of the country, and its bracing sea air acts as a grateful tonic to the members from the interior, jaded by a winter of arduous professional work. It was a much better choice for a summer meeting than that of Chicago, the only other place considered, would have been.

THE NOSE IN ITS RELATION TO THE SEXUAL ORGANS.

The apparently close relation between the nose and the sexual organs has often been commented upon. Even among the ancients the influence of certain odors on the sexual sense was a matter of common knowledge, and this phenomenon, together with a number of others which have also long been recognized, has during recent years been subjected to scientific test and investigation. One observer has pointed out the existence of a "nasal dysmenorrhea" and has shown that its symptoms may be made to disappear by appropriate treatment applied to the nose. The possibility of a motor instead of a sensory reflex being produced by the irritation of an inflamed and hypertrophied nasal mucous membrane is well shown in cases in which uterine contractions have followed the application of the faradic current to the former, and abortion after galvanocaustic treatment of the inferior turbinates is not unknown. It might be expected that sooner or later the thought would occur to someone to apply this knowledge for clinical purposes and that when the proper indications were present uterine contractions could be excited by local stimulation of certain areas in the nasal mucosa.

In order to test the value of such procedures an investigation of this character has been conducted by Jerusalem and Falkner (*Wiener klinische Wochenschrift*, 1906, No. 15). Their observations were made in cases of prolonged but uncomplicated labors, in inevitable abortion, and when induction of labor was necessary. The following modes of applying the stimulus were made use of: Massage of the so-called genital spot in the nose with an ordinary probe, the application of the faradic current to the same area, and electrolysis of the inferior turbinate by the galvanic current. A considerable number of patients were experimented upon, but the results of the investigation, though interesting, are by no means conclusive or satisfactory. It seems that uterine contractions could be promptly elicited in this manner in women who were previously afflicted with dysmenorrhea, but in normal cases the procedure failed entirely. The writers are in fact forced to admit that stimulation of the nose in the manner described does not compare in efficiency or certainty with other well-known methods of exciting uterine contractions. Even if the latter appeared they were far too weak to result in the expulsion of the fetus. The only apparent value of the procedure is in cases in which it is merely desired to hasten labor rather than to bring it to a sudden termination.

The uncertain character of the results obtained will scarcely warrant the adoption of any of these procedures as therapeutic aids to labor, but there is another aspect of the subject which would seem to be of more positive value. This is in reference to the possibility of influencing the severity of the labor pains through the medium of the nose. As already stated there are two areas in the nose which become hyperemic and swollen during the menstrual period. It has also been found that in certain forms of dysmenorrhea of the nervous type, in which mechanical factors can be entirely excluded, cocainization of these "genital spots" affords well-marked relief from symptoms. Closer examination shows that the pains in the hypogastrium are apparently lessened when the application is made to the inferior turbinate and those in the back when the tubercle of the septum is thus treated. As the act of labor is considered by many to be entirely analogous to menstruation, it would seem that certain features connected with this process could be similarly affected through the nose. It is claimed, and this is supported by observation, that perfectly normal physiological labor should be quite free from pain and that the uterine contractions give rise to this sensation only when an obstruction is to be overcome. A certain degree of mechanical resistance obtains in every labor, but this does not apply during the early stages unless dystocia in some form or other is present. Thus labor may and often does go on to complete dilatation of the os without any complaint of pain. But there are very many parturient women, one may almost say a majority, who experience pain during the early stages, and among these may be found some who suffer acutely. The latter usually give a history of previous menstrual disturbances and in addition they will present the nasal lesion already referred to. The application of cocaine to the nasal genital areas in thirty-one out of forty cases observed by the writers was followed by a marked alleviation of the physical pain connected with the process of labor, although the expulsive effects were not diminished. The influence of suggestion in these patients must, of course, be kept in mind, although there was no evidence of such in the cases related.

Another symptom for which nasal cocainization was tried were the puerperal after-pains and here, where the mechanical factor could be practically excluded, a single application was usually found sufficient to dispel every trace of pain. It may be that the method will be found useful in instances such as those described and also in those in which the special indication would appear to be the existence in a woman of dysmenorrhea previous to the time of her pregnancy. Here it appeared that the acute suffering coincident with the stage of dilatation during labor could be alleviated to some extent at least.

THE CORSET QUESTION.

The artillery of the hygienists has already many times been leveled at various features in the feminine wardrobe which appear inexpedient to the cold eye of reason, however much they may appeal to the esthetic sense. The circular garter, open-work stocking, high-heeled and unduly acuminate shoe, and decolleté bodice have all been subjected to criticism and efforts at abolition, but man, mere man, even when dressed with the brief authority of a medical title, can effect but little in matters such as these. Even the corset question, although settled long ago from the standpoint of hygiene, is still *in statu quo* so far as womankind is concerned. For one short period early in the nineteenth century the corset was laid aside, but this was in obedience to the dictates of fashion and not through a sense of its physiological undesirability, so that when the mood had passed the waist was once more constricted. During comparatively recent times a very strong anti-corset propaganda has been carried on in Germany, with some success, we believe, but no one who has viewed the very ungraceful so-called *Reform-*

kleid which the disciples of the health movement offer as a substitute for the more conventional garb can help feeling that it will take a few eons to get people sufficiently used to it to change their standards of what is attractive in feminine dress.

The feature on which physiologists are apt to lay greatest stress in the corset question is the assumed interference with abdominal respiration which it involves, and although some authorities such as Boerhave, Hermann, and Du Bois-Reymond have maintained that the costal type of respiration is a feminine trait which is quite independent of the manner of dress, many others refer it directly to the use of the corset and the support of clothing by constricting bands about the waist. Among the latter is Lange of Munich (*Münchener medizinische Wochenschrift*, March 27, 1906), who ascribes the feminine "waist" to an interference with the development of the lower thorax caused by these factors during the years of active growth at about the period of puberty, the time when corset wearing is usually begun. His assertions are founded on a large series of life-size tracings of the trunk contours made during a period of years from the bodies of growing girls, which show that, whereas the hips and shoulders increase rapidly in size during the second decade, the waist enlarges to a very much less degree. Through the deficient oxygenation entailed by the costal type of respiration the tendency to chlorosis among young girls is explained, while the absence of the diaphragmatic massage which should normally accompany respiration leads to disorders of the stomach and liver. The greater prevalence of gallstone disease among women is but one of the conditions referable to the reduced activity of the biliary circulation in the liver which follows this fixation of the diaphragm, and movable kidney, enteroptosis, and pelvic displacements are other penalties the risk of which must be incurred by the possessor of a modish figure. Lange believes that if the corset is to be abolished the weakened condition of the dorsal musculature of those who have worn it must first be corrected by the use of suitable gymnastic exercises, and that this is particularly necessary in growing girls who are compelled to spend many hours a day sitting at school desks. A further essential is the adoption of a mode of dress which will relieve the waist of all constricting bands, but without falling into the error of the present "reform dress," in which the weight is borne almost entirely by the shoulders. This is to be effected by having the garments cling closely enough to the trunk to cause them to be to a considerable extent supported by friction. He illustrates various plans of accomplishing this, which appear excellent in principle though their feasibility must be left to the judgment of those concerned.

Appendicitis or Colitis.

A dispatch to *The Herald* of June 10 from Paris states that the subject of appendicitis has again come up for discussion before the Academy of Medicine in that city. Dieulafoy recently asserted that too many operations were performed for appendicitis and he deplored the tendency among surgeons to cut into the abdomen whenever there were symptoms of trouble in the right inguinal fossa, saying that the appendix was often removed when the patient was in reality suffering from colitis. This point was brought out several years ago in a discussion before the Practitioners' Society of this city and reported in the Medical Record of April 19, 1902. Referring to a case in which colitis and appendicitis coexisted, Dr. Beverley Robinson said that colitis might closely simulate disease of the appendix, for the pain might become localized over the appendical region and there might be increased resistance of the abdominal walls over the same region; then the presence of nausea or vomiting, high temperature, and quickened pulse and respiration would complete the resemblance to an acute appendicitis. Cases are on record in which the removal of an apparently healthy appendix has cured the colitis giving rise to these symptoms, apparently indicating that, although no gross lesions were present, some abnormal condition existed in the appendix, causing the inflammation in the typhlocolon. On the other hand, removal of the appendix may fail utterly to relieve the symptoms complained of, indicating that the disease was located in the typhlocolon as well as in the appendix. Treatment of the colitis in the first place might well have obviated the necessity of operation in such cases; and further, as Robinson has suggested, keeping the colon clean and healthy would no doubt reduce the number of cases of appendicitis. After all that has been written and talked on this subject, it is evident that there is still something to be learned in relation to the appendix vermiformis and its troubles.

The Therapeutic Value of Mastication.

It has long been recognized that the oral cavity constitutes an important factor in the physiology of digestion, and this importance is increased by the knowledge now so universally prevalent, that many chronic diseases are directly dependent upon autointoxication originating in the intestinal tract. The part which the mouth and its accessory structures play in digestion is in fact of equal value with that assumed by the remaining portions of the alimentary canal, and this is of particular significance because it is here that the only part of the process resides which is under voluntary control. The oral cavity is concerned with the mechanical disintegration of the food, it regulates the temperature of the latter and provides an admixture of saliva which, aside from its lubricating functions, affords a means by which the organs of taste may be excited and the digestion of the carbohydrates begun. Pavlav has pointed out, the sensation of palatability conveyed by this means has an important psychical effect on the secretion of the gastric juice and, in addition, the peripheral stimulation of the gustatory nerve increases the potential energy of the entire nervous system. Monteouis and Pascault (*Journal des Praticiens*, No. 3, 1906), following Fletcher and Chittenden in their modification of Cornaro's practice, believe that this knowledge can be made of great practical value in the treatment of certain diseased conditions. Thorough mastication it is quite evident will serve to make even small quantities of food more efficient and sustaining. In addition to this, the assimilation of otherwise indigestible material is favored and the remaining portions of the alimentary tract are relieved of a certain amount of labor. Systematic mastication, therefore, they regard as of particular value in dyspepsia and autointoxication; arthritis and neurasthenias of various types, which are believed to depend on the latter, will consequently be especially benefited. Even when

the diet is limited to fluids, the suggestion also holds good in a way, for in this case it is advised that the nutriment be taken in small quantities at a time, in order to gain the same advantages in the way of gradual introduction into the stomach and mixture with saliva as would otherwise be produced by the act of chewing.

News of the Week.

The American Medical Editors' Association.—The thirty-eighth annual meeting of this association was held in Boston, on June 4, under the presidency of Dr. Henry Waldo Coe of Portland, Ore. Dr. Frank P. Foster of New York City read a paper on "The Repeater in Medical Literature," in which he advocated concerted action on the part of medical editors to prevent attempts at simultaneous publication of the same article in several different journals. Dr. W. C. Abbott of Chicago made a plea on behalf of the advertiser of proprietary preparations, in which he decried ill-advised criticism of all advertisers indiscriminately and called upon all fair-minded journals to support the honest advertiser. If this were done there would result good for the worthy advertiser and condemnation and disaster for the fraud. Dr. Kenneth W. Millican of St. Louis dealt with the subject, saying that what should be insisted on in the advertising world was honesty, and that there was no sound reason why physicians should oppose advertising of that sort. Papers were also presented by Drs. James E. Pilcher, William J. Robinson, T. D. Crothers, John Punton, and Charles Wood Fassett. Officers were elected as follows: *President,* Dr. James Evelyn Pilcher of Carlisle, Pa.; *First Vice-President,* Dr. Frank P. Foster of New York; *Second Vice-President,* Dr. Charles F. Taylor of Philadelphia; *Secretary and Treasurer,* Dr. Joseph MacDonald, Jr., of New York.

American Medical Association; Officers of Sections.—The following officers were elected in the various sections:

Medicine—Chairman, Dr. Thomas H. Coleman of Augusta, Ga.; *Secretary,* Dr. Joseph L. Miller of Chicago; *Delegate,* Dr. Nathaniel B. Potter of New York.

Obstetrics and Diseases of Women—Chairman, Dr. J. Wesley Bovée of Washington, D. C.; *Vice-Chairman,* Dr. Edward Reynolds of Boston; *Secretary,* Dr. W. P. Manton of Detroit; *Delegate,* Dr. Walter B. Dorsett of St. Louis.

Hygiene and Sanitary Science—Chairman, Dr. Prince A. Morrow of New York City; *Secretary,* Dr. Elmer E. Hegg of Seattle, Wash.; *Delegate,* Dr. W. Lewis of Chicago.

Diseases of Children—Chairman, Dr. J. Ross Snyder of Birmingham, Ala.; *Secretary,* Dr. George Wentworth of Chicago; *Delegate,* Dr. T. W. Southworth of New York.

Pathology and Physiology—Chairman, Dr. W. L. Bierring of Iowa City, Iowa; *Secretary,* Dr. W. B. Cannon of Boston; *Delegate,* Dr. W. S. Hall of Chicago.

Laryngology and Otology—Chairman, Dr. S. M. Snow of Philadelphia; *Vice-Chairman,* Dr. Philip Hammond of Boston; *Secretary,* Dr. W. Sohier Bryant of New York; *Delegate,* Dr. Otto F. Freir of Chicago.

Ophthalmology—Chairman, Dr. G. C. Savage of Nashville, Tenn.; *Vice-Chairman,* Dr. A. A. Hubbell of Buffalo; *Secretary,* Dr. A. E. Bulson, Jr., of Fort Wayne, Ind.; *Delegate,* Dr. S. D. Pisley of Philadelphia.

Pharmacology and Therapeutics—Chairman, Dr. H. C. Wood, Jr., of Philadelphia; *Vice-Chairman,* Dr. H. R. Slack of Atlanta, Ga.; *Secretary,* Dr. C. S. M. Hallberg of Chicago; *Delegate,* Dr. S. Solis-Cohen of Philadelphia.

Stomatology—Chairman, Dr. Schamberg of Philadelphia; *Vice-Chairman,* Dr. Branigan of Boston; *Secretary,* Dr. Eugene S. Talbot; *Delegate,* Dr. G. V. I. Brown of Milwaukee.

The Army Medical Bill.—The following resolution was offered by Dr. James Evelyn Pilcher, seconded by Dr. Henry O. Marcy, and unanimously carried, at the annual banquet of the American Medical Editors' Association, June 4, 1906:

Resolved: That the American Medical Editors' Association telegraph to the speaker of the House of Representatives that only the passage of the bill to reorganize the medical department of the army can save this country from disgrace in the eyes of the world and avoid a mortality in peace and war which shall put the entire nation to shame, and that as citizens and representatives of the medical press of the United States we urge that this bill in question be brought to passage and without delay.

Civil Service Examinations.—The State Civil Service Commission will hold examinations in all parts of the State June 30, 1906, for the following positions: Health Officer, Town of Minerva, Essex County; Orderly, Erie County Hospital, $540 and maintenance; Physician, State Hospitals and Institutions, $900 to $1,200 and maintenance; Pupil Nurse, Erie County Hospital. The last day for filing applications for these positions is June 25. The Commission has been unable to secure a sufficient number of eligibles for several of these positions, and qualified applicants have an excellent chance of appointment. Full information and application forms for any of the examinations may be obtained by addressing Mr. Charles S. Fowler, the Chief Examiner of the Commission at Albany. The United States Civil Service Commission announces the postponement to July 5-6, 1906 (in view of the small number of applications filed), of the examination scheduled for June 6-7 to secure eligibles from which to make certification to fill at least two vacancies, at $600 per annum each, with maintenance, in the position of medical interne, Government Hospital for the Insane, Washington, D. C., and vacancies as they may occur in any branch of the service requiring similar qualifications. The Department states that it reserves the right to continue or terminate appointment at the end of one year, or to promote the appointee at the expiration of that length of service. The United States Civil Service Commission also announces an examination on July 5-6, 1906, to secure eligibles from which to make certification to fill vacancies in the position of hospital interne (male) under the Isthmian Canal Commission, on the Isthmus of Panama, as they may occur. As an insufficient number of eligibles to meet the needs of the service resulted from the examination held on December 6-7, 1905, for this position, qualified persons are urged to enter this examination. Men only will be admitted to the examination, for which two days will be required. Each applicant for the Isthmian Canal Service will be required to submit to the examiner, on the day he is examined, a recent photograph of himself, taken within three years, which will be filed with his examination papers, as a means of identification in case he receives appointment. An unmounted photograph is preferred. The date, place, and name of examination, the examination number, the competitor's name, and the year in which the photograph was taken should be

indicated on the photograph. Age limit, twenty to thirty years on the date of the examination; salary, $100 per month, with quarters, but without board and washing. Only graduates of reputable medical schools having not less than a three years' course will be admitted to this examination. Applicants for either position should apply to the United States Civil Service Commission, Washington, D. C., for application Form 1312.

The New Bellevue Hospital Plans.—The State Board of Charities, through Deputy Attorney-General Graham, on June 9 made application before Justice Betts in Special Term for a peremptory writ of mandamus, directed to the trustees of Bellevue and Allied Hospitals, compelling them to submit their plans for hospital construction and alteration to the State board for approval. It was stated that the purpose of the provision for supervision by the State Board of Charities was to enable it to make suggestions as to changes and improvements in the plans looking to greater safety of the inmates and to see that modern improvements and conveniences were secured. Prior to the separation of Bellevue Hospital from the jurisdiction of the Commissioner of Charities these plans had always been submitted to the State Board, and the Commissioner of Charities still continued to submit plans for the buildings remaining under his jurisdiction. The hospital authorities, through an Assistant Corporation Counsel, opposed the application.

Meat Inspection in this State.—The New York State Health Department on June 5 issued an order directing local health officers to inspect immediately all slaughter houses and packing plants in the State. A resolution providing for the appointment of a committee of aldermen to investigate the conditions of the slaughter and packing houses in this city has been referred by the board to the Committee on Rules.

Denaturized Alcohol Bill Signed.—The President on June 8 signed the denaturized alcohol bill which provides that alcohol for use in the arts or industries and made unfit for drinking purposes shall be free from the internal revenue tax.

No Free State Antitoxin in New Jersey.—The New Jersey State Board of Health's bill providing for the manufacture and free distribution of antitoxin was vetoed on June 8 by Governor Stokes, on the ground that as some municipalities already supplied free antitoxin it would be unfair to these to use State moneys to furnish antitoxin to other communities that were less liberal.

United Hebrew Charities in Need.—The directors of this organization have announced that they will be obliged to terminate the work of the society on August 10 unless a deficit of $140,000 is made good before that date. The organization has been working on the East Side for thirty years and is spending now about $300,000 a year. The organization has 30,000 applications a year for help, and deals with 10,000 Jewish families annually.

To Increase New York City's Hospital Facilities.—The Board of Health has authorized Commissioner Darlington to ask the Board of Estimate for an appropriation of $1,000,000 to continue the additions being made to the contagious disease hospitals on North Brother Island, at the foot of East Sixteenth street, and on Kingston avenue, Brooklyn.

Yellow Fever at Havana.—That the recent outbreak of yellow fever near Havana has not been gotten altogether under control is shown by the development of another case on June 6 in the city itself. It is supposed that the patient became infected at Bolondron.

Hospital Carnival.—Beginning June 6 a ten days' carnival was held at East Orange in aid of the New Jersey Orthopedic Hospital and Dispensary of Orange.

Decrease in Mortality Rate in Chicago.—During the week ended May 26, 1906, there were seventy-two fewer deaths in Chicago than during the previous week. The 580 deaths reported represent an annual rate of 14.76 per 1,000 of population, a reduction of a little more than 11 per cent. from that of the preceding week, but still an excess of 24 per cent. over the corresponding week of last year. During the above week there were forty-five fewer deaths among children under five years of age, and fifteen fewer among persons over sixty years.

American Physicians in Japan.—Deputy Consul-General McLean of Yokohama has published a statement intended to discourage any emigration of American physicians to Japan. The consul says that the foreign community of less than three thousand persons is already well supplied with European and American physicians, and that the Japanese prefer medical men of their own nationality. All practising physicians in Japan are required to have government licenses, and it takes a foreigner about six months to obtain one, even if his credentials are good.

Testimonial to Dr. Bass.—On May 31 a banquet was given by the physicians of Lowell, Mass., to commemorate the fiftieth anniversary of the entrance into the practice of medicine of Dr. William E. Bass, the oldest practitioner in the city. An antique hall clock was presented to Dr. Bass as a remembrance of the occasion.

A New Quarantine Station.—Surgeon-General Wyman has obtained permission for the United States Public Health and Marine Hospital Service to establish quarantine and disinfecting stations at St. Lucia and Barbadoes. This is done so that vessels which have been passed at these ports may be allowed to enter the port of New Orleans without the customary period of detention.

To Fight Scarlet Fever in Chicago.—The Finance Committee of the Chicago City Council has granted an emergency appropriation of $10,000 to combat the present epidemic of scarlet fever.

American Academy of Medicine.—At the thirty-first annual meeting of this society held in Boston on June 2 and 4, under the presidency of Dr. D. C. Hawley of Burlington, Vt., the following officers were elected: *President*, Dr. Casey A. Wood of Chicago; *Vice-Presidents*, Drs. W. L. Estes of South Bethlehem, Pa., James A. Spalding of Portland, Me., Woods Hutchinson of Redlands, Cal., and Guy Hinsdale of Hot Springs, Va.; *Secretary and Treasurer*, Dr. Charles McIntire of Easton, Pa.; *Assistant Secretary*, Dr. Alexander R. Craig of Columbia, Pa.

Chicago Society of Social Hygiene.—A number of physicians, clergymen, and business men met in Chicago on May 28 and organized a Chicago Society of Social Hygiene. The object of this society is to combat the social evils of Chicago in a systematic way. Dr. Wm. T. Belfield was made temporary president, and Mr. Wm. Hallam was made temporary secretary.

North American Association of French-Speaking Physicians.—The third Congress of this association will be held at Trois-Rivières, Canada, on June 26, 27, and 28, 1906. The various French

medical societies of Canada and the United States have appointed delegates, and official representatives will also be present from France and the French medical societies. Among the latter will be Dr. H. Triboulet of Paris, who will deliver an address on alcoholism, Professor Proust, who will be the official delegate of the University of Paris, and Dr. Foveau de Courmelles, vice-president of the French Society for Hygiene. The subjects for especial consideration before the Congress will be: Alcoholism, The Hygiene of Infancy, and Tuberculosis. The president of the association is Dr. L. P. Normand of Trois-Rivières, and the secretary is Dr. C. N. De Blois of Trois-Rivières.

Obituary Notes.—Dr. Robert S. Ives of New Haven died of appendicitis on June 8, at the age of sixty-four years. He was a native of New Haven and was graduated from Yale College in 1864. He received his medical degree from the College of Physicians and Surgeons in New York in 1867. Dr. Ives left a son and a daughter. His wife died about eight years ago. He was the son of Dr. Levi Ives, long one of the leading obstetricians in New Haven; a grandson of Dr. Robert S. Ives, who was instrumental in founding the Yale Medical School; and the great-grandson of Dr. Eli Ives, a celebrated physician of his day and a surgeon in the Revolutionary War.

Dr. Hall Curtis, a retired physician of Boston, died on June 2 at his summer home in Beverley Farms at the age of seventy-one years. He was a graduate of Harvard University in the class of 1854.

Dr. James W. Duprée of Baton Rouge, La., died on May 25 in Cincinnati, O., at the age of sixty-five years. He received his medical education in the New Orleans School of Medicine and served as surgeon through the Civil War. He began the practice of medicine in Baton Rouge in 1867 and had been a prominent figure in medical circles for many years. He was president of the Louisiana State Board of Health, and for many terms was president of the Baton Rouge Board of Health. He had held the Chair of Anatomy, Physiology, and Hygiene in the Louisiana State University, and served in the State legislature for four years. He was appointed Surgeon-General of the Louisiana State Militia with the rank of brigadier-general. In 1880 he was elected president of the Louisiana State Medical Society.

Dr. T. R. Watkins of Memphis, Tenn., died on May 31, at the age of sixty-five years. He had served in the Confederate Army and had taken a prominent part in combating the various epidemics of yellow fever that have visited Memphis.

Dr. Frederick W. Deichman of Bristol, Conn., died on June 6, at the age of fifty-nine years. He was born in Germany and served as surgeon through the Franco-Prussian War. He received a medical degree from the New York University Medical School in 1877.

Dr. Wm. Jacoby of Mankato, Minn., died on May 31, at the age of sixty-eight years. He was a native of Indiana and received his medical education at the Western Reserve College at Columbus, O. He had practised in Mankato thirty-five years.

Dr. King R. Cutler of Houston, Texas, died on May 31, at the age of fifty-five years. Dr. Cutler went to Houston from Corpus Christi six years ago.

Dr. Donald McLean Barstow of this city, son of Dr. J. W. Barstow, died suddenly at Portland, Me., on June 9, at the age of forty years. He was graduated from the Medical Department of Columbia University (College of Physicians and Surgeons) in the class of 1892.

Obituary.

MARY PUTNAM JACOBI, M.D.,

NEW YORK.

Dr. Mary Putnam Jacobi died at her residence in this city on June 10, after a long and trying illness. She was a daughter of the late George Palmer Putnam, the founder of the New York publishing house of that name, and was born in London, August 31, 1842. She early conceived the ambition to become a physician, and in 1861 entered the Woman's Medical College of Philadelphia, having already been graduated as Doctor of Pharmacy in New York. After passing a year as interne in the New England Hospital in Boston, and two years in private practice in New York, she went to Paris in 1866 and entered the École de Médecine. She was the first woman ever admitted to this school, though Dr. Elizabeth Garrett Anderson of London, who entered later than she did, took a shorter course and so was graduated in 1870, a year before her. While in Paris Dr. Putnam was a regular correspondent of this journal. In a magazine article on "Women as Physicians," published in 1868, it was stated: "Miss Mary C. Putnam, who graduated in 1864, is now in Paris pursuing her studies. She was the first woman admitted to visit the School of Medicine in this city, and has recently, after a brilliant examination, been admitted as a student. She is the 'P. C. M.' correspondent of the New York Medical Record, who sends that journal such racy and graphic accounts of the medical world in Paris." She took her degree of M.D. in 1871, receiving the second prize for her graduation thesis.

On returning to this country she resumed practice in New York and at once won recognition from her male colleagues as a physician of great attainments. She was the first woman member of the New York Academy of Medicine and was the first woman ever sent as a delegate to the Medical Society of the State of New York. She was for ten years a professor in the Woman's Medical College of the New York Infirmary, and later a professor at the New York Post-Graduate Medical School and Hospital; she was physician to the out-patient department of Mount Sinai Hospital and was also attending physician to St. Mark's Hospital. In 1873 she married Dr. Abraham Jacobi of this city. In 1874 she founded and was elected first president of the Association for the Advancement of the Medical Education of Women. In 1894 she took up the gage in behalf of the ballot for women and delivered a memorable speech in Albany that year in support of a woman suffrage amendment to the State constitution. But her labors for her sex were not confined to public acts and speeches, and many women living to-day, in and out of the medical profession, will cherish the name of Mary Putnam Jacobi in grateful remembrance as that of a wise counsellor, a helper in the time of need, and one upon whom a sister's weight could rest when in distress and weary of the buffeting of the world, and of its temptations as well.

Dr. Putnam Jacobi was a woman of great mental grasp, of superior intellectual abilities broadened by a lifetime of serious study. She was a good writer and would doubtless have made a name for herself in general literature had she abandoned medicine for that field, as she was at one time early in her career tempted to do. Among her non-medical writings were "The Value of Life," a reply to Mallock's "Is Life Worth Living?", "From Massachusetts to Turkey," "Studies in Primary Education," and "Common Sense Applied to Woman Suffrage." In 1876

she won the Boylston prize at Harvard for an essay entitled "The Question of Rest for Women During Menstruation." In an article on the history of medical women in this country forming a chapter in "Woman's Work in America," published in 1891, there is a list of over forty titles of papers on medical subjects contributed by Dr. Putnam Jacobi to various periodicals and encyclopedic text-books.

Correspondence.

FIFTEENTH INTERNATIONAL MEDICAL CONGRESS.

(From Our Special Correspondent.)

DEVELOPMENT OF THE NERVOUS SYSTEM—STRUCTURE OF THE RED BLOOD CORPUSCLES—ACTION OF RADIUM ON THE EYE—THE PANCREAS AND FAT NECROSIS—PROTOZOAN DISEASES—INTESTINAL SURGERY—CONGENITAL DISLOCATION OF THE HIP—THE TREATMENT OF MYOPIA.

LISBON, April 29, 1906.

RAMON Y CAJAL of Madrid spoke on the histogenesis of the nervous system, basing his conclusions on work done by means of his reduced silver method. He found that in the embryo of the chick and other animals the axis cylinders preserve perfect independence in the course of their development, and concluded that there was no reason for abandoning the monogenetic theory of His. He considered that the neuron theory received additional support through these observations.

Albrecht of Frankfort discussed the composition of the red blood corpuscles. He said that the uppermost layer of the erythrocytes in vertebrates consisted of a lipoid substance (lecithin) which was particularly prominent among the mammals. This body had a particular affinity for oxygen, with which it could combine and in this way take part in the formation of hemoglobin. It could also unite with substances dissolved in the blood serum. The interior of the erythrocytes was composed of a more or less homogeneous fluid holding hemoglobin in solution. In order for the latter to be set free, destruction of the lipoid envelope and alterations in the inner fluid was necessary. The nucleus of the red cells probably took part in the formation of the lecithin and perhaps also in the production of hemoglobin.

Birch-Hirschfeld of Leipzig read a paper on the physiological and pathological action of radium on the tissues in general and on the eye in particular. He first gave a general review of what was known concerning the action of radium on the tissues and then took up its application to the tissues of the eye. As a result of what had so far been observed, it was not possible to expect much from the use of radium in ophthalmology. On the contrary, the development of conjunctivitis, ulcerative keratitis, or retinitis through the radium was to be dreaded. In trachoma a beneficial action was noted, but this was purely temporary. Further investigations in this field might yield more promising results, but for the present were not to be advised on account of the dangers involved.

Chiari of Prague took for his subject the pancreas and fat necrosis. He said that numerous observations had established the fact that necroses of fatty tissues were caused by the pancreatic juice through its proteolytic and lipolytic ferments. Studies in this connection had also shown that pancreatic juice brought about these changes outside of the pancreas as well. The question now arose how the pancreatic juice found an exit from the gland, and it appeared that the proteolytic ferment could dissolve pancreatic tissue itself. There was therefore autodigestion of the pancreas *intra vitam*. Autodigestion of the pancreas was accordingly to be regarded as a disease *sui generis*. The acute or hemorrhagic and gangrenous inflammations of the pancreas and pancreatic apoplexy were forms of autodigestion, caused either by trauma, local disturbances of circulation, interference with the excretion of the juice, or the effect of a "kinase." The treatment was purely surgical.

Laveran of Paris spoke of protective inoculations against protozoan diseases. He said that immunity produced through vaccination was closely allied to natural immunity and suggested the question whether the protozoan diseases such as malaria, pyroplasmosis and trypanosomiasis brought about an immunity or not. It was known that one attack of malaria did not confer immunity against subsequent infections, but Koch, who had observed the frequency of this disease among the native children in Java and German New Guinea and the resistance to infection manifested by the adults, concluded that the natives did acquire a form of immunity against the disease. In reality this immunity was only relative, however, and therefore one could not expect to protect human beings against the disease through the inoculation of a weakened virus, and all practical attempts in this direction had been without results. The only efficient protection was to be obtained through the prophylactic use of quinine. On the other hand, inoculation had been found very serviceable as a protective measure against Texas fever. The attempts of this sort in trypanosomiasis had so far not been very encouraging. Serum treatment had been found unavailing, and it was extremely difficult to obtain attenuated virus.

Varoncellos of Lisbon discussed gastroenterostomy and intestinal anastomoses in general. He said that gastroenterostomy was the most important measure to be considered in cases of stenosis of the pylorus or in those in which the symptoms of beginning stenosis were present. In cases of malignant stenosis gastroenterostomy should be done if extirpation was not possible. This could, however, always be effected if there were no adhesions, particularly posteriorly. In benign stenosis, gastroenterostomy was much to be preferred to all other procedures, such as pyloroplasty, for example. The speaker preferred von Hacker's method of posterior gastroenterostomy and always used sutures rather than the button, as the advantages of the latter did not outweigh its drawbacks. The speaker also condemned all procedures for this purpose accompanied by crushing, as he considered primary union of the cut edges of intestine and stomach by suture as essential. Intestinal anastomosis was of use principally in stenotic conditions of various sorts.

Kirmisson of Paris presented his views on the treatment of congenital dislocation of the hip. He said that, although the bloodless operation did not produce very satisfactory anatomical conditions, the functional results were very good. The figures published by different operators varied widely, however, from 20 to 85 per cent. of successes. The speaker agreed with Lorenz in thinking that 52 per cent. might be taken as a fair average. In future it was desirable to speak of successful reductions only when the head of the bone had been placed in its socket, presented the normal relation to the femoral artery, and was freely movable. In reference to the prognosis of bilateral dislocation it might be said that the result was never the same on the two sides, the one joint always proving to be less efficient than the other. In general, the rule might be stated that the age between three and five years was the most favorable for treatment. He preferred the gentle methods, like those of Pavi, to the more energetic procedures, and employed Lorenz's principle of operating in two stages. If no success followed repeated gentle attempts the bloody operation should be resorted to, and in carrying this out it was essential to secure adequate excavation of the acetabulum. In cases in which the age of the patient or the degree of deformity rendered the radical treatment impossible subtrochanteric osteotomy was a useful substitute.

Lorenz of Vienna, in speaking on the same subject, said that in spite of all the suggestions that had been made by others he still considered that the method he had described ten years ago was the best. For older children it was preferable to employ extension with preliminary abduction to the angle of 90°, and even more in some cases. In very young children abduction to 90° could easily be effected, but there was also a strong tendency to relapse. To correct this tendency it was necessary to use a high heel under the unaffected limb and during the night to provide some form of apparatus for maintaining the abduction. In older children the danger of relapse was slighter, but the correction was more difficult to effect. If difficulties were encountered, such as danger of fracture or unfavorable conditions about the joint, intertrochanteric osteotomy of the femur was the preferable procedure. From the practical standpoint the following groups of results could be distinguished: (1) Absolute cure both functionally and anatomically could be effected in about 50 per cent. of the cases. (2) In the greater proportion of the remaining 50 per cent. it was possible to secure an advantageous position of the head of the femur, especially if the musculature could be made efficient. (3) Only very few cases did not show a favorable result, but even in these the functional capacity of the limb could be increased by the treatment.

Hess of Würzburg discussed myopia and its treatment. His studies on the mechanism of accommodation had shown that even when the function was used to its maximum no increase of intraocular tension was produced, whereas the tension was markedly augmented through every contraction of the outer eye muscles. In consequence there was no physiological basis for the view that close work produced an increase in myopia through elevation of the intraocular tension, and therefore there was no objection to full correction of the myopia. Hess believed that the statements that strong lenses were injurious could not be substantiated, and he said that he had seen glasses of 20-23 diopters worn long periods of time without injury. When the stronger lenses were used even a slight error in centering them and in their distance from the eye might have a very marked influence

on the effect of the lenses. It was often observed that myopic patients were not able to use strong glasses that had been prescribed for them elsewhere, but that they were glad to use equally strong lenses selected according to Hess's rules. There was little divergence of opinion in regard to the treatment of myopia of 3-6 D., but in cases in which the error was only ½D. Hess did not employ the full correction because such patients could read well with only slight correction. In conclusion he said that the operative treatment of myopia was to be condemned.

OUR LONDON LETTER.

(From Our Special Correspondent.)

GENERAL MEDICAL COUNCIL—KING'S COLLEGE HOSPITAL—ELIZABETHAN FÊTE—CHARING CROSS HOSPITAL—MR. WHITELAW REID'S SPEECH—PROF. KOCHER ON GRAVES' DISEASE—LISTER INSTITUTE—"SWEATED INDUSTRIES" EXHIBITION—CHARGE OF NEGLIGENCE—ANTI-VACS IN PARLIAMENT.

LONDON, May 25, 1906.

THE General Medical Council opened its summer session on Tuesday. The President, Dr. Donald McAlister, perpetuates the example of his predecessors by delivering superfluous addresses. He opened this session by informing the councillors what every one of them knew, that the Act of 1886 has now been applied to the Empire of Japan, full details as to the curriculum and examinations of the Imperial University having been supplied through the foreign office. He ventured to say the council would probably consider the conditions amply sufficient to guarantee the efficiency of the Bachelors and Doctors of Medicine of Japan. All information went to show that our allies had wisely provided for medical education, and this explained the unparalleled efficiency and success of their military medical service in the recent war.

The president went on to say that two bills had been prepared for submission to parliament this session. One was to prohibit medical practice by companies, the other a similar dental restrictive measure. Considering that the pharmacists have lost their bill protecting them from companies' encroachments, I am afraid the two proposals of this council will be equally unsuccessful. The president said some of the disciplinary cases would bring home to the council the gravity of the situation arising from the unrestrictive exercise of the skilled professions by joint-stock companies. But it is not so much to the council this must be brought home as to parliament and the public. The council may do something to place obstacles in the way of the companies, and so may the existing law as to frauds and conspiracy. But will they? Experience proves that the only way of safe-guarding the public against ingenious evasions of the law is rigidly to enforce its provisions and where it is weak to strengthen it.

With regard to the University of Wales the president stated that the executive committee had considered the proposed supplementary charter giving power to grant medical degrees to graduates in arts and science and gave no objection to it. If the charter be obtained an act of parliament would be required to make the degrees registrable. There can be no doubt that the University of Wales would exact a high standard for its degrees but it would be well if it admitted only those candidates qualified to practise. If all the universities would join to effect this a good medical reform would be secured.

Nova Scotia is seeking reciprocity in recognizing medical qualifications, and the requisite order in council has been issued. The information required to decide what qualifications in Nova Scotia comply with the conditions demanded for registration. The matter cannot be settled this session.

It was decided to reduce the number of the committee on penal cases. The name of John Bate Bawden was removed from the register for acting on a society that canvassed for patients. The Glasgow University's degree in public health was recognized for registration. Yesterday the council resolved that the pharmacy bill as amended in the House of Lords (which allows companies to act as pharmacists) is fraught with obvious and extreme danger to the public, and that it would be inimical to the public interest to confer the privileges and powers of the sight testing (opticians') bill on persons other than those qualified in medicine and surgery.

King's College Hospital has basked in the smiles of society this week by reason of a great Elizabethan fête held under Royal patronage in the hall and grounds of Lincoln's Inn, lent for the occasion. No trouble was spared by the organizers to accomplish their purpose, which was to provide the most successful fête of the season for the benefit of the hospital's removal fund.

You know that a new site has been provided in South London by the generosity of the Hon. W. F. D. Smith. This site is twelve acres in extent and the design is to increase the number of beds in the new hospital to 600, for which subscriptions are coming in, though more slowly than is needed to meet the cost of building and up-keep.

H. R. H. Princess Christian opened the fair on Wednesday, the Lord Mayor the next day, and your ambassador to-day; all circles of metropolitan society put in an appearance. The stall-holders in the great hall included all ranks of the peerage from duchesses downward. The "Boke of ye Fayre" contains over 250 portraits of patrons, with literary and art contributions. In the grounds flowers and farm produce were to be bought at "the old Cross of Enfield," and the cup that cheers could be had at the "old Rye House," served by ladies connected with the medical staff. But the most striking view was on the terrace, where there was a realistic reproduction of Cheapside in the time of Queen Elizabeth, at which Countess Roberts, Lady Methuen, Lady Peel, and other ladies of rank, dressed in Elizabethan costume, presided as saleswomen. One stall, named after Sir Walter Raleigh and devoted to the sale of the weed, was presided over by Miss Ellen Terry and other famous actresses. In a specially erected theater some entertainment or other was kept going; on the first day an original travesty written by Mr. W. S. Gilbert, who took a part in it; on the other days, plays by Mr. Nigel and Mr. Cutter, besides dancing, lightning portraits, strolling minstrels, and the other attractions for a most elaborate fancy fair, among which I must name pavement sketches by Mr. Wylli, A.R.A., got up as a beggar with a wooden leg, and cat sketches by Mr. Louis Wain. With all this "society" seems satisfied and delighted. I hope it will prove a good thing for the removal fund, but what a pity it is people should want to bargain even for their help to charities. It would be so much easier to give the money spent on this Elizabethan fête—curious and interesting as it is. I cannot report the total returns, as the fête only closes to-night, but I hear that the first days were financially successful.

Your ambassador presided on Wednesday evening at a festival dinner in aid of Charing Cross Hospital. In the excellent little speech he made on the occasion, Mr. Whitelaw Reid said it always seemed to him a beautiful trait of the English character and of the character of all English-speaking people that they maintained such magnificent hospital systems and that largely by voluntary contributions. It was a direct link between the man who gave and the man who needed, and it seemed to him a priceless link to bind all together. Then, he continued, there was a poverty with London hospitals at the present time and he was informed that not more than one-tenth of well-to-do London householders contributed to hospital funds. But it was the interest of the well-to-do citizen to see that his hospital system was in good condition. Otherwise he had no security for the safety of his wife and children. The great progress which had been made in medical science was almost entirely dependent on the assistance given to the medical profession by hospitals. Charing Cross Hospital demanded support. Situated in the heart of the metropolis where street accidents and emergencies were numerous, during the past year it received 2,465 in-patients. Of 20,500 out-patients more than half were cases of accident or emergency.

At the close of the dinner contributions were announced amounting to £12,257.

The *Conversazione* of the Medical Society on Monday was a great success. The chief attraction was the oration delivered by Prof. Kocher of Berne on the Pathology of the Thyroid Gland. He exhibited a table of 165 cases on which he had operated. He divided them into three series: The first comprised ten cases of struma vasculosa, which began with Graves' disease, all ten being cured by operation. His second series consisted of sixty cases, described as a mild form of Basedow's disease developing on a preexistent goiter. He said forty-nine of these were cured and two others greatly ameliorated. His third series consisted of 106 cases of typical Graves' or Basedow's disease. Like so many continentals, he generally used the latter term, though he did acknowledge Graves. Of these 106 cases sixty-two he reported as cured, nine greatly ameliorated, seventeen others in a lesser degree ameliorated, and there were nine deaths. He had not lost a case when it was operated on early enough, and he thought a cure was always to be anticipated in such cases, but he enjoined a rather protracted preparatory medical treatment. A course of several weeks of iodide of potassium in small doses or of phosphoric acid with bodily and mental rest should precede the operation, which should be done in stages. Prof. Kocher does not like the term exophthalmic goiter, as it

specifies the least constant of the three conditions. He suggested "heart goiter" as a substitute.

On the proposition of Sir Victor Horsley a vote of thanks was carried by acclamation.

The authorities of the Lister Institute of Preventive Medicine have made liberal arrangements for the accommodation on their premises of the Professor of Protozoology recently appointed by the University of London, an assistant, and six research students. Three laboratories will be placed at his disposal with the use of the library and a lecture theater. The Institute will further provide a sum of £250 for equipment, together with annual grants for the salary of the assistant, apparatus, and up-keep, amounting in the first instance to £150.

An exhibition of "Sweated Industries" has been organized by the *Daily News*, and the revelations are calculated to give the visitors heartaches. It seems terrible to see women and girls showing the manner in which they earn a penny an hour and to be assured that some toil for seventeen hours a day to make 12s. or 14s. a week. It is difficult, no doubt, to cope with home labor compared with that in factories, but our politicians would be better employed in thinking out such problems than in pandering to the trades unionists and encouraging picketing, which often means violence as well as robbery.

Dr. Fenton of Chelsea Hospital for Women and his former house surgeon have had to defend an action for negligence based on the assertion of a patient who had been successfully operated on that she was not told when leaving that she must return to the hospital in two months to have an instrument removed which was therefore left for eighteen months. Evidence was given that she was told to attend as an out-patient two months later, and that the routine of the hospital would prevent her from leaving without that explicit direction. The jury returned a verdict for the doctors, adding that in such cases written instructions should be given. The judge said he thought the suggestion a very wise one, among other reasons for the protection of the hospital in case of such questions arising.

Mr. Burns, as president of the Local Government Board, has been a good deal heckled by the anti-vacs in the House, but so far has maintained his position. To one tiresome questioner who repeated part of his query of the previous day he retorted, "I am not now answering yesterday's questions." The war minister was also questioned about the statistics of deaths from smallpox in the armies in Egypt and India during twenty years—1881 to 1900—compared with those in Leicester during the same period. Mr Haldane professed not to see the use of procuring those statistics, but if the figures for 1901-4 were of any use to the questioner they were—for the Indian and Egyptian troops 163 admissions to hospital for smallpox with twenty-one deaths—for Leicester, 740 admissions, with thirty deaths.

A DEVICE FURTHERING THE TECHNIQUE IN RADICAL OPERATIONS FOR CANCER.

To the Editor of the Medical Record:

Sir:—While the cause of cancer remains an open question, any procedure having in view the localization of the byproducts of the growth must be worthy of consideration. In breast amputations for malignant tumor, for example, wide dissection is the present rule of practice, and it is regarding the care of the discharge in cases of malignancy presenting ulcerous fungoid growths that the procedure I present is intended. The device applies to any form of open-surface cancer and consists in a sealing up of the ulcer with wax or paraffin as a preliminary to the subsequent incision for removal of the growth. The method is as follows: After the ordinary preparation of the case, the assistant nurse or the operator with temporarily gloved hands is to dry carefully the ulcerous mass. Melted paraffin or beeswax is to be freely poured over the open surface. Carried out under anesthesia, as the patient lies upon the table, the final cleansing of the area affected is not interfered with. Cooling and solidification taking place quickly, "cancer juice" and fungous granules are kept confined within the mass, thus insuring against the escape or later transfer by contamination of the surgeon's fingers to the operative wound.

Frederic Griffith, M.D.

New York.

A Hitherto Disregarded Source of Pentosuria.—Von Jaksch points out that the ingestion of large quantities of fruit juices may give rise to pentosuria, and advises practitioners never to omit the fermentation test in cases that give a positive Trommer's or Nylander's test. Urine containing pentose is not fermented by yeast, but gives an osazon with phenylhydrazin.—*Centralblatt für innere Medizin.*

Progress of Medical Science.

New York Medical Journal, June 2, 1906.

Do Central Tracts of the Nervous System Regenerate?—L. Pierce Clark submits the following conclusions in answer to the query of his paper: (1) Animal experiments fail to provide conclusive data that central tracts of the nervous system ever regenerate so that the former function is restored. In warm-blooded animals, and in the human species in particular, an abortive attempt on the part of the cord to regenerate is largely if not solely confined to fibers of undoubted peripheral type. (2) Histological analysis of cases of hemisection, compression paraplegia, and myelitis, and the like destructive lesions of the cord fails to show positive evidence that actual structural regeneration of axis cylinders ever occurs in the central nerve tracts of the human spinal cord. In case of complete division of the brain and spinal tracts there is simply degeneration, followed by sclerosis. (3) A most acceptable reason for nonregeneration of such tracts is shown in that the compressed nerve fibers do not possess a neurilemma sheath, from which nerve regeneration mainly if not solely occurs. This lack in cord and brain tracts, in contrast to the regenerating peripheral nerves, is due possibly to a difference of embryological origin for these two structures of the nervous system. (4) The cases cited by Stewart and Hart (quoted in the paper) for cord regeneration either do not fulfill the conditions of test, being merely hemisections, or, the evidences for regeneration are not definite or convincing. The two suture cases reported by Stewart and Hart and Fowler are good illustrations of this type. (5) In cases of complete transverse division of the cord there is no sufficient justification either from experimental or clinical data to warrant suture of the spinal cord in an attempt to cure the defect.

Acute Abdominal Symptoms from Chronic Conditions.—F. D. Donoghue gives the detailed history of two cases. Case 1 was that of a boy of nine years with a sarcoma of the transverse mesocolon and growing into the stomach with many metastases in glands and liver. Operation was followed by general sarcomatosis with death in four and a half months. During the course of the disease, pain, emaciation, and anemia were wanting, and as far as known there had been no continued fever. The first symptoms were abdominal pain and soreness, and when the boy was first seen a few days later a tumor was located in the epigastrium. The case shows that sarcoma of the mesenteric or retroperitoneal glands does not give the classical symptoms usually ascribed to sarcoma of the intestinal tract. Case 2 was that of an ovarian tumor in a girl of twelve with torsion of the pedicle, giving symptoms strongly suggestive of appendicitis. Operation in this case was followed by recovery.

Diagnosis of Tabes in the Preataxic Stage.—A. D. Young would first take the age of the patient into account. Tabes usually begins between twenty-five and fifty, the most common period for specific infection. When children present the disease, it is the result of inherited syphilis. The most common symptom during the preataxic stage is loss of the patellar reflex. Hardly less constant are the lancinating pains. Another symptom of importance at this period is the Argyll-Robertson pupil. Toward the later stage of this period comes the static ataxia. Incidents in the course of the disease are symptoms referable to the bladder, rectum, and sexual functions. Finally the author considers nerve atrophy, which he maintains is probably more common than statistics would indicate, and is sometimes the earliest sign. It may appears years before the ataxia, and can often be detected long before the vision begins to fail. When suspicion is aroused the eye fundus should be carefully examined, and if optic nerve atrophy is present, this fact should be given considerable weight in arriving at a diagnosis. Blindness usually supervenes in about three years.

Journal of the American Medical Association, June 9, 1906.

The Cause of the Heart-Beat.—W. H. Howell gives an elaborate historical review of facts and theories as to the causes and mechanism of the heart-beat, and critically discusses the factors in the problem. From this study of the data so far as known, he concludes that the myogenic theory is the most probable of any that have been offered so far. It does not explain satisfactorily, however, the phenomenon of the coordination of the heart-beat which can be disturbed by puncture of a particular region in the ventricular septum, although

this is not better explained on the neurogenic theory. As regards the further deeper question of the initial cause of the heart-beat, the most hopeful line of investigation has been that of late years, dealing with the action of the inorganic constituents of the blood on the heart-beat. He objects to being quoted as holding that the calcium ions constitute the inner stimulus; the rôle of the calcium and sodium salts, according to the provisional hypothesis he has chosen to guide his investigations, consists in replacing the potassium and converting a part of the store of stable, energy-producing material in the normal heart into an unstable easily dissociable compound, thus producing the contraction. This hypothesis, as he shows more in detail, accounts for some of the most characteristic features of the heart-beat. Whether it or any other of those proposed be correct, we may congratulate ourselves on the acquisition of the knowledge gained by the labors of the experimental physiologists of the last quarter of a century, that the inorganic salts of the blood and lymph play an essential rôle in the production of the heart-beat.

Artificial Gastric Ulcer.—F. B. Turck gives a history of experiments by himself and others on the induction of artificial ulcer of the stomach. He notes particularly the failure of local irritation by mustard oil injections to produce ulcer and his success in a few instances in producing peptic ulcer in guinea-pigs by long-continued close confinement without exercise and with limited light and ventilation. These few successes suggested the possibility of systemic conditions being important factors, and that alterations in the toxic state of the alimentary canal with consequent change in the blood might play some part. Experiments were begun with *Bacillus coli communis* because it is an organism found abundantly in the intestines and which flourishes in catarrhal and atonic states of the stomach. Although no difference could be detected, morphologically or culturally, between strains isolated from the stools of normal individuals and those from cases of gastric ulcer on account of there being a possible difference in their pathology the latter were selected, and the toxin of *B. coli* being intracellular, suggested the use of killed as well as living cultures. In the earlier experiments the bacteria were introduced directly into the circulation, but in the later ones they were fed by the mouth, thus approaching more nearly the natural conditions. Meat extractives were fed in some cases, as it was observed that *B. coli* grew most abundantly in media containing meat extractives. Positive results were obtained in every experiment in which cultures of *B. coli* were fed to dogs, the number and extent of the ulcers varying from a few ulcers in the duodenum to numerous typical peptic ulcers of the stomach. In order to ascertain the percentage of gastric ulcer in dogs not experimented with, the stomach and intestines of 189 healthy dogs killed at the dog pound and of 82 dogs dying from disease, injury, poisoning, etc., were systematically examined. In no case was a peptic ulcer found, and it appears, therefore, that the percentage of its occurrence must be very small. Turck thinks that a dual condition is indicated in the production and persistence of these ulcers; a toxic condition overcoming natural resistance and possibly some chemical substances formed within the alimentary tract which when absorbed may neutralize the protective bodies in the blood and tissues, resulting in autocytolysis. We have in these results, the author holds, a positive etiological factor of gastric ulcer, and have now a firm basis for the unraveling of the finer or underlying etiology of peptic ulcer.

Trypsin in Malignant Growths.—W. A. Pusey has followed the suggestion of Beard of Edinburgh, and tested the effect of trypsin on seven cases of inoperable carcinoma and one of inoperable sarcoma. In some cases the injection caused little pain and no subsequent irritation, in others abscesses formed discharging, when opened, a thick, sticky, almost transparent serous fluid containing broken-down cheesy masses and leaving unhealthy appearing sinuses, sometimes idolent and slow to heal. Local accidental infection, Pusey thinks, could be excluded, as strict asepsis was employed. In one case of circumscribed carcinoma in the pectoral muscle, distinct benefit followed the injections. After the opening and discharge of the abscess the growth disappeared as if digested and the opening is now almost healed. In the other cases Pusey believes the injections did harm. In several instances after large injections, patients had chills. There were no other immediate constitutional effects, but in all patients who have had numerous injections, cachexia has developed and failure has been more rapid than before. Unless there was prospect of destroying a localized mass by a few injections, as in the one case mentioned, he would not now feel justified in using the remedy.

The Lancet, May 26, 1906.

Saline Injections in Cholera.—F. C. McCombie records a mortality of 23.8 per cent. out of 105 cases, although four of the cases subsequently died, two from dysentery and two from tetanus. Other and usual remedies were administered, but if reaction did not appear, saline injections were given in the usual manner (105-110°), but in the subcutaneous tissues over the axillæ breasts, and epigastrium. The resulting swellings were firmly rubbed to promote absorption. The solution was used freely, some patients receiving as much as nine pints. The author declares that previously unfavorable results from this method have been due to insufficient quantities of fluid injected. With ordinary antiseptic precautions he had only a few cases of abscess following injection and unfortunately three of tetanus, but each of these had septic wounds elsewhere at the time which would have provided a suitable nidus for the *Bacillus tetani*. One patient died on the fourth day after receiving his injection; he had sores due to scabies. One woman had ulcers on her leg and died three weeks after her cholera treatment, whilst the third, with an ulcer of the vulva, succumbed to lockjaw after seventeen days.

The Immediate Treatment of Extensive Wounds on Field Service.—C. A. Gill comments on the lessons taught by the recent wars in South Africa and the far East. He declares that the problem of field surgery is reduced practically to (1) arresting hemorrhage, (2) preventing shock, and (3) preventing sepsis. He maintains that the medical officers should always carry a freshly made morphine solution instead of tablets. The soldier's water bottle provides for the establishment of an antiseptic solution, and he himself has a first field dressing. The Japanese soldier carries also his own antiseptic tablets. The routine to be followed may be thus summarized: (1) The immediate application of an antiseptic lotion to a large wound. (2) The provision of the necessary antiseptic, the addition of tabloids of perchloride of mercury to the first field dressing packet, is suggested. (3) Following the first dressing a period of rest may be allowed which is highly convenient to the medical staff and conducive to the wellbeing of the patient. (4) Removal by ambulance transport to field hospital where operation may be undertaken on a patient whose vital powers have largely recovered from the shock consequent on his wounds.

Hematoma of the Ovary and Certain Other Closely Allied Conditions.—Clinical histories of eight cases are given by H. W. Wilson. All were operated on and all recovered. The author divides these cases into two groups: First, bleeding into a preexisting cavity and second, bleeding into the ovarian stroma. Such accidents occur in young women whose pelvic organs are at the height of their functional activity and whose tissues are exceedingly well nourished. In some instances there is a condition of old salpingo-oophoritis. It may be that the tough and thickened peritoneum on the ovarian surface prevents the intraperitoneal rupture of the follicle. Several blood cysts may thus form. Accidents are naturally more liable to occur at or about the menstrual period. Certain diagnosis is almost impossible. The two cardinal symptoms are abdominal pains and uterine hemorrhage. Vomiting and collapse may follow. The shock in cases without intraperitoneal hemorrhage is very profound and out of proportion to the severity of the actual lesion. Pelvic examination is unsatisfactory on account of abdominal rigidity. The slight cases may clear up in a short time under complete rest; but cases with pronounced symptoms call, of course, for immediate laparotomy.

British Medical Journal, May 26, 1906.

Heterochromia Iridis.—Referring to a case recently reported, R. H. Wellington explains the condition by stating that the *substantia propria* which is the ground substance of the iris has many connective-tissue corpuscles found in it, many of which contain, except in albinos and blue eyes, yellowish-brown pigment granules. The color of the iris varies according to the number of these pigmented connective tissue cells and to the amount of the pigment granules present in them. The posterior layer of the *substantia propria* is made up of polyhedral cells filled with dark pigment granules, except in albinos, where there are no pigment granules. Now, in blue eyes this posterior layer is the only pigmented part of the iris, and this is also the case in all newborn children; hence, we are all born with blue eyes. Such an iris appears blue because its dull tissue is

viewed on dark ground—that is, on the pigmental epithelium of the posterior surface. It appears, therefore, that if no pigment is in the eye at all, then the child is born an albino; if the pigment is limited to the posterior layer of the epithelium, as it is at the birth of us all, it gives the blue eye; and finally, if pigment is ultimately deposited in the anterior layer, it changes the eye from a blue one to the various shades we see from day to day, depending upon the amount of pigment deposited here as in other parts of the body. In heterochromia iridis there is a local deposit of pigment instead of uniformity throughout the iris. W. C. Louter also refers to this abnormality, and gives brief notes of nine cases coming under his own observation. None of the patients complained of any visual disturbances.

Very Early Conditions of Cancer of the Tongue.—H. T. Butlin gives the notes of seven cases, in which four distinct conditions were recognizable in the early stages of the disease. These are described as follows: (1) A flat very slightly raised smooth, red plaque feeling like a thin piece of gristle in the surface of the tongue, not thicker than an ordinary copper coin, looking and feeling very much like the ordinary primary specific lesion; (2) a white warty growth not ulcerated and scarcely indurated at its base; (3) a slight thickening and hardening of a leukoplakic area, rather distinguishable to feel than to sight, possibly an earlier stage of (1) and (4) a nodular plaque, red, and commencing to ulcerate, with indrawing of the surrounding tissues. In general, the author says that he has been in the habit of apportioning three stages to the development of the large majority of cases of cancer of the tongue. First of all we have predisposing conditions such as leukoplakia, ichthyosis, chronic superficial glossitis, which may exist for many years without the occurrence of cancer; but which undoubtedly render the individual much more liable to cancer than are individuals in whom the tongue is healthy. Then there ensues precancerous states as warty growths, thick plaques, sore places, which are not actually cancerous, but which inevitably proceed to cancer unless they are completely removed or destroyed. Finally we have actual cancer in one of its various forms, when it is obvious to an educated surgeon, and ought to excite suspicion in the minds of persons who are not experts. A colored plate and some section photographs accompany the paper.

Early Recognition of Cancer of the Breast.—G. L. Cheatle describes his method of examining the breast in a suspicious case, calling attention to methods of palpation and to the significance of retraction of the skin, flattening of a part or of the whole of the normal curve of the gland, the presence of enlarged glands in the axillary and supraclavicular regions, and retraction of the nipple and hemorrhage therefrom. A series of photomicrographs illustrates varieties of tissue found in operation. Some of the specimens removed may be of doubtful nature. We may find an epithelial activity, cells undergoing a somatic metosis. The condition suggests an early stage of cancer, but in reality it is not, although the author believes that this change in the alveoli which may become filled with papillomata may form one of the sources of origin of the so-called "duct cancer." The papillomatous changes above referred to may be much in evidence, but are occasionally found in women who have complained of no mammary symptoms whatever. Lymphocytes and plasma cells around the margin of the part removed for microscopic diagnosis are of value as indicating cancer only when they are seen in overwhelming numbers and crowding into and among the cells of the obvious lesion. We may overlook cancer, mistaking epithelial cells of the disease which have been so altered by inflammatory and toxic changes that they resemble connective tissue or inflammatory cells. Sometimes there are unusual changes in the staining properties and size of the fibrous tissue portions. Finally there is the early condition of cancer itself. Its microscopical appearance fortunately, as a general rule, is unmistakable, the epithelial cells invade the breast and the fat in its immediate vicinity, although their invasion is not advanced enough to produce retraction of the skin or to flatten the normal curve. The author's course in a doubtful case is as follows: An elliptical shaped piece of skin is mapped out, measuring three inches at its widest point, which is immediately over the suspected area. This piece is left untouched, but the skin around it is undercut in all directions, and that half of the breast which contains the suspected area is excised, together with the underlying part of the fascia covering the pectoralis major, and the elliptical piece of skin comes away undisturbed, with the parts thus removed The resulting cavity is then soaked with a 1 to 500 watery solution of perchloride of mercury, the wound is sewn up and temporarily covered over with a layer of gauze during the macroscopical examination of the suspected area, and if cancer is evident, gloves and instruments are changed and the breast at once removed.

Propagated Cancer.—E. F. Bashford contributes an illustrated paper on this subject. His experiments illustrate the identity of the sporadic malignant new growths of the mouse in all their anatomical features with those of man and the reproduction of the gross morbid anatomy of malignant disease as met with in the human subject in the artificially-propagated cancer of the mouse. Although malignant new growths are far from rare in these animals, he has found it difficult, in fact, exceptional, to obtain a growth which can be propagated with certainty in a large number of animals for long periods. The tumors which result from the subcutaneous implantation of cellular grafts in mice are usually of an irregularly rounded form, and show but little tendency to infiltrate deeply into the subjacent tissues. They are, however, highly malignant. Metastasis follows the development of experimental tumors in the subcutaneous tissues, peritoneum, and other localities. Microscopical emboli of cancer cells are very frequent in animals whose lungs appear to the naked eye free from secondary deposits, but enormous metastases replacing almost the entire respiratory area are not infrequent when animals are allowed to live for a longer time. The author's experiments give conclusive evidence that a specific cachexia or symptomatology do not exist in mice. He declares that it is certain that the early diagnosis of cancer and its successful treatment depend, not on insistence on the search for supposed early symptoms of the disease, but on the recognition by the practitioner of the absence of symptoms apart from an anatomical lesion of minute dimensions.

Berliner klinische Wochenschrift, May 21, 1906.

A New Method of Catgut Sterilization.—Karewski says that in spite of the very considerable number of methods which have been devised for sterilizing catgut no procedure has yet been perfected by means of which it is possible to secure an altogether satisfactory product. He states that after a great deal of experiment the following plan of preparation has been elaborated in his clinic. The object was to prepare the catgut without the use of any antiseptic or the addition of any substances likely to prove irritating to the tissues, and without impairing its tensile strength and elasticity. It was, furthermore, to be preserved in such a container as to make sterilization of this possible by boiling, and permitting division of the catgut into lengths as required without handling with the fingers. The method is described as follows: The catgut is boiled first in glycerin, after which it is soaked in ether and alcohol. It is then placed in glass tubes having a constriction at one end through which one end of the thread is passed and knotted. The tubes and their contents are sterilized by being subjected for twenty-five minutes to the vapor of 70 per cent. alcohol at a temperature of 70°C., a suitable autoclave for this purpose being described. The tubes are sealed at one end and are then filled in vacuo with absolute alcohol containing 1-3 per cent. of glycerin; after which the other end is also sealed, and the tube is heated again during one hour at a temperature of 103°C. Catgut prepared in this way is absolutely sterile, as was demonstrated by a very extensive series of bacteriological tests, and keeps indefinitely without impairment of its physical properties. Before use the tubes may be sterilized if it is desired by boiling in soda solution for a short time, without injury to the catgut. The author details at length the numerous advantages which, he believes, pertain to this method of sterilization. When the catgut is to be used the tube is broken at the constricted portion and the knotted end remaining in the smaller fragment enables any desired quantity to be withdrawn without subjecting the unused portion to any external contact. What is left in the container may be kept sterile by immersing the tube in 70 per cent. alcohol.

Münchener medizinische Wochenschrift, May 22, 1906.

The Diagnosis of Congenital Stenosis of the Small Intestine.—Walz describes a case of atresia of the duodenum combined with horseshoe kidney. He concludes that the occurrence of such deformities is due to a developmental defect as shown in this case by the presence of the abnormality of the kidney. A feature of importance from the diagnostic standpoint is that even in complete atresia of the duodenum meconium may be passed. The addition of constituents of the liquor

amnii is not necessary for the formation of yellow meconium. In every case of persistent vomiting of the new born the author considers that a microscopical examination of the meconium should be carried out as the operative treatment of intestinal atresia has a favorable outlook only if the diagnosis is made early. If there is no spontaneous passage of meconium the effort should be made to obtain some by a rectal irrigation. If no lanugo hairs are present in the meconium the conclusion is justified that a complete intestinal occlusion arising before the fifth month of development, must exist. This diagnosis is corroborated by the absence of squamous epithelium and fat droplets from the meconium.

Criminal Abortion.—Schickele says that this practice is becoming more and more common in Germany, and describes a number of illustrative cases to show some of the methods of instrumental abortion employed. In order to determine whether the abortion is a criminal or a natural one, he says that it is of importance to examine the external and internal genitals for fresh lacerations or other evidences of trauma. If the fetus is expelled without hemorrhage and without pain the induction of criminal abortion should be suspected. If the fetus presents injuries such as would be effected by the introduction of instruments into the uterus the nature of the abortion is revealed. The occurrence of severe infection immediately or shortly after a miscarriage is also strong evidence in favor of the assumption of an illegal manipulation. The author discusses the conditions which lead to the commission of this offense, and states that it should not be as harshly judged as is usually done.

The Treatment of Acute Otitis Media.—Scheibe presents an analysis of the etiology and therapeutic results obtained in a series of 527 cases of otitis media observed in private practice. The treatment employed may be summarized as follows: Acute middle ear disease without perforation is first treated either with the catheter or with the Politzer method. If the mastoid is sensitive the ice bag is applied. In addition rest and abstinence from alcohol are prescribed, and if there is an acute nasopharyngitis this also is treated. If the pain increases and there is bulging of the drum membrane, increasing tenderness over the mastoid, or fever with diminution in hearing, paracentesis is practised. If discharge is present the meatus is daily washed, irrigated with warm 4 per cent. boracic acid solution, Politzer's method is used and the meatus is insufflated with boric acid powder and is plugged with cotton. The ordinary systemic measures are also taken, and if there is evidence of involvement of the mastoid, as is shown by swelling behind the ear or bulging of the posterior wall of the meatus, the process is opened. The paper also contains a detailed analysis of the different groups of cases encountered.

Deutsche medizinische Wochenschrift, May 24, 1906.

Internal Hemorrhage Following Ectopic Gestation.—Busalla in discussing this subject states that the rapid diminution in the volume of circulating blood attending abdominal hemorrhage is accompanied by a prompt fall in blood pressure with all of its consequences. As a result the cerebral terminations of the cardiac accelerator nerve are stimulated and the heart action becomes rapid. The small size of the pulse, the facial pallor, the coldness of the extremities, and the fainting are other manifestations due to the reduction in the volume of the circulating blood. The vomiting and abdominal pain are caused by the peritoneal irritation induced by the shed blood. This sequence of events does not always follow, however, and occasionally the diagnosis must be made in spite of a pulse that appears incompatible with concealed hemorrhage. The author describes a case of this nature in which, although the other symptoms strongly suggested rupture of an ectopic gestation, the pulse was regular, soft, moderately full and only 56 to the minute. In spite of this condition of the pulse a laparotomy was performed and a ruptured tube with about two liters of partly fluid blood free in the abdominal cavity were found. The patient made an uneventful recovery, the pulse going as high as 104 on the day after the operation, but after that remaining between 60 and 70.

Operation in Barlow's Disease.—Riese advocates operative treatment of the subperiosteal hemorrhages that form so conspicuous a feature of this condition. Although surgical intervention has been considered dangerous in this disease on account of the risk of secondary hemorrhage, the author does not consider that this possibility involves very grave hazard. He recommends incision through the soft parts and periosteum about the affected extremities of the bones in order to secure free drainage. He describes a case in which this procedure was carried out with great success, and states that he has used it in other instances with equally satisfactory results. Moderately free incision followed by drainage is to be preferred to simple aspiration. Surgery is to be recommended only in the graver cases, however, as the less severe forms of the disease promptly respond to suitable dietetic treatment.

The Pancreas and Diabetes.—Herxheimer expresses the following view in regard to diabetes, and particularly concerning the participation of the islands of Langerhans in the causation of the disease. The cells of the pancreatic acini in addition to the external secretion produce another substance controlling carbohydrate metabolism. The islands are formed from the parenchyma cells and gradually lose their connection with the external secretion. They are particularly active, however, in producing the internal secretion, a function for which they are well adapted through their richness in capillaries. In diabetes there is impairment of function of both components of the pancreas, but the impairment of function of the islands is of the greater importance. The new formation of the cell islands in diabetes therefore represents a regenerative process of the highest order. It is still impossible to determine exactly what type of injuries affect the pancreas in this way, but in part of the cases, at least, arteriosclerosis, especially of the capillaries of the cell islands, may be at the bottom of the process.

French and Italian Journals.

Tuberculous Appendicitis.—Gabriel Hérisson in speaking of the diagnosis of this affection states that in the majority of cases it is difficult and sometimes clinically impossible. Aside from those cases of appendicitis which are never detected until autopsy, the writer believes that ordinarily the clinician makes a diagnosis of appendicitis not recognizing the tuberculous nature of the trouble which the miscroscope alone reveals. However, there are a number of symptoms and etiological conditions, which, if carefully observed and judiciously interpreted, may lead to an exact diagnosis. Diarrhea is common in tuberculous appendicitis, but exceptional in simple appendicitis. This symptom is not constant, but when it is present it is of the greatest value. The presence of inguinal ganglia is of only slight value. Far more important is the induration of the cecoappendicular ganglia. Frequent relapses, especially when they are separated by incomplete remissions without entire subsidence of the phenomena, are far more characteristic of tuberculous appendicitis than of ordinary appendicitis. The personal and family history of the patient should be considered. The method of serodiagnosis is valuable. The prognosis of tuberculous appendicitis is doubly grave, for not only the disturbance of the appendix itself has to be considered, but also its tuberculous nature.—*Gazette des Hôpitaux, Civils et Militaires*, April 14, 1906.

Arterial Poisons and the Etiology of Atheroma and Arteriosclerosis.—Maurice Loeper states that atheroma and arteriosclerosis may be considered clinically as the result of slow or prolonged toxic irritations of arterial tissues. Recent investigators who have conducted experiments on some of the lower animals, have isolated from the supposed poisons substances with an action especially sclerosing or inflammatory, and others with a veritably calcifying action. The first lead to the formation of sclerous endarteritis, the second group cause lesions of calcification very analogous to certain alterations of the middle coat of the human artery. Future investigations will show if there are two groups of different causes to be considered in the double process of human arteriosclerosis and atheroma.—*La Presse Médicale*, April 14, 1906.

Affections of the Skin Most Often Associated with Syphilis.—Thibierge speaks of certain cutaneous affections which tend to confuse the diagnosis of syphilis. Pityriasis rossa often appears coincidently with the secondary lesions of syphilis and resembles roseola. In such cases other specific lesions should be searched for, especially those of the mucous membrane. Various forms of erythema are observed principally in changing seasons in young subjects. These lesions may or may not be accompanied by infiltration and exudation; they may vary from a simple red spot to erythema bullosum. The preceding history of the patient must be investigated. Finally the itch sometimes appears in these cases, and former evidences of syphilitic infection must be carefully searched for.—*Journal de Médecine de Paris*, April 15, 1906.

Book Reviews.

Histological Studies on the Localization of Cerebral Function. By Alfred W. Campbell, M.D., Pathologist to the Asylums Board in the County of Lancaster. Published by aid of a subsidy from the Royal Society of London. Cambridge: The University Press, 1905.

Of this magnificent and scholarly work, which represents a large expenditure of well-directed energy and time, we cannot in the space at our disposal give anything like an adequate notice. The scope of the book is best indicated by the titles of the various chapters: 1, material and methods of examination; 2, general remarks on cell lamination and the arrangement of nerve fibers in the cerebral cortex; 3, the precentral or motor area; 4, the postcentral or sensory area and the intermediate postcentral area; 5, the visuosensory and visuo-psychic areas; 6, the temporal lobe and the auditory areas; 7, the limbic lobe; 8, the parietal area; 9, the intermediate precentral area; 10, the frontal and prefrontal areas; 11, the island of Reil.

The material, on which the author's studies are based, was derived from three sources: The normal human; this consisted of three cerebral hemispheres completely examined for fibers only, and two hemispheres partially examined for nerve fibers and nerve cells. 2. The normal comparative; this consisted of the right cerebral hemisphere of a chimpanzee, completely examined for nerve fibers and partially investigated for nerve cells; the left hemisphere of another chimpanzee, completely examined for fibers only; and the right hemisphere of an orang, completely examined for fibers only. 3. The pathological; this consisted of two brains from cases of amyotrophic lateral sclerosis, seven from cases of amputation of one or other extremity, three from cases of tabes dorsalis, and one from a case of old-standing capsular lesion; and the occipital lobe was examined in two cases of old standing blindness. An Addendum contains the result of further investigations on the brains of the cat, the dog, and the pig. At the end of each chapter there is a valuable summary, which will be appreciated by those who have not the time or the inclination to follow the author through the many histological details with which the book naturally abounds. There is also a list of bibliographical references at the end of the chapters; and the volume closes with a complete index of authors and subjects. The book is exceedingly readable, the author's claims are modestly put forth and are more than substantiated, and due recognition is given to the work of colleagues and previous observers.

The Diseases of Infancy and Childhood; Designed for the use of Students and Practitioners of Medicine. By Henry Koplik, M.D., Attending Physician to the Mount Sinai Hospital; Formerly Attending Physician to the Good Samaritan Dispensary, New York; Ex-President of the American Pediatric Society; Member of the Association of American Physicians, and of the New York Academy of Medicine. Second Edition, Thoroughly Revised and Enlarged. New York and Philadelphia: Lea Brothers & Co., 1906.

In this new edition of Koplik's "Diseases of Infancy and Childhood" the general plan of the original work remains unchanged; but the various sections have been revised and some of them have been entirely rewritten. This latter is particularly apparent in those parts of the book devoted to the subjects of Infant Feeding and the Diseases of the Newborn. The section dealing with Infant Feeding covers the ground very fully, and is one of the most valuable chapters in the book. The author gives his own experience, and also describes other methods. Milk analysis, pasteurization, sterilization, food preparations, composition of various infant foods, maternal nursing, selection of a wet nurse, mixed feeding, artificial feeding of infants, all receive careful and minute attention. The physiology and pathology of the newborn is treated with more thoroughness than is customary in text-books; and the chapter on the diseases of the newborn is very satisfactory and will well repay perusal by students and practitioners. The book is both readable and practical, and it reflects the large personal experience of the author. Many new illustrations have been added to this edition, which is larger than its predecessor by some two hundred pages. The author's plan, as stated in the preface, was to present a succinct reflection of the pediatric practice and knowledge of the day; in this he has been eminently successful.

Die Orthodiagraphie. Ein Lehrbuch für Aerzte. Mit 75 Abbildungen und 3 Tafeln. Von Dr. Karl Francke, Specialarzt für innere Leiden in München. München: J. F. Lehmann's Verlag, 1906.

Orthodiagraphy and orthodiaphotography are the somewhat ponderous terms used by Prof. F. Moritz of Giessen to designate his method of mensuration of the internal organs, particularly those of the thorax, by means of a special application of the *x*-rays. The rather difficult technique of the process is well set forth by Dr. Francke in this brochure of 100 pages, which also contains numerous reproductions of records and tabulations obtained by the author. The subject is of much interest, and while it is not likely, for the present at least, that the method will attain great popularity, it promises to be of value for the purposes of scientific medical research.

Outlines of Medical Diagnosis. Prepared for the use of Students at the Harvard Medical School, Boston. Fourth Edition. Boston: F. H. Thomas Co., 1906.

This little book consists of about thirty pages, and contains a good outline of the chief methods of medical diagnosis. The beginner must have some plan by which to work; and this pamphlet will keep him from serious omissions, and at the same time make his procedures methodical and therefore of value to himself and also to his patients.

Indigestion; an Elementary Study of Its Causes and Treatment. By Fernandez Clarke, L.S.A. Lond., L.R.C.P., Lond., M.R.C.S. Eng., etc., etc. New York: William Wood and Company, 1906.

This little book contains a brief and elementary account of the subject of indigestion. The physiology of digestion is first reviewed; then the various causes of indigestion are considered; and in the concluding chapter the author shows how impossible it is to treat all cases of indigestion by any given fixed rule. There are also chapters on anemia and constipation.

Manuel Pratique pour le Choix des Verres de Lunettes et l'Examen de la Vision, par le Docteur Scrini, Ancien Chef de Clinique Ophthalmologique à la Faculté de Paris, Lauréat de l'Academie de Médicin, Membre de la Société de Thérapeutique, et le Docteur Fortin, Médecin Oculiste. Paris: Vigot Frères, 1906.

This little volume of 228 pages is divided into six chapters, of which the first is devoted to a description of the properties of lenses and the materials of which they are made. The second chapter takes up the consideration of physiological optics. The third treats of the determination of ametropia. The fourth describes binocular vision. The fifth takes up the consideration of the writing of prescriptions for glasses for the correction of the various errors of refraction, and the sixth describes the mountings employed. There are twenty-four figures in the text. The subject is treated briefly and masterfully, but in an elementary manner.

Nouveau Traité de Médecine et de Thérapeutique, publié en fascicules sous la direction de MM. P. Brouardel et A. Gilbert, professeurs à la Faculté de Médecine de Paris. Maladies de la Bouche, du Pharynx, et de l'Œsophage par les Drs. G. Roque et L. Galliard. Paris; J. B. Baillière et Fils, 1906.

This volume of Brouardel and Gilbert's New System of Medicine and Therapeutics deals with the upper part of the digestive tract. There are chapters on diseases of the mouth, including the various forms of stomatitis, gangrene, and aphtha. On diseases of the tongue there are three sections dealing respectively with geographical tongue, black tongue, and leukoplakia. Diseases of the pharynx cover about one hundred and forty pages, and are thoroughly discussed; this is by far the longest portion of the book. The concluding fifty pages of the volume are devoted to diseases of the esophagus; one section being on the various parasitic diseases which can affect the esophagus. The general plan of the work is similar to that of the previous volumes of the series which have been already noticed in the pages of the Medical Record; and the present volume is up to the same high standard as its predecessors.

The World's Anatomists. Concise Biographies of Anatomic Masters from 300 B.C. to the Present Time, Whose Names Have Adorned the Literature of the Medical Profession. By G. W. H. Kemper, M.D., Professor of the History of Medicine in the Medical College of Indiana, Indianapolis, Ind. Revised and Enlarged from the Original Publication in the Medical Book News. With Eleven Illustrations, Nine of which are Portraits. Philadelphia: P. Blakiston's Son & Co., 1905.

Captious critics might complain that in a list of 245 anatomists the names of Poirier, Cunningham, Huntington, Zuckerkandl, Toldt, and Ramon y Cajal might well be included; that in a series of biographies of anatomists such men as Henry Gray, Joseph Hyrtl, and Quain deserve more than the mere mention of the dates of their birth and death; that Kölliker has been dead long enough to make the statement that he is "still living" inexcusable, etc. But if allowance is made for inconsistencies of this sort the present pamphlet may be found of use where larger works of reference are not available.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-seventh Annual Meeting, Held in Boston, June 5, 6, 7, and 8, 1906.

(Special Report to the MEDICAL RECORD.)

DR. LEWIS MCMURTRY OF LOUISVILLE, KY., IN THE CHAIR.

(*Continued from page 956.*)

HOUSE OF DELEGATES.

Proposed Investigation of the Treasurer and Editor.—Dr. H. O. WALKER of Detroit, referring to the great dissatisfaction felt and expressed by so many members with the management of the affairs of the Association, offered a resolution that a committee of five be appointed to investigate the management of the Association, and the way in which its *Journal* was conducted, to go over the business accounts, and in other ways to ascertain and report upon all the facts which were now unknown or not understood by the great body of members of the Association. That the distrust of those who managed the affairs of the Association was felt by a large and increasing number of the members was evidenced, he said, by the fact that the retiring president, in his address, found it necessary to express his disbelief in the existence of a "ring" having the Association under its control. A motion to lay the resolution on the table was carried.

The Journal and the Postal Laws.—A resolution was passed to the effect that a portion of the dues of each member of the Association be set aside as a subscription to the *Journal*, so that the postal laws might in future be complied with.

The Annual Orations.—It was voted that hereafter the orators in medicine, surgery, and State medicine be selected by the Sections on Medicine, Surgery, and Hygiene respectively, instead of being appointed by the House of Delegates.

Resolution of Thanks.—Resolutions were passed in appreciation of the hospitality shown to the members and guests of the Association by the local physicians, and of thanks for the admirable work done by all those who had had to do with the arrangements for the week's program. A resolution of thanks to the Council on Pharmacy and Chemistry was also voted.

Officers.—The election of officers resulted in the choice of the following: *President*, Dr. Joseph D. Bryant of New York; *Vice-Presidents*, Drs. Herbert L. Burrell of Boston, Andrew C. Smith of Portland, Ore., E. S. Fairchild of Des Moines, Iowa, and W. S. Foster of Pittsburg, Pa.; *Treasurer*, Dr. Frank Billings of Chicago; *Secretary*, Dr. George H. Simmons of Chicago; *Trustees*, Drs. M. L. Harris of Chicago, W. H. Welch of Baltimore, Md., and Miles M. Porter of Fort Wayne, Ind. Atlantic City was chosen as the place of meeting in June, 1907.

SECTION ON DISEASES OF CHILDREN.

First Day—Tuesday, June 5.

Address of Welcome.—Dr. THOMAS MORGAN ROTCH of Boston delivered the Address of Welcome, referring to the early history of the Section, recounting some of the problems in the treatment of diseases of children which had been solved and mentioning others which still claim the close attention of the pediatrist. He extended a graceful and cordial welcome to the members to Boston.

The Pediatric Outlook.—Dr. W. C. HOLLOPETER of Philadelphia, chairman, delivered an address with this title, mentioning some of the barriers against professional progress which had been overcome, such as the treatment of the dread diphtheria, the exanthemata, and other infectious diseases. The increased knowledge of food modifications was mentioned as an important advance, with the enlarged appreciation among the laity of the laws of personal and domestic hygiene. He thought the offer of the Mayor of Huddersfield, England, to give prizes to mothers for yearling babies as an incentive to keep their infants alive, would be of little value without further effort for the betterment of the nation. Life with health was to be regarded as a boon accomplishment rather than the mere maintenance of life. The author felt that there was no more vital touch to national life and spirit than that given by the citizen in the devotion of his life work to the welfare of the child. A problem yet to be solved was the education for maternity. A maternal mind previously prepared in hygienic instruction was considered of much value. Careless medical inspection of houses and schools and public institutions, it was felt, led to a false sense of security; but so long as politics remain on a low plane, so long will crime and graft crush out young life. Great emphasis was laid upon the necessity for *clean*, not sterilized or pasteurized milk. The great possibilities in the proper care of defectives were outlined. Extended reference was made to the argument of Mr. Havelock Ellis for placing matrimony upon a scientific basis. Mr. Ellis states that investigations show that there are certain definite matrimonial tendencies; that like are attracted rather than unlike, and that "while some kinds of people tend to be married with special frequency, other kinds tend to be left unmarried." Dr. Hollopeter regarded the argument of Mr. Ellis for the betterment of the race through the eugenic selection of parents sufficiently forceful, but confessed to a feeling that humanity was not prepared for the departure.

Injuries to the Child's Head During Labor.—Dr. B. SACHS of New York City presented this communication, speaking of his efforts through many years to enlist the interest of the obstetrician and of the general practitioner in the injuries which the child's brain was apt to sustain during parturition and of his belief that there are innumerable imbeciles, paralytics and epileptics in the world to-day who might have been normal individuals had they been given a "square deal" at the time of birth. He had observed that a very considerable number of the cases of infantile cerebral paralysis were either first born children or such who had been born after prolonged, often dry labor. Statistics of several hundred of such cases showed less harm by instrumental delivery than by prolonged labor, although unskillful instrumental delivery had been a frequent cause of trouble. If physicians were more confident of the safety of the forceps and of their own skill to apply the same, protracted labor would not be as powerful an etiological factor as at the present time. A word of warning was given to the obstetrician, that other things being equal, and above all, the life of the mother not being in danger, it was wise to curtail the period of labor as much as possible and not wait until the child's heart action became feeble. Reference was made to Cushing's recent suggestion of opening the skull in severe cases of meningeal hemorrhage at birth and washing out of the blood clots. In three of five children so operated upon by Dr. Cushing cure was effected so far as Dr. Sachs knew. Such a daring procedure, however, would apply to relatively few of the cases. He believed that dependence must be placed wholly either upon prophylactic measures or upon more skillful manipulation of labor on the part of the obstetrician. While not suggesting a modification of the rules of the obstetrician Dr. Sachs felt that the medical men in attendance at confinements had for years followed a policy of indifference toward the welfare of the child, allowing too many children to be born into the world after labor unnecessarily prolonged and in conditions of distinct disadvantage to them and to society for the entire period of their natural lives.

Dr. EFFIE DAVIS of Chicago thought rather that injuries to the child's head during labor were due more frequently to the use of forceps than to prolonged labor. As a much more satisfactory plan than the use of the forceps she sug-

gested the regulation of the size of the child, particularly in patients of the higher classes who had plenty of leisure.

Dr. C. G. Kerley of New York City believed there were more of the cases mentioned by Dr. Sachs than there should be. He agreed with the view that the accidents were due to compression in prolonged labor rather than to actual injury from the forceps. In his observations degeneracy in the parents had not been a factor in the injuries.

Dr. Gilbert of Louisville had found of value the method of inducing labor, especially in primiparas, two or three weeks prior to the full term. He employed a tampon soaked in glycerin solution and never introduced an instrument into the uterine cavity for this purpose.

Dr. J. C. Cook of Chicago believed that in the majority of cases of injury at birth the cause was either prenatal or postnatal.

Dr. Sachs in closing emphasized his reason for introducing the subject, which was to get the influence of the members of the Section in furthering the cause of regarding the child at birth as well as the mother.

Heredity and Environment as Factors in the Life and Diseases of Children.—Dr. C. F. Wahrer of Fort Madison, Iowa, referred to the authority of Genesis that every living thing, whether it be plant or animal, should produce offspring after its own kind, thus establishing the law of heredity, and at the same time forming abundant proof for those who believe in the so-called bathmic evolution. While no one, he takes it, from scientist down to the most ignorant casualist denied the matter of heredity, yet many biologists as well as psychologists had devised different and even antagonistic theories to account for heredity and its correlative factor, environment. According to Weismann only inherent qualities can be transmitted to offspring; acquired characteristics not being transmissible. According to Darwin, the transmission of acquired as well as inherent qualities is possible. The views of other philosophers were given. Reference was made to the fact of the practice of circumcision among the Jews for thousands of years but that no Jewish boys are born without their foreskins. Shepherds had amputated the tails of all lambs for centuries innumerable, but to-day no bob-tailed sheep are born. Per contra, Brown-Sequard created artificial epilepsy in guinea-pigs and saw epilepsy develop in the offspring, even to the third generation. The question is raised, are diseases, like certain traits, inherited, that is, transmitted from ancestor to posterity? If so, have these diseases always existed in this particular tribe or family, or were they first acquired and then transmitted? If the latter, how can Weismann be right? Despite the dictum of Weismann Dr. Wahrer regarded the consensus of opinion of philosopher, philanthropist and statesman, of scientist and sage to be against him as far as the practical results of education and training were concerned. This being the fact, pediatrists were encouraged in combating diseases in children and in preventing disease tendencies of the mind and body. The conduct of society to all its members Dr. Wahrer felt could never be placed upon permanent bases without regard being paid to what science teaches upon the fundamental problems of inheritance.

Dr. Rhoads of Pittsburg remarked that the subject of transmission from parent to child was one which had been studied for hundreds of years, and that at present little more was known than at the beginning of the researches.

Dr. Hansell of Ohio thought that in the question of heredity and environment the fact was lost sight of that heredity is slow in action, environment rapid; for instance, in the careful selection of seed corn which has taken years to develop, if the corn be placed in poor soil or, in other words, poor environment, it will not produce a well-covered cob, and if successively planted in poor soil, all the good gained by heredity will disappear. The same law would work out in animal life; for instance, a horse used for breeding horses of great speed will, if put in the plough, lose the ability to produce offspring capable of racing.

Dr. Gilbert of Louisville said he believed that the fact of accidents to the fetus in *utero* from impressions made upon the mother, or even from traumatisms, was well established.

Dr. Robbins of Ohio stated his belief that if Jesus Christ had left one drop of His blood in the human race he would believe that one person might be superior to another; since He did not, Dr. Robbins believed that environment was the important factor in the development of the race as it is to-day.

Dr. Keyser of Boston referred to the settlers of New Zealand and Australia who were convicts. The character of the present inhabitants he thought was an evidence of the possibilities of environment.

Hemorrhage in the Newborn.—Dr. H. McClanahan of Omaha gave a review of the literature pertaining to hemorrhage in the newborn. That the hemorrhage is due to a specific condition he thought entirely probable. The important principles of treatment he considered to be to control the hemorrhage and to aid the nutrition of the child, and to maintain body heat. The details of treatment were given in reports of cases. Five cases of cephalohematoma were reported under the head of traumatic hemorrhage. The diagnosis is usually simple and is made upon the location of the tumor, the bony ring that forms around the periphery of the mass, and the absence of pulsation. The report was appended of one case of hemorrhage of the lungs in the newborn.

Dr. I. A. Abt of Chicago felt that hereditary syphilis was a factor in the hemorrhages of the newborn; also infection of the ordinary pathogenic microorganisms, the streptococcus, the staphylococcus, or even the colon bacillus, might in a large number of cases be the etiological factor.

Blood Cultures in Children and their Significance.—Drs. Thomas Morgan Rotch and Harry Chamberlain Low of Boston contributed this paper. The points treated were: (1) Blood cultures in the living, a modern and important diagnostic measure; (2) difficulties of technique in children; (3) character of cases where blood cultures would be of value in children; (4) illustrative cases.

Dr. E. E. Graham of Philadelphia thought the blood cultures often of distinctive value, whether or not a special organism were found. If the case were suspected of being tuberculous, it was possible to find the tubercle bacillus, but not finding it did not prove that the case was not tuberculous. Many cases of concealed pneumonia were immediately cleared up by the finding of the pneumococcus.

Second Day—Wednesday, June 6.

Bacteriological and Blood Findings in Thirty-Six Cases of Bowel Infection in Infants.—Dr. J. C. Cook of Chicago said that the work was taken up with the hope of obtaining findings pointing to the relation of the condition of the blood, the enlargement of the glands and spleen, and the bacterial and metabolic intoxications. An accompanying chart showed the most important data in each case. The cases were arranged with regard to the red blood count, the highest to the lowest, that being the most logical order upon which to make comparisons. In every case of examination of the blood, including a count of the red and white cells, a differential count of the white cells and a hemoglobin test were made. In cases in which a general infection was suspected cultures from the blood were made. Microscopical examinations from the stools and throat were recorded upon another chart. Of the physical findings only the enlarged glands and spleen were recorded. In the cases of anemia the red blood counts varied from 8,850,000 to 3,256,000; and the white count from 6,600 to 53,000. The differential counts of white cells were as follows: Small lympho-

cytes, 4-77; large lymphocytes, 6-56; neutrophiles, 8-87; eosinophiles, 0-10. The hemoglobin ranged between 45 and 100; the color index between 1.5 and .4. The logical conclusion regarding the variation of the red count was that there was a concentration of the blood in those cases showing clinical aspects of anemia and high red counts. To the author the significance of the blood examination was that in those cases presenting the clinical aspect of an anemia and a high or even normal red blood count, there was concentration of the blood pointing to the lack of sufficient ingestion of fluids or to a depletion of the system from vomiting or from diarrhea, and indicating a high concentration of toxic substance.

Dr. J. L. Morse was impressed with the record of the high blood count and questioned the explanation given by Dr. Cook. A more reasonable explanation to him was the fact that in all conditions of malnutrition there was a contraction of the superficial capillaries and a concentration of the blood in the central circulation, so that the red count taken from the ear or finger did not give a true picture. The changed blood count in anemias was known to be due not to the anemia but to the disturbed nutrition which was the cause of the anemia.

Dr. A. H. Wentworth of Boston thought there must be some error in the red blood counts, and inquired whether all were made by the same person.

Dr. Cook in closing thought the criticism of Dr. Morse just, and one probably throwing some light upon the question. Replying to Dr. Wentworth, he said all the counts were made by the same man, and that the facts were true as stated. He thought the great concentration of the blood explained the fact that as many of these patients died of toxemia from concentration of the blood as from actual exhaustion.

The Utility of Saline Solutions in the Treatment of Febrile States.—Dr J. Madison Taylor of Philadelphia read this paper, relating his further experiences and conviction on the practical use of saline solutions in all fever states. Fever being a protective process in great measure, the aim should be to conserve to the uttermost the autoprotective forces of the organism to which Sajous gave particular emphasis in 1903. The way to do this was said to be to begin the use of saline solution as early as possible, continuing it throughout the fever, until a general diet permitted the normal intake of salines to be resumed. He reiterated his opinion expressed in connection with pneumonia, and added further testimony, giving a number of cases of extreme severity treated in this way. Dr. Taylor said that his method was to give all such febrile cases freely to drink of the physiological salt solution a half hour before each feeding every three hours. In this way the organism was fortified through the enhancement of the action of the ductless glands to form antibodies and furnish the equivalent of antitoxic sera.

Case of Meningitis with Isolation of Bacillus Diphtheriæ from the Cerebrospinal Fluid.—Dr. A. C. Cotton of Chicago offered this volunteer paper describing a case reported from the Pathological Laboratory of Cook County Hospital by Dr. Joseph Morrell and Herman E. Wolf. The organism was isolated at two spinal punctures and again at the postmortem, as also from the throat. The organism was described morphologically and as to culture characteristics, in which it agreed with *B. diphtheriæ*. Lesions were produced in guinea-pigs quite typical for *B. diphtheriæ*, with which it also agreed in its ability to ferment certain sugars.

A Further Contribution to the Study of the Stools in Starch-fed Infants.—Drs. C. G. Kerley and H. N. Mason of New York presented this paper, which was based upon the result of observations in sixty children, 324 stool examinations having been made in infants varying in age from a few days to one year, undertaken to ascertain something definite relative to the starch digestion capacity of children of different ages. Barley flour was used, which was boiled one hour and a half; the cereal water was used both as a diluent to the milk food and as a milk substitute. In thirty-three children the stool examinations were persistently negative to starch. Of these twenty-two were between six and twelve months, eleven being under six months. Seven cases were persistently positive, showing starch at each examination. The stools in the remaining twenty children showed sometimes positive, sometimes negative. Eight of these were positive in the majority of examinations and are recorded as showing a positive tendency. Twelve were negative in the majority of the examinations and are recorded as showing a negative tendency. Among the sixty cases forty-one showed a good starch capacity, nineteen a poor or indifferent starch capacity. That some of the starch might have undergone fermentation in the intestines, but that it was of no great moment, was explained by the author. The influences of feces bacteria acting as an enzyme was also brought out in the paper.

Dr. G. R. Pisek of New York said that Dr. Kerley had proven his case by clinical facts. He thought all were ready to dilute the milk with cereals as soon as they could feel sure that the starch would be taken care of.

Dr. Thomas W. Southworth thought the paper would remove the question of doubt of starch digestion by infants. A point of interest to him was the length of time—an hour and a half—that the cereal was cooked. To increase the time of cooking these starch preparations he thought was the present tendency.

Dr. T. W. Kilmer of New York thought there should be no age limit in regard to the starch feeding; this was also true of the quantity of milk an infant should take, and in regard to its clothing.

Dr. J. B. Learned of Northampton, Mass., spoke in favor of giving whole milk to infants and referred to a case in his own family in which this had been done successfully.

Sodium Citrate in Infant Feeding.—Dr. A. C. Cotton of Chicago in presenting this paper remarked incidentally that the infant deprived of the breast must, in relation to his feeding, be regarded as a pathological problem. The important question in feeding cow's milk was how to increase the proteids and maintain unimpaired digestion. He was convinced that sodium citrate, through its inhibition of dense coagulation of cow's milk in the presence of acid and rennin ferment, was valuable in this respect. In the last two years he had used it in more than fifty cases in hospital and private practice. A report of eight cases by Dr. J. D. Merrill and the history of twenty-nine cases of Dr. Vanderslice were also referred to; in these the results were satisfactory. In the employment of the method an aqueous solution was ordered containing from one to five grains to the dram. A quantity of this solution was furnished the mother or the nurse, with instructions to add to the baby's bottle immediately before feeding enough of the solution to represent from one to three grains of the citrate to each ounce of milk in the feeding mixture. An indication for the increase of the sodium citrate, in some cases to as high as three grains to the ounce of milk, was vomiting of curds or the appearance of curds in the stools, care being taken to exclude indigestion from excess or intolerance of fats. The duration of the exhibition of the sodium citrate varied in individual cases. No case of citrated milk feeding had been brought to the operator's attention in which the results were unsatisfactory. The method especially commended itself to the author in dispensary practice where the mother's demand for "medicine" for her baby's dyspepsia might be met by the standard solution of sodium citrate to be administered in the bottle of feeding mixture.

The Trend of Pediatric Opinion Concerning the Artificial Feeding of Infants.—Dr. Thomas S. Southworth of New York in this paper said that the spirit of inquiry was now engaged in testing the principles upon which artificial feeding rested. Only milk formed the soft solids necessary to develop the stomach, and all methods of

feeding or any recipe had the common purpose of making the infant digest enough of the casein of cows' milk to thrive. Whether all the starch granules in a cereal diluent were digested was not as important as the latter's mechanical effect upon the curd and the presence of the important absorbable vegetable proteids which it contained. We had ceased to add alkalis upon general but vague or unknown principles. Lime water added to fresh milk changed its normal constituent bicaseinate of calcium into caseinate of calcium, which was no longer coagulable by rennet. The usual 5 to 10 per cent. of lime water rendered noncoagulable but small quantities of milk. As the strength of the milk mixture was increased more and more coagulable casein was present. Other alkalis, such as sodium carbonate, potassium carbonate, or magnesium hydroxide, also altered the digestive properties of milk and probably formed caseinates of calcium and sodium of calcium and potassium and of calcium and magnesium. Bicarbonate of sodium was usually added in such quantity that its uncombined surplus could be used as an antacid in the stomach, and it had a valuable field in neutralizing abnormal acids in vomiting cases. When the usual alkalis were added to milk, acids restored the coagulability by rennet, but citrate of sodium decalcified the casein so that rennet would not thereafter coagulate it, and only compounds of casein (not of paracasein) could be found with acid. This difference accounted for its usefulness in selected cases. Prof. W. B. Cannon's recent work upon intestinal processes threw light upon the formation of the small isolated fecal masses which make up certain infants' stools, and in other ways explained the injurious effect of flatulent destruction of the intestines. Percentage feeding and milk modification far surpassed in scope and elasticity previous efforts at artificial feeding, but would never be as free from danger as good breast milk. Parents and physicians using infants' food should comprehend their composition and their dangers. The pure milk movement was one of the great life-saving agencies of recent years, but pasteurization was still advisable in hot weather. Even ignorant mothers could be taught to modify milk with very simple apparatus. "Top-milks" were better and their fat contents were less variable than cream and milk mixtures. Evidences of proteid indigestion were more readily grasped than those of too high fat. Spitting up, the "scrambled egg" stool, fat constipation, the passage of mucus, and refusal to take a proper quantity from the bottle were some of the signs. The use of a few stock formulæ designed for certain ages meant many failures. Only a clear idea of the purposes subscribed by the different elements of the food and the indications for varying them would solve difficulties as they arose. The infant previously fed with condensed milk, infants' foods, or unsuccessful mixtures must first have its digestion for casein (or fat) trained with weaker formulæ. The stool, the weight chart, and the infant must be considered together when subsequent changes were made in the formulæ. Level fat and proteids (*i.e.* mixtures made from plain milk) were often better borne in cases of malnutrition and by sick infants with fever. A large proportion of the failures arose, despite suitable formulæ, from neglect of well-established rules governing the proper intervals and the quantity at each feeding. It was especially common to overfeed undersized infants.

Whole Milk vs. Laboratory Milk.—Dr. Alexander McAlister of Camden, N. J., in this paper contended that laboratory milk was ideal in theory, but for clinical and economical reasons practical only in selected cases for temporary use. Infants requiring substitute feeding and who came to the attention of physicians were abnormal and always difficult cases. Functional and perhaps organic disease he believed was already a complicating factor. The virile, life-quickening qualities which gave to milk its freshness and sweetness were said to be not present in laboratory milk, nor in sterilized or pasteurized milk, and must be rated in this respect with old, stale, and decomposed milk. Fresh milk, he said, was a vital fluid like live blood. The vital principles therein gave it distinct germicidal power, as shown by the researches of Freudenreich. This he considered essential in an ideal and practical substitute infant food. He thought too little attention had been directed to securing the benefits of this native virility in cow's milk. Increased attention to rapid transit and the introduction of laboratory methods in the handling of milk, he thought, were making infant feeding in cities less difficult each year; facilities were not wanting for a milk supply 100 per cent. better than that now provided. When such was demanded he believed that it would be forthcoming.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Second Day—Wednesday, June 6.

Pathology of Uterine Cancer.—Dr. Thomas S. Cullen of Baltimore went very briefly into the pathology of uterine cancer, dividing the disease in (1) squamous cell cancer of the cervix, (2) adenocarcinoma of the cervix, (3) adenocarcinoma of the body. Squamous cell carcinoma of the cervix usually extended by continuity to the body and out into the parametrial fat. It also extended out into the vaginal wall. The lymph glands of the parametrium and the iliac glands are involved in early metastases. The same group of glands were involved in adenocarcinoma of the cervix, which spread rapidly. Adenocarcinoma of the body, however, usually grew slowly, gradually infiltrating the uterine walls and forming metastases in the lumbar glands. The inguinal lymph glands showed metastases when the uterine cornua were involved. Adenocarcinoma of the cervix was the most dangerous form, next squamous cell carcinoma of the cervix, adenocarcinoma of the body, on the other hand, being most amenable to treatment.

The Operative Treatment of Cancer of the Cervix.—Dr. Emil Ries of Chicago read this paper, in which he held that the rational operative treatment of cancer of the cervix was the outcome of the conception of the pathology of the condition. Every case should be subjected to the double test of a confirmation of the diagnosis by microscopical examination, and observation of the patient for at least five years after operation. Pathological examination was not sufficiently applied to cancer of the cervix. Investigation of cancer in general and of the cervix in particular had shown that cancer was not confined to the area of patent involvement, but had outposts which must be removed as far as possible. This could not always be done completely. The disease, though originally circumscribed, was rarely seen in that stage; it followed the lymphatics, and the size of the original growth was no criterion as to the advancement of the disease. Following this belief, he held that operative treatment should extend to the lymphatics and surrounding connective tissue. It was recognized that recurrence depended not only upon contamination at the time of operation, but on the possible invasion of more or less distant organs related physiologically to the original seat of the disease. If this were true of the lymphatics, early removal of these lymphatics would give an additional chance of cure. He reported eight cases treated by his method, two of which died on the table; the remaining five were alive to-day, after five years. Four of the surviving cases were free from cancer; one had cancer of the breast, which, in view of the fact that the two cancers were different, he was inclined to believe was a new growth.

The Present Status and Future Prospects of Operative Treatment of Cancer of the Uterus.—Dr. Alfons von Rosthorn of Heidelberg, Germany, read this paper, in which he outlined the advantages, disadvantages, and future outlook of the abdominal operation for cancer of the uterus. His work up to the present time had of necessity been confined to the advanced cases which would not have been satisfactory in their results by any method of treatment. The mortality, therefore, had been high. He hoped that future work could be done in earlier cases, and believed that it was along this line that progress would be

made in future. Cancer of the womb began as an absolutely local affection, in some forms remaining so for a long time without showing a tendency to spread. In cases which were still sharply localized the cancer could be eradicated and thus permanently cured. Absolute cure by operation by removal of the affected organ could be assured only when the disease was confined to the organ in question. As soon as the disease, even as microscopically demonstrated, had tended beyond the organ originally affected recurrence was inevitable. These extensions could not be recognized by clinical examination unless palpable, hence the tendency of surgeons to remove as much as possible of adjacent tissue. The removal of the lymphatics in the vicinity came to be considered a necessity. Gynecologists were slow to recognize this necessity. The abdominal operation must be looked upon as the most rational procedure, since it corresponded more nearly with recognized surgical principles of the day. Its opponents had contended that it was essentially more dangerous to the individual than the vaginal operation. This could not be definitely determined until more cases had been reported.

Dr. James W. Ross of Toronto, Canada, said, in opening the discussion, that after all little progress had been made in the study of cancer and its treatment. Despite early diagnosis and removal, the cancer would recur in many instances. Results from the simpler operations had been disappointing in many cases, and he believed results from the more radical and more dangerous procedures would prove proportionately disappointing.

Dr. Rosenthal of Fort Wayne, Ind., said the fact that carcinomatous tissue should be treated as suppurative tissue would be treated would give the preference to the abdominal method of procedure advocated by Dr. Von Rosthorn.

Dr. Noble of Philadelphia said that the radical operation was the logical one. The choice of operation decided upon *a priori* grounds would at once point to this; but various facts tended to prevent his adherence to Dr. Von Rosthorn's teaching. He had adopted the method when it was first introduced into this country by Clark, but experience had taught him that it was a serious operation with high mortality and frequent recurrence. He had abandoned the procedure. He abandoned the operation for the further reason that it did not accomplish what it started out to do, viz., to remove all the tissues. He had adopted a modified operation.

Dr. Bovée of Washington said he combined several methods, removing the lymphatics from the pelvis, removing practically the whole of the vagina, and pushing the specimen down through the vulva. He did not believe vaginal hysterectomy to be advisable in any case of cancer of the uterus which had passed beyond the early stage. In more advanced cases abdominal hysterectomy should be performed. He resorted to galvano-cauterization in cases in which he was not fairly confident of eradication of the disease.

Dr. Clark of Philadelphia said that while he had formerly advocated the radical operation he now restricted it, believing that in extensive extirpation of glands less was gained than lost.

Dr. Massey of Philadelphia protested against curettage as a preparatory method of treatment. He believed that in the few minutes elapsing between the wound of the cancer and the removal of the growth the veins and lymphatics might aspirate the juices of this wound and thus be responsible for the metastasis which resulted a few months later.

Dr. Cushing of Boston protested against the pessimism expressed by Dr. Ross. He had adopted the plan of opening the abdomen, tying off the vessels, then pulling the uterus down and removing it through the vagina.

Dr. Boldt of New York had known cures resulting from the vaginal operation with no recurrence for years. He cited such a case in which he had operated thirteen years before by vaginal hysterectomy. On account of pelvic pains and other symptoms he had, a short time ago, opened the abdomen, expecting to find recurrence; he was surprised to find absolutely no sign of recurrence. He deprecated too prolonged anesthesia as was practised in most American hospitals. All preliminary preparation should be carried out before beginning the anesthesia. He emphasized the possibility of ureteral necrosis following abdominal hysterectomy by citing three cases which he had had a short time ago. He called especial attention to the necessity of examining the patient at intervals of four weeks for two, three, or four years after operation.

Dr. Laura E. Branson of Iowa City said that theoretically carcinoma might be divided into local and general; practically this could not be done, because it was impossible to tell at what time the secondary deposits of metastasis may take place. Theoretically the patient might be told that the possibility was there would be no recurrence; practically this could not be done because of the secondary neoplasms which might already be developing. It was scarcely just, therefore, to claim that at any period the carcinomatous process was local or general.

Dr. Dührssen of Berlin had employed for several years his method of division of the levator ani, which he had found easier than abdominal hysterectomy. In cancer of the uterus complicating pregnancy he first performed vaginal cesarean section, then split the uterus in halves and did vaginal hysterectomy. Such patients could not stand the abdominal operation. In all other cases he advocated the abdominal method.

Dr. Carstens of Detroit said he confessed to pessimism regarding the radical operation.

Dr. Cullen of Baltimore said that Dr. Kelly and his associates had followed the development of the technic in the abdominal operation for removal of the uterus and all agreed that the abdominal operation was the one to perform. They believed it to be the most difficult operation, however, and should be the first of the day always.

Dr. Ries of Chicago said nothing was to be gained by reporting one successful case and saying nothing of the ninety-nine failures. From his knowledge of the pathology of cancer he thought vaginal hysterectomy in very few cases reached all the carcinomatous tissue.

Dr. von Rosthorn, in closing the discussion, said no progress would be made by holding to the old method, and made a plea for work along the newer lines of abdominal hysterectomy in both early and late cases.

The Preservation of the Functions of the Broad Ligaments in Pelvic Surgery.—Dr. E. C. Dudley of Chicago emphasized the advantages of utilizing the broad ligaments in supporting the uterus in procidentia. He called attention to the fact that prolapse of the uterus was incident to prolapse of the whole pelvic floor. When not only the uterus but the whole pelvic floor was prolapsed the uterosacral and round ligaments, even though shortened, did not give sufficient support.

Dr. Reynolds of Boston believed Dr. Dudley's operation as illustrated by the lantern pictures and his explanations would prove to be one of the lasting contributions to surgery.

Dr. Montgomery of Philadelphia said that this method of dealing with a condition that had long been a bugbear to gynecologists would prove to be a great advance.

Dr. Waldo of New York said that if the broad ligaments, when brought together as illustrated in the pictures, would hold, such an operation would cure the condition.

Dr. Tausig of St. Louis said that operations for prolapse compared with those for carcinoma, inasmuch as results could not be determined without waiting three, four, or five years. He believed, however, that the operation of using the broad ligaments instead of the uterosacral and round ligaments in supporting the uterus would prove a success.

Dr. Craig of Boston said that when this operation was accompanied by repair of all other injuries to the vagina it would in all probability make the function of the broad

ligaments permanently operative. The original causation of cystocele, with the downcome of the vaginal walls, originated in laceration of the perineum. The fact that the broad ligaments had once given way from the abnormal conditions below rendered it probable that they would do so again if these conditions were not removed. He considered Dr. Dudley's operation by far the best suggestion that had been made for dealing with those cases which had not come under observation early enough for other procedures.

The Conservative Surgery of the Ovaries.—Dr. Edward Reynolds of Boston read this paper. If cystic disease of one ovary existed it tended to appear in the other. If one ovary was affected it was conservative surgery to remove the affected one, leaving the other. If both were affected conservative surgery called for the removal of both, saving as much ovarian tissue as possible. Malignant neoplasms meant radical operation. After the childbearing age both ovaries should be removed if affected, the disadvantages of castration in such case being of minor importance as compared with the probability of second operation. Normal ovarian tissue could generally be found in benign tumors, and effort to preserve as much as possible of this normal tissue should be made. Ovarian tumors could conveniently be classified as cysts originating from the corporea lutea, dermoid cysts, Graafian cysts, and enlarged sclerotic ovaries. Cysts of the corporea lutea would slip out through an incision, leaving practically normal ovarian tissue. Dermoid cysts and the larger cysts of the Graafian follicles must usually be excised. Enlarged sclerotic ovaries may be treated by puncture and removal of the lining membrane, with or without suture; resection; bisection of the ovary and multiple puncture or resection; and scarification or multiple incisions of the surface.

The Present Status of Conservatism in the Surgical Treatment of Tubes and Ovaries.—Dr. J. E. Cannaday of Paint Creek, W. Va., read this paper, in which he gave briefly the teachings of some of the pioneers in gynecology, emphasized the rights of the patients concerned, and correlated the views of a number of the eminent gynecologists of this country. He dwelt upon the different ideas of what constitutes conservative work. He outlined the indications and arguments in favor of both removal and repair of diseased ovaries and tubes, giving the technic of and results of plastic repair work. Ovarian transplantation and its limitations were briefly mentioned. The symptoms following artificially produced menopause were enumerated, and the views of conservative writers on this subject given.

Dr. Polk of New York said the situation resolved itself into the question of how far one should go in the preservation of an ovary found upon laparotomy to be diseased. It was one of the most difficult conditions which confronted gynecologists up to the present time because no method had been devised for deciding the after-history of these growths. Inasmuch as it was not a matter of life and death, but rather one of function, the patient should be allowed to decide the question in large part. The question of conservatism so far as the ovary was concerned was in a far better way of being solved than that concerning the oviducts.

Dr. Morris of New York agreed with Dr. Polk that the patient should be considered in the decision as to the work to be done. In malignant cases the operator must act regardless of the patient's wishes. If there should be a question of doubt about the diagnosis a spot-diagnosis could be made from a frozen section. In gonococcus cases he tried to save a little of the ovary for purposes of internal secretion, although he believed gonococcal infection meant pretty complete loss of the oviducts. In tuberculous cases conservative surgery did not apply. He had gradually narrowed the field of ovarian grafting down to homoplastic grafting as heteroplastic grafting had not seemed successful because of the intolerance of the tissues of one animal organism for those of another. Lately, however, he had been able to report a successful case of heteroplastic grafting. He called attention to the interesting medicolegal questions which might arise in such a case as to who was the mother of the child resulting from such operation.

Dr. Lawrence of Columbus, Ohio, said his experience with the conservative treatment of tubes and ovaries had been far from satisfactory. He thought the pendulum had swung to the opposite extreme. True conservatism was that which subserves the interest of the patient.

Dr. Gordon of Maine called attention to the fact that pregnancy had occurred, in his own experience and that of others, after complete, or supposedly complete, removal of tubes and ovaries. A great deal of good as well as harm had resulted from conservative surgery of the ovaries and tubes.

Dr. Pantzer of Indianapolis referred to a case which he had reported two years ago, in which the condition of the ovaries theoretically excluded all forms of conservative treatment. The smaller ovary was removed for microscopical examination and the other was pared of its sclerotic coat. In fifteen months after the operation the patient became a mother.

Dr. Dorsey of St. Louis called attention to cystic ovaries, which could be successfully treated by resection. In such cases the patients went on to menopause without pain. He would not hesitate to slit the ovary to the hilum and scoop out the cysts.

Dr. Boldt of New York agreed with Dr. Polk in regard to leaving it to the patient whether or not some function should be preserved. He would consider it conservative surgery if in case of a large ovarian tumor part of the ovarian stroma was saved. In a case of pyosalpinx with macroscopically normal ovaries he would advocate exsection of the entire Fallopian tube and grafting of the ovary into the cornua of the uterus. So-called conservative surgery was sometimes fraught with disastrous results.

Dr. Reynolds agreed with Dr. Polk that inasmuch as conservation of the ovaries and tubes, with the chance of a second operation, concerned the life and function of the patient the question should be left to her. He considered pregnancy occurring after removal of tubes and ovaries due to the fact that such operation was not in reality complete.

Dr. Cannaday did not believe in leaving tubes which were the seat of infection, but only those in which infection had disappeared. Ectopic gestation, supposed to be due to destruction of the cilia in the tube, was disputed by Kelly, who held that inflammation did not destroy the cilia.

SECTION ON SURGERY AND ANATOMY.

First Day—Tuesday, June 5.

Address in Surgery.—Prof. F. Trendelenburg of Leipzig, Germany, delivered this address. He reviewed all the branches of surgery since the preantiseptic period, and discussed particularly the surgical treatment of puerperal pyemia, which, he said, should be similar to that employed in the treatment of pyemic sinus thrombosis following an otitis media, the conditions found in both condition, and the clinical history being practically analogous. A number of cases have been published, showing that ligature of the pelvic veins for chronic suppuration is a successful procedure. In the acute cases the prognosis is favorable only when an early operation is possible. Even in the presence of a thrombosis in the vena cava spontaneous recovery may follow. Complete obliteration of the lumen of the vein may be followed by the development of a sufficiently extensive collateral circulation. He had attempted ligation of the common iliac artery and the lower section of the vena cava. One patient lived six days and another thirteen days, but he did not advocate this procedure. In acute cases he strongly advocated the ligation of the ovarian and external iliac veins at an early period. He also considered the preferable method of exposing these veins.

Results of Partial Occlusion of Large Arteries.—Dr.

W. S. Halsted of Baltimore had during the past twenty months conducted a series of experiments on 100 dogs for the purpose of noting the effect of complete and incomplete occlusion of the abdominal and thoracic aorta by metal bands. He had found that the pressure below the band was lowered in proportion to the amount of the occlusion. The return to normal below the band was rapid but varied greatly in different dogs. Partially occluding bands produced, as a rule, no macroscopic change in the artery wall, even after seven or eight months, but under completely occluding bands the artery wall usually atrophied and in the course of several weeks or months was absorbed. Twice the portion of the arterial wall embraced by the band was converted into a solid cylinder of tissue. He considered this the ideal closure of an artery. One notable change was the unusual deposit of extradural fat about the spinal cord below the site of the constricting aortic band. He believed that lesions in the cord or the artificial anemia were responsible for this deposit. He thought this metal band might be extremely useful in occluding arteries above an aneurysm. The band was preferable to the silk or other ligature because it was not liable to cut through the vessel wall; it produced gradual occlusion; it could be removed, if necessary, without having in any way injured the vessel wall. Dr. Halsted had partially occluded the innominate once in the human subject and the carotid four times, successfully, with an aluminum band. In a case of large popliteal aneurysm he employed the band to occlude completely the femoral artery. He thought that partial occlusion might even, in rare instances, cure an aneurysm.

Treatment of Aneurysm by Intrasaccular Suture.—Dr. Rudolph Matas of New Orleans reviewed the operation described by him on former occasions and reported thirty-eight cases in proof that his method had not only stood the test of experience but that it would accomplish results with greater security and simplicity than any of the older methods hitherto employed. Of twenty-two cases of obliterative endoaneurysmorrhaphy and seven cases of restorative endoaneurysmorrhaphy there had been no relapses, although there had been two relapses out of five cases of reconstructive endoaneurysmorrhaphy or arterioplasty.

Dr. W. W. Keen of Philadelphia commended Dr. Matas' operation very highly. He also described a clamp that he had devised for producing partial occlusion of a vessel under graded pressure on the same principle, to a certain extent, as the metal bands employed by Halsted.

Dr. Willy Meyer of New York cited the case of a boy who had a traumatic aneurysm of the popliteal artery in which he employed Dr. Matas' method with excellent results.

Dr. R. C. McChord of Lebanon, Ky., also reported a similar case, as did also Drs. Stillman, White, and others.

Tumors of the Carotid Gland.—Dr. W. W. Keen of Philadelphia reported a case of this kind and gave a brief résumé of twenty-six other cases reported in the literature and two cases discovered post mortem. He reviewed the anatomy of the gland and the clinical history of the tumor. Of the twenty-seven cases cited there were twenty-six operations with seven deaths, a mortality of 27 per cent. He stated that unless serious functional disturbances arose operation was not indicated, except when there was unmistakable evidence that the tumor was undergoing rapid malignant changes.

Surgical Conception of Sigmoid Pathology.—Dr. H. D. Niles of Salt Lake City stated that chronic ulcer or its cicatrix was the cause of cancer of the bowel in 80 per cent. of all cases. Any rational treatment of sigmoid disease must be based on a correct perception of the anatomy, physiology, and pathology of that part of the bowel. To recognize and interrupt this process at the earliest possible moment and before irreparable damage had been done should be the aim of the physician. Pathology here passed from the medical to the surgical field when any ulceration or necrotic process starting in the mucosa extended to or included the peritoneum; whenever there was any evidence of mechanical obstruction, partial or complete, regardless of the cause; when a localized peritonitis existed that did not readily yield to simple measures directed to the suspected cause. The essential principle of treatment was rest. Just how this might be accomplished successfully could not be stated at this time.

Neoplasms of the Large Intestine.—Dr. A. F. Jonas of Omaha reported sixteen cases involving the colon and gave a brief description of the pathology from diagnostic points. He stated that in the diagnosis a careful study of the history was of first importance. Cramp-like pains, abdominal tenderness, palpable tumor, and obstruction of the bowel were also of importance, although the existence of these symptoms indicated only the presence of a lesion of some kind. Gurgling, distinguished by means of a stethoscope, especially after air had been injected into the rectum, was a valuable sign. He did not offer anything especially new, except a double loop ligature which he had employed for many years as an aid to suturing the bowel after resection of a part of the gut.

Dr. Dawbarn of New York advocated the use of a continuous suture, using a linen thread and the so-called morphine splint, checking all peristalsis until the union of the bowel was assured. He did not favor the use of the Murphy button or any other contrivance.

Dr. Dunsmoor of Minneapolis cited a case of ulcerative colitis in which he removed a large part of the colon down to the sigmoid flexure. He employed a button when making an anastomosis, except when he got below the small intestines; then he used the suture.

Dr. E. W. Andrews of Chicago believed in the efficacy of the Connell suture for intestinal anastomosis. He employed it not only for uniting the large and small intestine, but also in pylorectomy and gastroenterostomy.

Dr. Freeman of Denver called attention to the comparatively favorable prognosis of cancer of the sigmoid and cited a case in illustration, the patient being free from a recurrence eighteen months after removal of the growth.

Dr. McGlannan of Baltimore emphasized the occurrence of intermittent intestinal obstruction as a valuable diagnostic symptom of intestinal cancer.

Surgical Treatment of Femoral Hernia.—Dr. A. J. Ochsner of Chicago briefly reviewed the various operations now employed for the cure of femoral hernia and described a method devised by him which he used in all simple femoral hernias. It consisted in the removal of the hernial sac, the reduction of the stump within the peritoneal cavity, and the closure of the superficial wound. The hernial ring was left to close spontaneously.

Silver Wire Filigree Work.—Dr. Willard Bartlett of St. Louis reported 22 cases in which the method previously described by him had been employed with most excellent results. Of the 22 cases four terminated fatally, but from causes not connected with the operation or the implantation of the filigree. The patients lived six months, three months, ten days, and two days respectively. The method was employed in clean cases and in pus cases; it had withstood the test of pregnancy once, of tremendous ascitic accumulations in two instances; it had not interfered with the growth and development of the abdominal walls in small children, and was used twice as a prophylactic measure in cases where there seemed to be a possibility of a hernia developing. In no case did the filigree fail to perform its functions. It did not need a clean wound for its bed.

Dr. Tuttle of Cambridge had employed silver wire in fifteen cases of ventral hernia following appendicitis, in umbilical hernia and inguinal hernia, but in every instance he had later to extract the broken pieces of the wire. He was convinced that silver wire was acted on by the body juices in the same manner as any other suture material, perhaps not quite so rapidly.

Dr. Ferguson of Chicago was impressed with Dr. Ochsner's operation for femoral hernia and stated that if the

results were always as good as Ochsner stated, he, too, would employ the method. Thus far he had never seen a recurrence of a femoral hernia operated on by the radical method. He made his incision above Poupart's ligament and parallel with it and dissected out the hernia from below. He never tied off the sac without first opening it.

Dr. Dawbarn of New York saw no advantage in doing away with the sac which was a living and useful tissue. He thought it wise after dissecting it loose to carry out the Macewen method. He also described his method of operating.

Second Day—Wednesday, June 6.

Cause and Diagnosis of Gastric and Duodenal Ulcer. Dr. Frank Billings of Chicago discussed, briefly, the current theories as to the causation of ulcer, its clinical history and differential diagnosis. He said that when the classical symptoms were present the diagnosis could be made easily, but when the symptoms were not clear the diagnosis might be difficult.

Medical Treatment of Gastric and Duodenal Ulcer.—Dr. Alexander Lambert of New York stated that the first essential in the treatment of this condition was complete rest, both for the body and the stomach. This meant rest in bed and rectal feeding followed by continued rest in bed and a milk diet. The length of time necessary to remain in bed varied from a week or two in the acute cases to several weeks in the acute exacerbations of chronic ulcer. The method of feeding was described in detail. Gastric feeding should be begun before the rectum grew intolerant, and as gastric feeding was increased, rectal feeding should be decreased. Massage and a non-irritating form of iron should also be prescribed. After the patient was up and around and returned to his duties, his feeding must be supervised carefully. The bismuth cure and the olive-oil cure were also worthy of mention in the treatment of ulcer. Excellent results had been obtained by the use of a mixture of chalk, talcum, and magnesium, and by that of insoluble carbonate of lime instead of the bismuth. He stated that until the best operation and its technique were more generally agreed on, and there were published more statistics of end-results of operations, physicians could not enthusiastically adopt a surgical point of view. At present he believed that all chromic ulcers should first be treated by a careful and strict medical regimen, and if that failed and the patients could not live in reasonable comfort, they should then be subjected to an operation.

When Do Gastric and Duodenal Ulcers Require Surgical Treatment?—Dr. Wm. L. Rodman of Philadelphia stated that acute ulcers tended spontaneously to recovery and should be treated medically. Chronic ulcers were usually so from the beginning. At least 50 per cent. remained uncured by medical means, and of the remaining 50 per cent. discharged as cured at least one-half relapsed, and 25 per cent. ended fatally from perforation, hemorrhage, anemia, etc. To relieve inveterate dyspepsia of both acute and chronic ulcers surgical intervention was often necessary. If the ulcer or ulcers were at or near the plyorus, as they were in 80 per cent. of all cases, and the pylorus and duodenum were free from adhesions or could be easily mobilized, pylorectomy or excision of the ulcer-bearing area was the operation of choice. It successfully dealt with multiple ulcers, prevented possible perforation, hemorrhage, cicatrices resulting in disabling adhesions, stricture, hour-glass stomach, and malignant degeneration, leaving the organ in the best condition for future use. Gastrojejunostomy frequently gave relief, but often failed to do so. It could not prevent either pathological or mechanical changes which threatened life either directly or indirectly. Finney's operation or pyloroplasty which made a larger opening, imitated nature, and was not followed by peptic ulcer, was growing in favor and would theoretically seem indicated where there was neither fresh ulceration nor markedly impaired gastric motility.

Surgical Treatment of Gastric and Duodenal Ulcer and Its Results.—Dr. Wm. J. Mayo of Rochester stated that the complications of acute ulcer were always to be treated surgically. He reviewed 600 cases operated on in his hospital, as follows: *Acute perforating ulcer:* Gastric 7, deaths 2; duodenal 9, deaths 3. Operation within 5 hours was usually successful, but after 10 hours the majority of patients died. Treatment by transverse suture was indicated to prevent stenosis and gastrojejunostomy if the patient was in good condition. Suprapubic drainage should be established with or without irrigation, the patient being maintained in a semisitting posture for several days. *Acute hemorrhage:* Eleven cases, 1 death. The stomach should be opened and bleeding area sutured from the inner (mucous) side with catgut on a curved needle; it should be protected on the outside by musculoperitoneal sutures of linen or, if feasible, one should excise the ulcer. Gastrojejunostomy alone was unreliable. *Chronic hemorrhage:* Excision or gastrojejunostomy was efficient. *Chronic ulcer:* Gastrojejunostomy was performed 383 times, 64 per cent. of the whole. It was most useful when there was permanent interference with motility. The posterior "no loop" operation was the best; the incision beginning within three inches of the origin of the jejunum, which should be attached to the bottom of the stomach in such a manner that the distal end of the bowel was to the left; of this there had been 135 operations with 1 death. All "loop" operations with or without enteroanastomosis were obsolete. The anterior operation with Murphy button or McGraw ligature might rarely be indicated by reason of posterior adhesions or anatomical abnormalities. Gastrojejunostomy was not a cure-all. If motility was normal, if the pylorus was open, and if no dilatation existed, muscular action continued to force food out by the natural channel rather than through the artificial opening. *Gastroduodenostomy of Finney:* 72 cases, 4 deaths. There was a growing field of usefulness of this operation. It left an opening in the natural situation and the lines of drainage were downward along the greater curvature. It was most useful in cases of mucous ulcer and loss of motility due to spasm. *Excision of ulcer:* 14 cases, no death. This was indicated for ulcer on the lesser curvature without obstruction or dilatation. It might be combined with the Finney operation when the ulcer was close to the pylorus. *Rodman's operation* (resection of pyloric end of stomach with independent gastrojejunostomy): 7 cases, no death. This was indicated in cases of calloused ulcers. *Resection of stomach,* removing entire diseased area: 12 cases, all recovered. This was indicated in hourglass contractions and calloused ulcers involving the body of the stomach in which there was a suspicion of malignancy. Generally speaking, failure of operation to cure gastric and duodenal ulcers was usually the result of defective technique or bad choice of method.

Dr. J. C. Hemmeter of Baltimore called attention to a method of diagnosis employed by him with great success. The patient was given a large dose of bismuth, and the stomach was then washed out and *x*-rayed. The bismuth adhered to the ulcerated surface and was seen very plainly as a shadow on the plate. Another method of diagnosis was to administer about 8 grains of orthoform in 8 ounces of hot water. This mixture would promptly ease the pain if due to gastric ulcer, but would not affect the pain of gallstones. He believed that in cases of uncomplicated ulcer surgical treatment was not indicated. Only when complications ensued should the patient be referred to the surgeon for operation.

Dr. A. P. Francine of Philadelphia called attention to the fact that many conditions might simulate ulcer very closely, so much so that a mistake in diagnosis might be made. A study of post mortem records had convinced him that tuberculosis did not enter into the causation of ulcer at all. Out of 143 patients dying from advanced tuberculosis there was no case of acute gastric ulcer. He thought that many cases of gastric ulcer produced symptoms so slight that they went unrecognized.

Dr. Stanley Black of Pasadena referred to the occurrence of pentosuria as a diagnostic point of importance. Instead of putting the test for occult blood last, he placed it first.

Dr. Spivak of Denver advised giving the stomach absolute rest and also the intestinal tract so that the peristaltic movements of the intestines produced by rectal feeding would not cause the stomach to move in any way.

Dr. McCaskey urged the individual treatment of each patient instead of trying to make the case fit a routine treatment.

Indications for Surgical Intervention in Infections of the Biliary Tract.—Dr. John B. Deaver of Philadelphia detailed the indications for operation and cited the statistics of 216 cases operated on by him at the German Hospital, dwelling especially on the complications and the results of operation.

Surgical Treatment of Exophthalmic Goiter.—Dr. F. J. Shepherd of Montreal reviewed the various methods of surgical intervention in this affection, and stated that the only method worth considering at present was removal of half or more of the gland. Early operation was imperative, and especially in those cases in which the enlargement of the gland was chiefly on one side and had preceded the advent of the nervous symptoms. In extreme cases of exophthalmic goiter when the disease was very rapid in its course and the right heart was dilated, other than surgical measures had better be adopted. In nearly all cases removal of a portion of the thyroid was beneficial. Eighteen cases were reported, three of the patients dying from thyroidism soon after operation. Eight patients were cured completely. The average age of the patients was twenty-eight years, the oldest being fifty-three and the youngest fourteen years of age.

Treatment of Exophthalmic Goiter by a Specific Serum.—Drs. John Rogers and S. P. Beebe explained the preparation of the serum employed and reported the results of treatment in forty-one cases. (See Medical Record, February 24, 1906, p. 322.) Eight patients were cured, twenty-five improved, six proved failures, and two died. Cases of others: Twenty-eight; three cured, sixteen improved, and nine failures. Personal cases of typical chronic goiter: Two cured, fourteen improved, and three failed. Atypical thyroidism: Three cured, three improved, three died. Acute and chronic toxic thyroidism: Two cured, six improved, two died. Psychopathic and neuropathic exophthalmic goiter: One cured, two improved, one failed.

Indications for Prostatectomy and Its Results.—Dr. A. H. Ferguson described his method of perineal operation which has been described previously on several occasions.

Clinical Significance of Variations of Wrist and Ankle.—Dr. Thomas Dwight of Boston said that these variations were of great importance both clinically and medicolegally. The increased number of bones might be due to persistence of embryonic elements which normally fused or disappeared; thus one bone may be represented by two. Fusion of usually distinct parts might occur at definite points. Through variations of development bones might have different or abnormal relations. The overdevelopment of processes usually small or absent gave many illustrations of such variations. Although the causes were diverse and imperfectly known and although some variations were common and others were rare, it was important that they occurred at certain definite points. Though they were not originally the effect of lesion, yet an extra bone generally was a point of diminished resistance and hence not uncommonly the seat of lesion.

Appendicostomy.—Dr. James P. Tuttle reviewed the origin of this operation by Dr. Weir, described the method of its performance, and cited instances in which it had been employed successfully, especially in ulcers of the bowel and in amebic dysentery.

Cardiac Stimulation for Suspended Animation by Direct Digital Manipulation.—Dr. B. Merrill Ricketts of Cincinnati stated that of eighteen patients in whom inthrathoracic transpericardial massage had been performed, four recovered completely, seven lived from one minute to twenty-four hours, and in seven the pulse never returned. Of the nine patients in whom subdiaphragmatic transperitoneal method had been resorted to, five continued to live, in two heart pulsation was restored for a short time, and in two the heart beat was not restored. The cessation of the heart beat for one minute was sufficient to justify direct digital cardiac massage after the ordinary means had been applied.

IMPROVED CATAPHORIC ELECTRODE FOR HIGH POTENTIAL CURRENTS.

By WILLIAM J. MORTON, M.D.,

NEW YORK.

In the issue of the Medical Record of November 18, 1905, I published a description of a vacuum tube for phoric medication. A deficiency of all such electrodes is that the bulk of the current passes at the periphery of the flat disk. To obviate this I have elongated the entering metallic conductor to the region of the flat surface and have made it a sharp point. (See Fig. 1.)

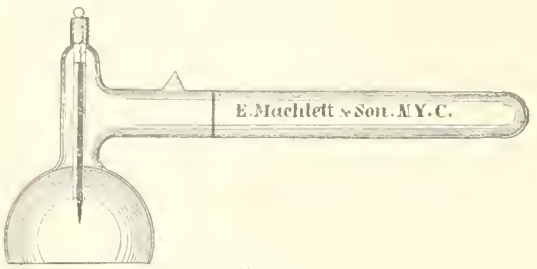


Fig. 1.

Again, if desired, I attach a thin metallic plate of tinfoil or other metal upon the outer side of the glass upon its flat side. The diameter of this plate is considerably less than the diameter of the circular and flat surface of the electrode. (See Fig. 2.)

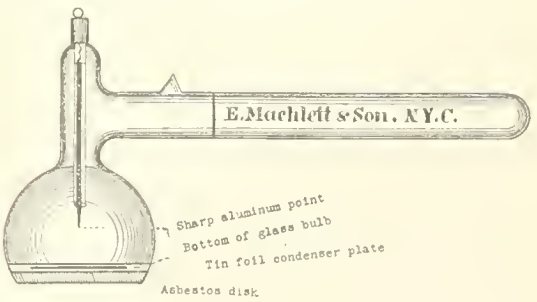


Fig. 2.

As now arranged the current's action is concentrated to this flat surface of the electrode and the cataphoric action is correspondingly enhanced. But the tinfoil adds to the pain of the application and I prefer to use the sharp-pointed electrode without the tinfoil condenser, namely, as illustrated in Fig. 1.

Adrenalin in the Macular Disease of Werlhof.—Augusto Cianni concludes that the use of adrenalin is of great value in Werlhof's disease. In this affection, the tone of the vessels is very much reduced, as is indicated by the abundant hemorrhages from various organs; hence the use of a drug that tones up the vessels is indicated. In a case treated by the author adrenalin carried out this indication in a wonderful manner, and he advises its use as a matter of experiment in cases of this nature. The patient received hypodermic injections of adrenalin 1-1000 for two weeks. Recovery was rapid and complete.—*La Riforma Medica.*

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery.	Montgomery	July 1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	July 2
Arkansas*	J. P. Runyan, Little Rock	Little Rock	July 10
California	Chas. L. Tisdale, 530 California Street, San Francisco	San Francisco	August 21
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July 3
Connecticut*	Chas. A. Tuttle, New Haven.	New Haven	July 10
Delaware	P.W.Tomlinson, Wilmington.	Dover	June 19
Dis. of Col'bia	W.C.Woodward, Washington.	Washington	July 12
Florida*	J. D. Fernandez, Jacksonville.	Jacksonville	October 17
Georgia	E. R. Anthony, Griffin.	Atlanta	October 9
Idaho	J. L. Conant, Jr., Genesee	Lewiston	October 2
Illinois	J. A. Egan, Springfield	Chicago	July 11
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October 23
Iowa	J. F. Kennedy, Des Moines.	Des Moines	September
Kansas	T. E. Raines, Concordia	Kansas City	
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October 23
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	October 19
Maine	Wm. J. Maybury, Saco	Augusta	July 10
Maryland	J. McP. Scott, Hagerstown.	Baltimore	June 20
Massachusetts*	E. B. Harvey, State House, Boston	Boston	July 10
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Lansing	October 9
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	October 2
Mississippi	J. F. Hunter, Jackson	Jackson	October 9
Missouri	J. A. B. Adcock, Warrensburg		
Montana*	Wm. C. Riddell, Helena	Helena	October 2
Nebraska	Geo. H. Brash, Beatrice	Lincoln	
Nevada	S. L. Lee, Carson City	Carson City	August 6
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July 6
New Jersey	E. L. B. Godfrey, Camden.	Trenton	June 19
New Mexico	B. D. Black, Las Vegas	Santa Fe	
New York	C.F.Wheelock Univ.of State of New York, Albany	New York, Albany Syracuse, Buffalo,	June 19
N. Carolina*	Geo. W. Pressly, Charlotte.	Charlotte	
N. Dakota	H. M. Wheeler, Grand Forks.	Grand Forks.	July 3
Ohio	Geo. H. Matson, Columbus.	Cincinnati, Cleveland, Columbus,	
Oklahoma	J. W. Baker, Enid	Guthrie	June 27
Oregon*	B. E. Miller, Portland	Portland	July 11
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia Pittsburg,	June 19
Rhode Island.	G. T. Swarts, Providence	Providence	July 5
S. Carolina	W. M. Lester, Columbia	Columbia	
S. Dakota	H. E. McNutt, Aberdeen	Watertown	July 11
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May, 1907
Texas	T. T. Jackson, San Antonia.	Dallas	
Utah*	R. W. Fisher, Salt Lake City.	Salt Lake City.	July 2
Vermont	W. Scott Nay, Underhill	Burlington	July 10
Virginia	R. S. Martin, Stuart	Richmond	June 19
Washington*	C. W. Sharples, Seattle	Tacoma	July 3
W. Virginia*	H. A. Barbee, Point Pleasant.	Charleston	July 10
Wisconsin	J. V. Stevens, Jefferson	Madison	July 10
Wyoming	S. B. Miller, Laramie	Cheyenne	

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

The National Confederation of State Medical Examining and Licensing Boards held its sixteenth annual meeting in Boston, on Monday, June 4. The following officers were elected: *President,* Dr. Edward B. Harvey of Boston; *Vice-Presidents,* Drs. A. Walter Suter of Herkimer, N. Y., and George W. Webster of Chicago; *Secretary and Treasurer,* Dr. Murray Gault Motter of Washington, D. C.

California.— The *Southern California Practitioner* makes a suggestion with reference to the State examination that each examiner should give in each subject fifteen questions, with choice of ten. Such a practice would relieve the Board of the charge of giving catch questions and would prevent the sympathy of the public or of the courts being extended to a disappointed applicant. If the public were informed that fifteen questions had been given and that the applicant failed to get the required 75 per cent. on the ten questions of his own choosing, little sympathy would be extended to him.

Maryland.—The Board of Medical Examiners of this State has had printed a complete alphabetical list of all the physicians who are registered in Baltimore City. This will be a material help in the endeavor to keep out irregular and unlicensed practitioners.

South Carolina reciprocates, under certain conditions, with Illinois, Kansas, Maine, Maryland, Michigan, Minnesota, Nevada, New Jersey, Ohio, Texas, Virginia, Wisconsin, and Wyoming.

Wisconsin reciprocates, under certain conditions, with District of Columbia, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Virginia, and Wyoming.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending June 9, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	378	174
Diphtheria	313	43
Measles	808	31
Scarlet Fever	188	10
Smallpox	1	—
Varicella	96	—
Typhoid Fever	23	8
Whooping Cough	53	7
Cerebrospinal Meningitis	21	22
Malarial Fever	.....	.....
Totals	1,881	295

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending June 9, 1906:

			CASES.	DEATHS.
SMALLPOX—UNITED STATES.				
California, Stockton	May	1–31	3	..
Roseville	May	24	1	..
District of Columbia, Washington	May	19–June 2	18	1
Florida, General	May	26–June 2	2	..
Jacksonville	May	26–June 2	7	..
Georgia, Augusta	May	21–28	2	..
Illinois, Chicago	May	26–June 2	2	..
Galesburg	May	26–June 2	1	..
Indiana, Indianapolis	May	20–June 3	2	..
Louisiana, New Orleans	May	26–June 2	17	..
Missouri, Carthage	April	3–June 4	10	..
St. Louis	May	26–June 2	1	..
Nebraska, Omaha	May	26–June 2	1	..
New Jersey, Jersey City	May	27–June 3	2	..
New York, Monroe	May	14	1	..
New York	May	26–June 2	10	3
North Carolina, Greensboro	May	26–June 2	1	..
Ohio, Cincinnati	May	25–June 1	11	..
Toledo	May	19–26	1	..
Pennsylvania, Philadelphia	May	26–June 2	1	..
Pittsburg	May	19–26	4	..
Tennessee, Memphis	May	19–26	6	..
Nashville	May	26–June 2	1	..
Texas, Houston	May	19–June 2	2	..
Utah, Ogden	May	31	2	..
Wisconsin, Appleton	May	26–June 2	2	..
La Crosse	May	19–26	1	..
SMALLPOX—INSULAR.				
Philippine Islands, Manila	April	7–21	4	..
SMALLPOX—FOREIGN.				
Brazil, Rio de Janeiro	April	22–May 13	4	1
Canada, St. Thomas	May	26–June 2	6	..
Toronto	May	12–26	6	..
China, Hongkong	April	7–21	21	13
Germany, Bremen	May	12–19	2	..
Gibraltar	May	13–20	2	..
Great Britain, Bristol	May	12–19	2	..
London	May	12–19	2	..
Newcastle-on-Tyne	May	12–19	2	..
Greece, Athens	May	13–20	..	2
India, Bombay	May	1–8	..	16
Calcutta	April	21–28	..	99
Madras	April	28–May 4	..	16
Rangoon	April	21–28	..	35
Italy, General	May	10–17	29	..
Russia, St. Petersburg	April	29–May 12.	14	11
Spain, Barcelona	May	13–20	..	11
YELLOW FEVER—UNITED STATES.				
Mississippi, Gulf Quarantine	June	4–6	3 on S. S. *Whitehall* from Colon.	
YELLOW FEVER—FOREIGN.				
Brazil, Rio de Janeiro	May	6–13	1	3
Cuba, Habana	June	7	1	..
Mexico, Coatzacoalcos	May	19–26	1	1
Merida	May	13–19	2	1
CHOLERA—INSULAR.				
Philippine Islands, Manila	April	7–21	26	22
CHOLERA—FOREIGN.				
India, Bombay	May	1–8	..	25
Calcutta	April	21–28	..	126
PLAGUE—INSULAR.				
Hawaii, Honolulu	June	3	..	1
Philippine Islands, Manila	April	14–21	1	1
PLAGUE.				
Australia, Brisbane	April	14–21	2	1
Rockhampton	April	5–12	4	1
"	April	14–21	4	3
Brazil, Rio de Janeiro	May	6–13	1	1
China, Hongkong	April	7–21	65	60
India, General	April	21–28	17,855	15,633
Bombay	May	1–8	..	862
Calcutta	April	21–28	..	167
Rangoon	April	21–28	..	60
Japan, Kobe	April	14–May 8	6	7

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 25.
Whole No. 1859.

NEW YORK, JUNE 23, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

SOME OBSERVATIONS ON PROSTATECTOMY.

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THERE is no question as to the value of prostatectomy. The relief which it affords is incalculable. The management of the patient both before and after the operation and the technique of the operation itself have been so improved that the death rate has been materially reduced and a fair proportion of the patients make an uneventful recovery. But the question may well be raised whether the operation is not being done unnecessarily and without a proper consideration of the cases. The histories of patients obtained in consultation or culled from the literature show that significant symptoms have been unappreciated or overlooked. Small prostates have been removed from patients (somewhat on the principle of "not knowing what else to do for him") whose only symptom was diurnal and nocturnal frequency, with few or no signs of obstruction, leaving them unimproved and in some instances worse than before the operation. In such cases it does not seem to have been appreciated that the capacity of the bladder of the patient had been so reduced by chronic interstitial cystitis that it could not hold over three or four ounces, that, therefore, urination every two hours had become a necessity, and operation could not avail. At least three such post-operative cases left in worse condition than they were before the operation have come under my observation. Again, in reviewing some cases in the literature I find the history of a patient who had been subjected to prostatectomy, in whom there had been frequent and painful urination, some blood in the urine, but, only two drachms of residual urine and a stone in the bladder. Further, there are men, particularly among the higher classes, approaching sixty years of age, with habits of high living or with some form of sexual abnormality, or with both, who come complaining of discomfort in the urinary apparatus, with nocturnal frequency of urination and some residual urine. In these cases besides a small or moderate organic enlargement, there will be found an engorgement or moderate grade of inflammation of the prostate, which, under hygienic living, with regulation of the sexual relations, and exercise, together with some local treatment, will subside, resulting in such a diminution of the symptoms that the necessity for catheter life, still less for radical treatment, may never arise. Each case must be studied by itself, but the number of such who actually never come to operation is not small. It seems to me to be more scientific to have such patients report for observation at longer or shorter intervals, instead of establishing the formula, "The patient has an enlargement of the prostate, therefore he must be operated upon."

In illustration, take the following case of a man who has never had complete retention of urine, but who has unmistakable enlargement of the prostate of a minor grade and who has been advised to have prostatectomy done. (In the following cases, in order to be brief only the essential details will be given.)

A married man, aged 62, temperate as regards alcohol and sexual relations, for several years has had some "discomfort," not pain, in the region of the bladder, together with some diurnal and nocturnal frequency of urination. His urination has varied from once to a maximum of four times at night, and diurnally, from once in two hours to once in six hours. There was also hesitancy in starting the stream. For these symptoms, six years ago he consulted a prominent German surgeon, who examined him, passed into him a metal instrument, hurt him extremely, caused some blood to exude, and advised him to have his prostate removed. With dread of an operation depressing him, he was sent to me by Dr. W. T. Bull. Rectal examination shows the prostate to be twice normal size, regular in outline, soft, very tender, especially at the posterior margin, and pressure along the median line elicits an intense burning sensation. The urethral length is nine inches. The residual urine is two ounces. His urine is perfectly clear and subsequent microscopical examination shows it to be normal. A history of unnatural sexual indulgence is obtained from him. Under local and general treatment the frequency of urination diminished, the hesitancy disappeared and his nocturnal urination was reduced to once. It remains so, and he is able to expel all of a measured quantity of fluid injected into the bladder. He willingly comes for observation once in three or four months.

The degree or form of the organic change and related symptoms, together with the intellectual and social condition of the patient, as well as his immediate environment, ought to be studied before deciding as to the mode of treatment. It may be argued that, independently of the degree of enlargement, the primary retention of urine is sufficient indication for radical treatment; but my observations lead me to think that this is not necessarily the case. Spontaneous urination may be restored, and the patient may go on for several years without another attack of retention, in the meantime maintaining sterile urine. Simple measures may relieve the congestion which produced the retention, and the residual urine may be gradually reduced to an insignificant amount.

To emphasize this proposition take the following case:

A married man, aged 71, with four children, the youngest being 32 years of age. Twenty-four hours before I was summoned to this patient by his family physician, he had had a sudden retention of urine which persisted for hours. He was finally catheterized by the physician's assistant, who was called to him in the night and drew off twenty ounces of urine. I found him twenty-four hours later in great

distress, suffering complete retention and frequent ineffectual tenesmus. He was not able to void even a drop. This condition had recurred within a short time after the first catheterization. Percussion over the hypogastrium showed flatness up to an inch below the umbilicus. Rectal examination showed the prostate to be four times the size of the normal, enlarged in all directions, and exquisitely tender. It was learned that for several years the patient had had nocturnal urination, usually two or three times between retiring and rising. Aided by local anesthesia the catheter was easily and painlessly introduced. The length of the urethra was found to be ten inches. In brief, the overdistention was gradually relieved, the catheter being passed every six hours, and measures were taken to relieve the congestion, which had evidently been superinduced upon a chronic enlargement of the prostate. On the fourth day the patient passed a few drops of urine spontaneously. On the sixth and seventh days he passed four ounces. Catheterization was now reduced to once in eight hours. From this time on there were increased quantities of urine voided spontaneously, and the catheter was used less frequently till, on the eleventh day, spontaneous urination took place every hour and a half, and the residual urine varied from one to three ounces. This patient was seen subsequently at intervals and treated first, twice a month, then once in two months, and finally once in six months. In consequence, whereas before his attack of retention he was obliged to urinate three times in the night, he now urinates but once, holds his urine four hours in the day and has now but half an ounce of residual urine, which remains sterile. He is able to void all but half an ounce of a measured quantity of sterilizing fluid injected into his bladder. He has still an enlarged prostate, a urethra of nine inches; but there has been restored to him a compensatory vigor of the bladder which is sufficient to enable him to overcome the obstructive effects of the prostate. Such patients should not be hurried and urged into operation, because in their misery they will consent to anything, but they should be examined at intervals and careful records kept that the golden moment may not be lost should the bladder begin to fail and thus the indications for operation arise. It is not uncommon to receive a patient who brings a letter from his attending physician containing such a statement as, "The patient has had retention of urine due to an obstructive enlargement of the prostate, and in my opinon ought to be operated upon without delay. I would like your opinion in regard to the matter."

On examining such a patient there was found a urethra of eight and a quarter inches in length; no palpable enlargement of the prostate by rectal exploration, and a steel searcher entered the bladder easily without deflection and without depression of the handle. The patient had a group of symptoms extremely suggestive of the premonitory stage of locomotor ataxia with unusual prominence of the bladder symptoms. In my opinion, before operating upon such a patient he should be kept long enough under observation to determine this, and whether or not any operation can benefit him. Too much stress cannot be laid upon the necessity for a careful preoperative diagnosis. This is so important in our opinion that, before a decision to operate is arrived at in doubtful cases, I and my associates, Drs. Pedersen and Squier, give each case individual consideration, and operation is not advised until there is an agreement of opinion, the patient being kept meanwhile under observation with tentative treatment. For example, in the following case I personally objected to operation. My associates disagreed with me, and the further progress of the case showed that they, and Dr. Squier particularly, under whose personal care the patient had been, were correct:

He is aged 57. For several years he had had attacks of frequent urination, sometimes of a very annoying character, during which, as he described it, he would be obliged to run suddenly to the toilet. At the time that he first came under observation his nocturnal urination was from three to five times, but when he had one of his bad attacks he urinated as often as ten or twelve times in the night; in the day time he could occasionally go six hours without urinating. In addition there was urgency and slowness in starting the stream, and occasionally incontinence. At his first examination it was found that he had a urethra of 7¾ inches and eight ounces of residual urine. The prostate was peculiarly prominent in the rectum, but not markedly enlarged. Cystoscopy revealed a moderate intravesical projection of the prostate in all directions. There was a moderate grade of cystitis present. The rugæ of the bladder were prominent, and the least touch would cause the mucous membrane to bleed. This man's prostatic enlargement seemed to me to be slight, and as there was a very decided neurotic element in the case, I advised at that time against operation, urging that he should take a long rest from business pressure and that his treatment should be tentatively palliative. This was persisted in for about six months, when, his condition being no better, we agreed as to the necessity for operation, and the prostate was removed by the perineal method. He was up at the end of the fifth day, the perineal wound healed in three weeks, and a week later he was sent off for a trip to the country. His improvement after this was progressive. He is now able to hold his urine seven or eight hours. Notwithstanding the delicacy or sensibility of his nervous system, he has retained his arduous occupation, and, although at times under the stress of the latter he secretes a large volume of urine, he is able to void it freely and easily and to empty his bladder absolutely, but occasionally there is a little nocturnal incontinence.

There are patients in whom it would seem that prostatic enlargement of minor degree, coupled with a neurotic temperament, if not with true neurasthenia, excites such a grade of disturbance in the enervation of the bladder and prostate, that the symptoms of obstruction are much more pronounced than would be expected from the degree of obstruction present. The foregoing seems to me to fall into this category. The following recent case also has elements of the same nature and is instructive in other ways:

A married man, aged 59, of refined, even delicate, constitution, was referred to me by Dr. A. A. Smith. In September, 1895, he had an attack of retention of urine following a prolonged postponement of urination, but finally succeeded in emptying his bladder. His second retention took place in London some time afterward, at which time a catheter was first used. He was confined to bed, and evidently had a rise of temperature. He returned home with an infected bladder and placed himself under the care of his family physician. I saw him in consultation and searched for calculus, with negative result. Eventually he recovered from his cystitis and remained well until October, 1899, when, after a period of worry, retention again occurred. The catheter was then used for a few days, and the urine, which was purulent, again cleared up under treatment. He had another attack in 1903 and again in March, 1904, when, after occasional forcible postponement of urination during a period of three or four days, retention again developed. Successive attacks of retention then took

place at increasingly frequent intervals. His physician taught him to use the catheter with careful attention to all antiseptic details. He was intelligent, deft with his hands, and was able to maintain perfect aseptic conditions. A succession of retentions now followed in rapid order, but on each occasion he relieved himself with the catheter, although on two or three occasions he suffered several hours from overdistention before he could conveniently catheterize himself. He is one of those who cannot void his urine in the presence of another, and even when he is alone in the toilet he fails to evacuate his bladder if he knows that someone is waiting. Rectal examination shows a full, round, elastic prostate, slightly tender, and approximately as large as, and of the same contour as, a small orange. His bladder easily tolerates 12 to 16 ounces of urine. The urethra is 8½ inches in length, and there are three ounces of residual urine, which is clear, but with a few flocculi floating in it. There is no projection of the stream of urine, which drops directly down from the mouth of the catheter, and suprapubic pressure is required to obtain the last ounce of the residual urine. Under local treatment the frequency of urination was diminished and the intervals between his attacks of retention lengthened; but the amount of residual urine remained about the same. Any stress upon his nervous system, for example, business pressure or the illness of some member of his family, would increase the difficulty of urination and precipitate an attack of retention, which sometimes would occur suddenly in the middle of the night, but he was always able to relieve himself with the catheter. He now went off to the country, and for three weeks there was no necessity for catheterization. He urinated only once or twice at night, and seemed to be in very good condition, but a change of temperature gave him a chill, which induced an attack of diarrhea, and the necessity for the catheter suddenly arose. He had an onset of pain in the bladder, had to urinate every hour, and the local physician reported to me that he had blood in the urine. This had never occurred before. Under simple treatment the cystitis slightly improved; but he suffered a relapse and the frequent and painful urination persisted. Blood continued in the urine; the least touch of the catheter in the deep urethra and the bladder would induce a flow of bright red blood, and small clots were passed from time to time. Cystoscopy was attempted with local anesthesia. The bleeding was so free that the view obtained was not satisfactory, but stone in the bladder was excluded. As his symptoms persisted and he was progressively running down and losing weight and strength, it was deemed advisable to attempt cystoscopy under general anesthesia and be governed by the condition found. This was undertaken, but the free bleeding interfered, and accordingly the bladder was opened above the pubes. The prostate was found moderately enlarged in all directions and there was a conical cockscomb-like projection of the middle lobe into the bladder. All over the posterior and lateral walls of the bladder were sessile, rounded, nodular masses, smooth to the exploring finger, not hard, but firm. In the right lateral aspect of the lower hemisphere of the bladder was an ulcer with a yellowish base, from which blood exuded. A section of this diffused new tissue was taken for histological examination. The prostate was entirely removed. The very free hemorrhage was perfectly controlled by gauze tampons. The patient soon rallied from the slight shock and continued doing well till the fifth day after the operation, when a state of extreme debility suddenly developed and, with no rise of temperature, with no evidence of sepsis, he died apparently from exhaustion.

The report of the pathologist is not conclusive, but is suggestive of neoplasm.

Although I am confronted in this case with the probability of a neoplasm being present to complicate its study, the history seems to me to bear upon the point, viz., that in a neurotic individual irritation of the peripheral nerves in the prostate, caused by its moderate or even minor enlargement, induces not only an increased functional activity of the bladder, but also of the cut-off muscles of the urethra, and that these two combine to cause not only annoying obstructive symptoms, but also serious secondary inflammatory conditions, with a consequent degree of suffering greater than can be accounted for by the degree or form of enlargement of the prostate. The opinions in this paper are based upon an experience of several hundred cases of prostatic enlargement, over a hundred of whom have been operated upon by my associates and myself, nearly fifty (49) of these being prostatectomies. Of the latter I beg leave to present the following as illustrative of the points which I wish to make:

A married man, aged 61, had his first attack of specific urethritis when he was forty-six years of age. Abortive treatment was tried by the physician under whose care he was, and, to use the patient's words, "very strong injections" were given. During the chronic stage of his malady deep instillations of nitrate of silver were made, and finally a "strong solution" was used. Intense burning followed, and three days later a prostatic abscess developed, which eventually ruptured into the urethra. He has never been well since. A chronic urethral discharge lasted four or five years, and in this period attacks of retention of urine occurred, for the relief of which he was taught to use a catheter. These attacks of retention were very irregular, coming on from once a week to once a month. Gradually the intervals lengthened, and after ten or twelve years they ceased. For the past two or three years (December, 1904) he has remained relatively comfortable. During all these years he had urinated from three to five times at night and in the daytime as often as every two or three hours. The act has been always accompanied by an agonizing sense of obstruction, against which he is forced to strain. Within the last ten years there has been a gradual failing of his sexual powers, and complete impotence has existed for the last two or three years. Palpation by the rectum shows the prostate to be much enlarged in all directions, possibly four times the normal, and the lobes are pulpy and very tender. He has difficulty in expelling urine; the stream is slow in starting, and he makes forcible expulsive efforts to overcome an obstruction of which he complains greatly. The urethral length is 9¼ inches, and the bladder contains two ounces of turbid residual urine. Subsequent examination showed that the residual urine varied from three to seven ounces, according as he was able to overcome the obstruction. Under local treatment he improved somewhat. The urine became less purulent, and his nocturnal urination was reduced from five times to three. The aching at the root of the penis and the burning sensation in the urethra of which he complained disappeared, but the sense of obstruction, although ameliorated, persisted, and, together with the nocturnal frequency, would relapse under slight provocation. There was also restoration of his sexual power to a degree and he again had successful coitus. Treatment failing to sterilize the bladder or to relieve the tendency to nocturnal frequency which disturbed his rest, or to ameliorate further the distress of each act of urination, we advised prostatectomy. The perineal route was chosen. Fol-

lowing the operation there was moderate shock, from which the patient rallied quickly, and made an uneventful recovery. He was out of bed at the end of a week, and left the hospital on the eighteenth day. He now voids his urine without hesitancy and without the agonizing sense of obstruction. He has no residual urine. He retains his erectile power and is in every way contented and happy. It is to be noted in this case that the attacks of retention early in his history were due to an inflammatory condition which gradually subsided sufficiently to enable him to dispense with the catheter, leaving the symptoms of organic enlargement well marked.

The next patient first came under our care in 1897, when he was 57 years of age. His first bladder symptoms appeared in 1892. These were great frequency of urination with violent tenesmus. His physician catheterized him, and by using the catheter once a week he was much improved, so that instead of urinating every fifteen minutes the urinary interval had lengthened to two hours; but he had some burning before the stream started and a great deal of hesitancy. At the time he came under our care he had two ounces and a half of residual urine and a urethra of $9\frac{1}{4}$ inches. The prostate was twice the size of the normal, was succulent and extremely tender. The patient returned two years later. He had done fairly well, excepting for a few days at a time. At this time the urine was purulent; there were four and a half ounces of residual urine, and the prostate was larger than at the previous examination. Business necessities detaining him, we did not see him again for another two years (in 1901), when he again reported with purulent urine. He had had no attacks requiring the frequent use of the catheter, but he used it regularly before going to bed, which saved him from urinary disturbance in the night. His prostate had evidently increased in size, and he now had twelve ounces of residual urine, distinctly purulent. He disappeared from view for about four years, then returned and stated that he was able to void urine spontaneously by allowing over a quart to accumulate in the bladder. If for any reason it was inconvenient to use the catheter he was able to keep himself moderately comfortable by these spontaneous urinations; but he used the catheter night and morning and drew off each time what he called, indefinitely, "a large quantity." In spite of this emptying of the bladder he had attacks of tenesmus which at times were violent. The urine is persistently and highly purulent. He voids, spontaneously and with the catheter, over a hundred ounces in twenty-four hours. Examination of it shows a low specific gravity and evidences of chronic diffuse nephritis. It was evident that serious back-pressure upon the kidneys was present and that the only way to relieve this and to prevent further infection of the urinary tract was to remove the obstruction. Perineal prostatectomy was done after careful and thorough antiseptic preparatory treatment. The patient made an uninterrupted recovery and was out of bed on the eighth day. He now empties his bladder normally and completely. The urine is clear, excepting for a few shreds; but he still excretes a large volume of urine, which obliges him to urinate once at night.

The next case is presented in illustration of a relapse after a Bottini operation and also for some instructive features. He was improved for a year or two after the Bottini, but gradually there developed an increased frequency of urination, the urine became muddy, and at times he had complete retention of urine lasting three or four days. Then spontaneous urination would be resumed, with, however, straining and difficulty. There was also at indefinite times a sudden unaccountable increase in the amount of pus in the urine. He was repeatedly examined very carefully, but the source of the pus could not be found. He suffered two attacks of epididymitis culminating in abscess. It now having become evident that treatment would only modify his local conditions and apprehending deterioration of his general condition we advised the radical removal of the remaining obstructing portion of the prostate. This accordingly was done, the perineal route being chosen. Enucleation was extremely difficult, because of the cicatrices resulting from the Bottini operation. Deep suprapubic pressure and forcible traction from below were required to obtain the fragments of the lobes of the prostate. When the capsule on the right side was incised and the finger introduced to separate the lobe there was a sudden gush of pus, which was estimated to be from half an ounce to an ounce or more in quantity. The source of the excess of pus in the urine from time to time was thus discovered. It should be noted here that during the course of this case there was no rise of temperature such as would lead one to the suspicion of a pus accumulation, excepting during the attacks of epididymitis. The patient was extremely prostrated for several days after the operation. He had a little rise of temperature, to 101°, which disappeared after removing the gauze drains; but he remained weak, with a rapid pulse of poor force, for five or six days, and it was not until the end of two weeks that he was allowed to sit up in bed. At the end of three weeks he was allowed out of bed and left the hospital about four weeks after the operation. He is now, nearly a year and a half since the operation, able to evacuate his bladder without straining; there is no residual urine; the urine has become clearer, but there is still a little pus in it and there is a minute perineal fistula from which a few drops escape at times. This case is instructive, as it shows the failure of the Bottini method to give permanent results in a patient whose prostate is of large proportions, and the difficulties to be met if prostatectomy should subsequently become necessary.

In a study which I made of the Bottini method in 1901 and which I read before the Medical Society of the County of New York, I said as to the permanency of the results, "time only will tell." It is possible and highly probable that if any of the prostatic tissue is left and the causes of prostatic enlargement still acting, some of these patients will have a return of their symptoms. The next case is one of four which bear upon this point, and which I have had the opportunity of examining after prostatectomy.

A married man, aged 59, who in 1901 had a high grade of cystitis, passing blood and pus in the urine and with no spontaneous urination. The catheter was always necessary as often as six times in the twenty-four hours. His prostate was removed by the perineal route by a competent surgeon, and for eighteen months he had great relief, being able to urinate spontaneously, but always retained two ounces of urine. This residual urine gradually increased in amount until some time within the past year it had increased to a pint. In June, 1905, his physician inserted a retained catheter, which was kept *in situ* for about three months. During its presence in the urethra he had bleeding and immeasurable distress; but he persisted until, finally, there being no benefit, its use was given up. Since September, 1905, he has been obliged to use his catheter at least four times a day. When his bladder is full—that is

to say, after an interval of four or five hours—he can void some urine spontaneously. Blood and clots have been detected in the urine at different times during the last year. Such was his history when he came to me in consultation. Examination by rectum shows an enlarged prostate, three, possibly four, times larger than normal, the left lobe being much larger than the right and with thick, indurated areas in it. Bimanual palpation detects a large and thick median lobe. On attempting to introduce a soft catheter, it enters a pocket or pouch posterior to the prostate and enters eleven inches before it is arrested. Fluid injected into this pouch returns by way of the urethra. A metal catheter can be introduced into the bladder by keeping its beak well up against the roof of the urethra so as to avoid the opening into this pouch. At eight inches from the meatus ten ounces of mawkish, purulent residual urine is obtained. He cannot void any of the antiseptic solution which is injected into his bladder. We advised cystoscopy as being necessary to a positive opinion as to the new tissue, and also as to mode of treatment. Apparently there has been a reproduction of the prostatic tissue with a renewal of the obstructive and inflammatory symptoms. It is possible also that a malignant degeneration may be taking place in the remnants of the prostate. In regard to this I have no diagnostic data, but in view of recent knowledge of malignant disease of the prostate this possibility should be borne in mind.

In conclusion let me add, that in deciding whether or not to advise prostatectomy we consider the following factors: the general condition of the patient, his social condition and environment, his temperament and his accessibility to judicious medical advice and assistance; whether or not catheter life is likely to fail, and if it has failed, in what degree; and further, what measure of relief is to be gained, even if after the operation some imperfection should remain, which, compared with his prior condition, is insignificant and minor. The ultimate outcome of the operation cannot be definitely foretold, but the relief and comfort are so great that when the indications are clear, it can be wisely advised.

20 East Forty-sixth Street.

THE FEEDING OF INFANTS DURING THE HOT WEATHER.*

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The heading of this paper might more properly have been: "The Feeding of Sick Infants During the Hot Weather," for most of my experience has been with babies at the clinic, where an infant never is brought for advice or any other suggestion regarding its feeding unless it is sick. Almost invariably infantile troubles are due to improper feeding, especially such feeding during the summer months. In this connection the splendid humanitarian work done by the Pure Milk fund should be mentioned. I may say that I have the means of knowing that it has been of most incalculable benefit to sick infants during the past summer, and take this occasion to thank the committee of the Pure Milk fund for what they have done for the little sufferers at my clinic.

*Read before the Wayne County Medical Society, April 2, 1906.

Most of these little patients were suffering from some form of acute diarrhea when brought to the clinic. We found just as many cases of acute diarrheal diseases among breast-fed babies as among those fed on the bottle. Indeed, 80 per cent. of our patients treated during July, August, and September were breast-fed babies.

There is an idea prevalent among general practitioners that all the mother has to do with the baby when it is afflicted is to nurse it—a theory which takes no account of the mother's own physical condition. That I may not be misunderstood, let me say that I am a strong advocate of nursing as long as is possible, provided only that the mother's condition is fit. I am always opposed to the baby being deprived of the mother's breast when there is any hope that she can provide the child with the necessary healthful sustenance. I further advise partial feeding at the breast, when no more is possible, such feeding to be continued as long as possible with good results to the patient.

Mother's milk should always be examined by the physician from time to time while she is nursing her infant, according to the simple method recommended by Holt. Holt's objections to the mother's nursing are as follows: (1) No mother who is a subject of tuberculosis in any form should nurse her infant; (2) No nursing should be allowed when serious complications have been connected with the parturition; (3) Nor if the mother is choreic or epileptic; (4) Nor if the mother is suffering from serious chronic disease; (5) Nor when experience on two previous occasions under favorable conditions has proved her inability to nurse her child; (6) when no milk is secreted.

We are considering in the main the babies of the clinic. The reading of these rules will have brought to your minds the fact that it is the indigent, needy mother who is subject to these ailments and who often brings her baby emaciated to the clinic. She has before this time been trying to nurse the babe in spite of her handicaps, unless, as rarely happens, she has been lucky enough to call in some physician who has advised her not to do so. Very often, accordingly, we have to stop this kind of nursing, and there is where our trouble begins.

The rules laid down by Holt, cited above, can be modified. Taking up the second one—if the complications following parturition have not destroyed the milk, and examination of the milk shows it to become satisfactory as the mother improves, the mother may be allowed to nurse the baby. She not only may do so, but should do so. And so with all of the rules cited—they can be modified, and it is for the practitioner to exercise his own knowledge and judgment in each particular case.

I must condemn the improper advice often given by the obstetrician or midwife who attempts also to treat the infant, the advice to the mother not to nurse her child. The child is put on some proprietary food which the accepted authority in this case has been used with good results—some particular brand of condensed milk or malted milk which has produced a fat baby. They take away from the baby a food containing the proper formula of fat, sugar and proteids and replace it with a food containing nothing but sugar, no proteid, or so little that it is invisible. The baby cries because it is hungry. The person advising the mother thereupon takes away from it the food which is at least partially sustaining it, a weak or deficient quantity of mother's milk, and gives no food at all. Fine advice, truly! Our histories of infant feeding will show how very often the physician keeps a baby on a proprietary food, the

composition of which physiologically, is very weak, and hardly capable of sustaining life. I hope the time will come when the obstetrician will attend to his work exclusively, and when there is any question about the feeding, will call in the man who has put in a good deal of time and acquired experience in this special work. I always advise that the child be nursed, and it is surprising in how many instances persistence will prove the wisdom of this advice, despite the mother's original complaint that she has been unable to nurse the child on account of lack of milk in the breasts, or because the child will not take nourishment for some other cause. I meet very often with these cases in which the babe refuses to take the breast at first, but persistence even to the extent of letting the little one go hungry brings success.

When we have to feed the infant artificially, the wet nurse is generally the first recourse, as you well know. For reasons which I will mention, however, it has long been a question in my mind whether I would not rather utilize the laboratory milk properly prescribed. The ideal wet nurse exists only in our imagination in this country. In the old country, with a peasant population, healthy in body and animal-like in mind, wet nurses are found to give satisfactory services. In this country it is rare to find a good wet nurse, free from disease, and when one such is found she has so great an appreciation of her importance to the family that she generally becomes unbearably independent. With all these drawbacks, where no breast feeding is possible, or only partial breast feeding, I favor laboratory percentage feeding. And, as above stated, it is when we put the baby on artificial food that our real trouble begins. The surgeon has been telling us what he has done in the last century. How easily he can open the abdominal cavity and remove the appendix, ovaries, and other organs without any trouble if he is clean. But the task that falls upon the pediatrician is to feed a baby deprived of its natural food, the breast, in the summer months, the child presumably afflicted with a severe form of iliocolitis, with bloody, shreddy, green stools every ten minutes, vomiting, great prostration, a high fever, the child reduced in a few hours to almost nothing, while on top of this there are mother, grandmother, perhaps, and other interested parties to combat his scientific work and formula—all this raises a situation that truly requires the exercise of intelligence, patience, hard work, and diplomacy.

It is to Rotch, who has practically given us the percentage modification of cow's milk, modified and fixed for us in a well-equipped laboratory, that our thanks are due for extricating us from this trouble. In this laboratory the physician can with care modify and write a proper prescription that will suit each individual case, saving the unfortunate infant which nature has crippled by depriving it of its mother's milk. To Rotch, indeed, is due the credit for having saved for their country so many little ones who have grown up to become beautiful men and women, some of them saved, as a matter of fact, for the surgeon, who can later remove their appendix. Seriously, he helps to save the Nation from retrogression. What else would result with our American woman, with her race-suicide tendencies, and our poor immigrant children dying off from improper feeding?

Of the troubles contended with in the case of infants during the summer months, diarrhea is the most common. The classification by Dunn, of Boston, based on the clinical aspect of this trouble, is a very good one. He notes five phases of the affection: (1) Acute nervous diarrhea, loose stools, normal color, and odor, without abnormal constituents; (2) Irritative diarrhea, no fever, curds, and undigested masses; (3) Fermental diarrhea, no fever, green stools, sour odor; (4) Infectious diarrhea, fever and signs of ilioclitis, blood, and mucus; (5) Cholera infantum, or diarrhea due to heat exhaustion.

Dunn says that the second and third of these classifications are the more common. But last summer we had every type mentioned, and found that the third and fourth, fermental and infectious diarrhea, were the most common. The infection is due to the introduction of bacteria from without or to autoinfection from bacteria in the intestines. Dunn's classification is one that I like very much, as it makes diagnosis comparatively easy.

At the clinic last summer two groups of diarrhea were prevalent. There were: Cases characterized by green stools, often with a sour odor, but no fever (classed above as fermental diarrhea); stools green and mucous, or maybe also symptoms of iliocolitis, and always fever. Both of these groups occurred in breast-fed as well as artificially fed babies. Our treatment last summer was the same as that of the summers preceding—first, to stop all feeding and give the patient a good dose of castor oil. Calomel was given in some cases, but oil was preferable, as it seems to have a quicker and more beneficial effect on the gastrointestinal tract after the first unpleasant taste, while calomel often produces a great deal of straining and is slower. Infants under one year old were given two or four teaspoonfuls of oil or calomel and bicarbonate of sodium, one and one-half to two and one-half grains in divided doses, and no food but boiled water was given, and that in small quantities frequently for the first twenty-four hours. The second twenty-four hours the child was put on a little weak whiskey water, a teaspoonful to the pint, or a little barley or rice water, an ounce to the pint, strained. As the temperature would drop to normal and the child would get very hungry, it was gradually placed at the breast, if a breast-fed infant. It will not be necessary to more than mention that the milk of the mother or the wet nurse has to be carefully examined and any defect corrected, as it varies so often.

When the infant was bottle fed we were frequently puzzled as to what course to pursue. My experience with the ordinary milk sold in the city during the past seven years has been very unsatisfactory. I used to stop the giving of milk entirely, for both infants and other children, keeping them during the hot days of the summer months on cereal waters, beef juice, etc., for a while. Since the establishment of the Walker-Gordon laboratory, a great deal of responsibility has been taken off the physician's shoulders. This was especially true last summer, the pure milk supplied to different classes of people making it available for the poorest baby.

As you all know, Walker-Gordon milk means nothing more than a clean milk that we can prescribe as required for our patients' digestion. It is necessary to note, however, that the laboratory milk prepared simply from the book formulas will not do the work. The physician has got to adjust a formula to the digestive capacity of the infant, and very often we have to change it so as to attain the results. We study the principal constituents of the milk—fat-carbohydrates, proteid, separately. We study the trend of symptoms asociated with overfeeding, with the amount of each principal ingredient in the milk, as, for instance, the fat constituent of the milk. We study clinically the effect of too much fat, or too

much sugar or proteids, or of the divided proteids. We also study clinically the symptoms and effect on the child when fed on a deficiency of all three or any one single constituent of the milk.

First, Fat.—The average amount a healthy baby can digest is from 2 to 4 per cent., and it is usually not necessary to increase it above 4 per cent. In the summer months moreover, the child will get along better with 2.5 to 3 per cent. of fat. Now, let us see what an excess of fat will do. It will produce vomiting or regurgitation of food in small quantities about one hour after feeding. Diarrhea, with stools lumpy and colicky, foul smelling, olive green and formation of gas. Jacobi says excess of cow's fat produces acid autointoxication in infancy. I give very little fat, he adds, as a food, say 2 per cent. or less Holt, in (*Archives of Pediatrics*, January, 1905) speaking of disturbances of digestion in infants resulting from the use of too high percentages of fat, reports five interesting cases involving overfeeding with high fat percentages. In these cases there was a rapid increase in weight and apparent development for a while until the infant was about eight months old, then ensued convulsions, followed later by tetanus, laryngismus, stridulus, fatty liver, etc. All five of the cases he reports had convulsions, acute disturbances of digestion, vomiting, constipation, etc. Jacobi, discussing Holt's paper above quoted, asks: What is it that permits little babies to tolerate so much fat that older babies cannot tolerate? But it is not true that little babies can tolerate fat to any such extent. When they can tolerate fat no longer they break down. He says, further, that it is not low fat percentage that causes constipation, but that the constant feeding of low proteids produces insufficiency in the muscle walls which causes constipation. Northrup says, on this point, that too much fat causes vomiting and whitish passages. And in spite of this showing, some physicians increase the fat percentages as soon as the baby is found to be constipated. Now, regarding the effect of too little fat. Fat helps in the production of animal heat. It also adds to the body weight by storing up fat in the body needed for the growth of bone, nerve cells, and fibers. When fat is greatly reduced inorganic salts appear in large quantities in the feces; for fat aids in the absorption from the intestines of the inorganic salts. Thus, too low percentage of fat causes hard, dry stools and a good deal of straining, followed by its consequences, prolapses of the rectum, etc.

Next, as to the proteids, I find that from 1.5 to 2 per cent., or, for a child over a year old from 3 to 5 per cent., is proper. You are all more or less conversant with the ill-effects of feeding with an excess of proteids. Besides this question of excess, we must also take account of the fact that the proteid in cow's milk differs from the proteid found in woman's milk; and in changing from the latter to the former Holt advises four different methods: (1) by reducing the proportion; (2) partially predigesting by peptonizing; (3) separating them by removing the casein by coagulation with rennet; (4) using as a diluent not water, but gruels, cereal waters, etc. All that is involved in these recommendations the laboratory now accomplishes for us. You prescribe proteids, whey, and caseinogen. Now, to consider the question of excess of proteids. The result of this excess is colic, the presence of curds in the stools, and if the excess is great, the result is constipation; if less, diarrhea, vomiting, regurgitation of small quantities of food at times, and if the excess is continued there follow gastroenteric symptoms, convulsions, and other nervous disturbances. And there are these symptoms if the digestion of the proteids is not perfect, even if the quantity for the age of the infant is correct. Accordingly, as much should be given as the baby can digest, regardless of the formula. Begin always with a low percentage of proteids and gradually increase it as the infant's digestion permits. Proteid is, of course, essential to life, as it is the food which repairs the nitrogenous waste of the cells, and without the aid of the other two important constitutents is capable of sustaining life. But the quantities would have to be high. You can see that if very low proteids are prescribed the other elements must be much in excess. Insufficient proteid in the baby's food always causes anemia and depleted vitality, flabby muscles and impaired circulation, and when very low, failure of nutrition, loss of weight, rickets, etc. You can see the folly of keeping the infant on low proteid, especially if the fat is below normal.

Sugar.—It is not necessary, usually, to have the percentage above or below 5 to 7. An excess of sugar produces hyperacidity, eructation of gas from the stomach and regurgitation of small quantities of food, dilatation of the stomach and other gastro-intestinal disturbances, colic, thin green stools, very acid causing eruptions on the buttocks, and various forms of eczema. If very excessive, there is an increase of weight, but not of strength. This is where the patent baby food on the market, being rich in sugar, makes the babies fat. Carbohydrates are the best sources of animal heat. If very low, we have poor circulation and loss of weight. As a rule, it is the easiest to digest. Some authorities advise cane sugar, instead of milk sugar, and often it does better in some cases. As a rule, if sugar is very low, the heat supply lessens and the system draws on the fat and proteid. If the other two are in excess the result might be favorable; but it is necessary to note that if the other two constituents are no more than necessary the whole system suffers.

Summing up, then, proteid is of the first importance as the constituent of food, for it builds up the cells of the body. Sugar stands second in importance, and fat comes third. If it is a matter of heat supply for the body, fat ranks first. To have a proper food all three must be found in their proper proportions. And clinically we have been convinced from our work last summer that excess of fat in our feeding caused us more trouble than any other constituent in the food.

In the case of the clinically treated baby above described, and after the castor oil was given, the baby was fed on boiled water, albumin water for the next twenty-four to forty-eight hours, and if the temperature was normal after that, the child was fed on gruels, and last of all on milk. During past summers up to last summer we have always had a reappearance of the diarrheal trouble as soon as the child was put on cow's milk. But last summer we put those that were not nursed on Walker-Gordon milk. The usual theoretical formula gotten up by the laboratory was as a rule for dispensary use cut in two, that is for a ten months old baby, F. 4.6, S. 3, P. 8 ounces, the regular formula, was reduced to F. 2.3, S. 1½, P. 4 ounces, not only cutting the ingredients but cutting the total amount in two.

This form of prescription I do not advise in private practice. There should be no hard-and-fast rule for infant feeding; every child requires a rule unto itself. In the clinical treatment, the patient was watched, the mother was instructed to come back every day, and especial attention was paid to details such as these: She was instructed just how many bottles of milk she was going to get, what she should

do on receiving them, how she should warm them before feeding, how the nipples must be cared for in a warm saline or alkaline solution, and how often she was to feed the infant during the day and night. And in this lies the secret of our success last summer. It is surprising how ignorant some mothers prove to be regarding those little things one naturally expects them to know. A frequent cause of trouble is that we take too much for granted in feeding infants, depending too much on the mother's supposed knowledge. Ignorance on these points is often manifested by some otherwise very intelligent young mothers. Frequently they will take the perfectly clean milk delivered to them with such care and contaminate it. In some cases we have seen them take the milk out of the bottle in which it was delivered to them, and put it in a dirty nursing bottle to feed it, or put a nipple on that has been kicking around the floor, the plaything of older children. They will take the bottle with them out on the streets on a hot July day, shopping, and have the child in the baby buggy for hours exposed to the sun. The milk bottle will lie in the buggy along with dirty napkins and infection thence arises. One case especially I can trace, that of twins, both in the same buggy, bottle and napkins together, one sick, the other well baby. It was surprising in how many cases when the mother made her second visit to the clinic, the formula would have to be again cut down, the proteids being especially reduced. In some cases the proteid would have to be reduced to less than one-fourth of one per cent. before the patient could digest it. The same applies to fat, but to a lesser extent.

The amount of sugar the little ones could digest when they could not assimilate anything else was surprising. This accounts for so many infants seeming to thrive on a proprietary food. This goes to show that the baby may get along very well for a time on a proprietary food, but the mistake occurs when this feeding is allowed to continue. Then the food, too low in fat and proteids, produces rickets with all the accompaniments.

Reverting again to the clinical treatment, when the formulas still did not agree with the patient we very often advised the mother to add an ounce or two, as the case might be, of sterilized water to each bottle, and in that way we would reduce the quality of the milk one-half to one-quarter. This could be accomplished without having to write a new prescription and without troubling the laboratory.

To carry out this form of treatment a great deal of patience and time was necessary. Our patients had to be seen often and educated. The only way we can win the support and help of the clinical patients is by showing the mother actual results. When it could be pointed out to the mother that the baby was gaining in weight, and it would be so pronounced that the mother would see it, we had no trouble in obtaining the mother's cooperation.

I will here review a dozen cases chosen from a hundred treated in private practice and at the clinic last summer. I do not want to take your time with many cases, but choose for your consideration special cases that have been neglectful in coming regularly, and in spite of the parents being against us we obtained some results, and will give you a general view of the methods and results obtained. I have prepared a chart showing at a glance the age, duration of illness before the child came under observation, the first formula given, the weight when first seen, and the subsequent weight at the end of various periods.

Age in Weeks.	Duration of Illness.	First Modification Percentages of Fat, Sugar, and Proteid; Amount at Each Feeding; Number of Feedings.	Weight in Pounds			Increase in Pounds.
			At Commencement.	At the End of		
45	14	4, 7, 3, ℥ vi, 5	13	36 days,	17	4
25	7	4, 7, 1.25, ℥ iii, 8	7½	26 "	10	2½
12	10	3.5, 6.5, 1, ℥ ii, 6	6½	20 "	7	½
24	7	4 7, 1 25, ℥ iii, 5	13	13 "	14	1
24	10	3.5, 6.5, 1, ℥ ii, 6	6½	17 "	same	...
24	...	4, 7, 1, ℥ iv, 6	7⅛	28 "	7¾	⅝
12	3	2, 3, .5, ℥ ii, 6	7	10 "	Milk tin'd. Mother's turned.	discon- milk re-
26	3	3, 6, .5, ℥ iii, 6	9	14 days,	11	2
22	3	4.7, 1.25, ℥ vi, 6	8	52 "	15	7
26	7	3, 5, 1, ℥ iii, 6	10½	21 "	15	4½
24	14	3, 7, .5, ℥ iv, 5	13	18 "	15	2
13	21	3 5, 6.5, 1, ℥ iii, 6	12	10 "	12	None

Among the hundred cases treated at the clinic and in private practice we had two deaths. There were two other deaths, but responsibility did not lie with us, as I will explain later. Of the two deaths I take account of now, one occurred in private practice. The case was that of the eighteen months old daughter of a physician. She was nursed till one year old, and then fed properly till taken sick. Was always well. Teeth came normally. On July 10, 1905, she was taken sick with diarrhea and vomiting. The doctor ordered one teaspoonful of oil, and as the child was having a great deal of tenesmus and pain, this was followed by large doses of subnitrate of bismuth. I was called forty-eight hours later. The child had a temperature of 100.5°. The bowels moved every half hour with a great deal of tenesmus and pain, but the child apparently was in fair condition. The history obtained was that on the day the child took sick she was at a picnic and partook of a good many good things to eat, popcorn, ice cream and cold meats. The day was hot and the child was in the sun all day. I ordered a tablespoonful of oil and stopped all food, giving only barley water. The mother gave her one-half a tablespoonful, taking it upon herself to make the change. The child cried, and she again gave the baby the bismuth mixture, having it handy. I saw the child the following day, the third day of its sickness, and when I learned what had been done, I explained to the mother that she had done wrong, that we had lost twenty-four hours time and given the germs a chance to do their mischief, and we had to do our work all over again. The child's temperature was 101°, the pulse rapid, 120 to 130, the stools frequent, watery and green, with a great deal of pain. A tablespoonful of oil was given by myself, and an enema of water, followed by an antiseptic peroxide of hydrogen, a weak solution. The temperature dropped to normal the next day, but diarrhea continued, blood appeared in the stools, the gastrointestinal tract was washed out with antiseptic and astringents like tannic acid, etc., were used, but with no effect on the diarrhea. There was continued blood and tenesmus. The following day the blood stopped, but the stools continued frequent and were mucous. The child was rapidly failing and prostration was very marked. In spite of everything done to sustain the rapid loss of fluids by saline infusions and the use of light, predigested foods, on the tenth day the child could not swallow anything. On examination of the mouth and throat nothing could be made out. With the condition that prevailed within the rectum, rectal feeding was impossible. On consultation, antitoxin was suggested and administered, and I also suggested streptococcus serum, and we used both. Ten c.c. of streptococcus serum was injected, followed by 1,500 units antitoxin. Examination next morning showed a characteristic membrane on the tonsils and posterior walls of pharynx. Although no

culture was taken, it did not look like diphtheria. A few drops of beef peptonoid were given with a dropper. She could not swallow. She would keep it in her throat and regurgitate. It was a case of amebic dysentery, and I am only sorry that no bacteriological examination of stools and membrane was made, as it should have been done. No post-mortem examination was allowed, but in my mind I could see a picture of a membrane like that of the throat all through the gastrointestinal tract.

The second death was a dispensary one. The patient was a little girl six months old, never had been nursed at all, was fed on Swiss condensed milk before it took sick. No birth complications. Brought to clinic August, 1905. Diarrhea, green stools, moving every half hour, child wasted weighed only 6½ pounds, which was one pound less than at birth. The mother tried cow's milk, diluted, and it was vomited, as she said. This infant was put on formula, F. 1, S. 4, P.O. 5, 2 ounces every two hours. Baby seemed to retain it, and apparently thrived for a week, but it was impossible to have the mother come to the dispensary. After the first week, she neglected, and had to go out to work. The child's bottles would be left with a neighbor, who would forget to feed the baby, and when she happened to think of it, in order to make up she would give the baby two or three bottles at one feeding. The baby again developed a diarrhea, this time with green stools, with vomiting of everything given. The temperature was 101 to 103° F. The food had to be stopped. The child could not even retain a weak solution of brandy, and it died two weeks after it came to the clinic. A post-mortem examination was not obtainable.

It may be said that we had two deaths in the clinic, of which also we ought not to take any account in this discussion, for if the infants had had a chance for life they would have gotten well. The case I am to speak of was that of two white children three weeks old, twins. Their weight was 6½ and 7 pounds. They had been fed on condensed milk, and had diarrhea and also ophthalmia neonatorum. After putting the twins on castor oil and stopping food for the first twenty-four hours, they were then put on a prescription of F. 0.5, P. 0.25, 1 ounce, eight times a day. As the mother did not bring the children back to the dispensary as required to do, we sent to the home and learned that she had told her physician about it, and he told her laboratory milk was no good, and the mother stopped and the children died a few days later.

So, in feeding infants we must remember that we cannot feed them all alike. In clinical feeding we learned to our satisfaction that all infants, even of the same age and weight, cannot always be fed on the same formula. It is the digestive capacity of the infant that governs. In feeding laboratory milk or cow's milk, the physician must be sure to put the patient on a very low proteid percentage, and as the powers of digestion increase, increase the proteid percentage. In prescribing, it is necessary to take into account the condition of the patient as regards not only age but weight. If there is any trouble with the digestion, lower first the proteid. The proteid gives the most trouble. Second, look to fat, as fat is next. The general rule can be laid down thus: If the child is not gaining, but at the same time shows no symptoms of indigestion, all the ingredients of the milk may be increased in proportion. If colic supervenes, the amount of the proteid should be lessened. If there is vomiting after feeding, the amount of the proteid should be reduced. If there is regurgitation of undigested masses of food, both fat and proteid should be reduced. If there is constipation, increase the fat and proteid percentages.

I revert again to an explanation of what modified milk has done for the infants of Detroit. While in my private practice I commenced to use the modified milk as soon as I was able to obtain it, my experience with it in that practice has not been so extensive as in clinical work, and I prefer to draw my conclusions from the latter. My dispensary practice since the establishment of the free milk fund last summer has given me the advantage of laboratory prescriptions. During the period before that I had not that advantage. I think I can speak with authority from the comparative point of view, having had seven years' experience without the laboratory prescription, and having had the prescription method last summer. I have nothing but praise for the laboratory prescription, if the principle is understood as laid down before. And the comparison thus favorably drawn is emphasized by the fact that the patients to whom the laboratory milk was given were very sick or were just getting over some gastrointestinal disturbances. But, as I have two or three times said, a great deal of the success attained was due to the hard work and careful attention devoted to the work. The patients were seen daily for a while and later were seen three times a week. No milk was prescribed unless the child could be seen at least once a week, and we left orders at the laboratory to have the mother bring a prescription every week. The results were marvelous. We had just as many severe cases last summer as during any summer previous and the mortality was certainly lowered. If it is still asked what accomplished this, the answer can only be, clean milk of proper constituent parts for the poor and needy, for those whose need was most urgent. You can say all you like about being able to get clean milk from some dealers, but the mothers that came to our clinic were satisfied with any milk provided only that they were told that it came always from the same cow. Having this food for her infant, she is satisfied and does less for her baby than she would do for her pet cat. The average woman in moderate circumstances in life who has several children to take care of, or whose time is taken up with her household duties so that she cannot give all her time to her baby, readily accepts the laboratory milk. She has little to do but receive and feed it when the time comes. There is very little chance for contamination if she is only ordinarily clean. Everything is all right but the price. A striking lesson in negligence in infant feeding, due to the ignorance of young mothers nursing their children, came to my notice last summer in the course of my private practice. This was a case of a nursing baby of four months. When first seen there were green stools two or three times a day. The infant was crying day and night, drawing up her limbs and was very sensitive to the touch in the region of the abdomen. Examination of the stools showed green undigested matter. Examination of the child showed otherwise negative, the temperature normal, etc. It was the mother's first baby. The mother looked healthy. The breasts were large and there was plenty of milk. On inquiry, I found that the mother had not been out of doors since the baby was born. She hadn't any clothes good enough to go out in, she said. I told her to get out in the evening, which she did, with almost immediate results. Another case was that of a baby six months old, taken sick in September last. There were green stools and the temperature was 104°. The baby had always been nursed. The mother's condition was good, with plenty of milk, the nursing regular. On questioning

the mother about herself, I found her husband had left her a little while before, and while she had means for self-support, she had not heard from him and began to worry. Just as soon as she began to worry, the child became ill. In this case the child grew worse every time the attempt was made to nurse it, and it finally had to be put on laboratory milk. Then it got along nicely. The third and fourth cases in mind were similar to the preceding. In the fifth case the child was four months old. A neighbor had told the mother that she would never succeed in raising the infant. The milk then seemed to lessen in amount. Examination revealed the fact that it was low in quantity of fat and proteid. The mother continued to worry, and finally the infant had to be put on prescription feeding.

What I have seen and read convinces me of the truth of what Northrup has said: "A prize dairy cow would go dry in a week under the strain which most young mothers endure." And in this connection I may remark, it is lamentable and surprising the amount of discouragement they get from older mothers. In all the cases I have cited above, the mother had to be looked after. Rest, good food, exercise and out-of-door walks would often improve the milk and the child would gain. A cause of trouble in the mother's case which might have been mentioned with the above, has been found to be the use of the scales by which the mother kept close watch on the baby's weight. It is all right if the child is doing well. But for a nervous mother the scales for the young infant and the thermometer for the older child, if the infant is not gaining fast or the child has a little fever—trouble.

Regarding the influence of feeding on infant mortality, W. J. Howarth of London, England, has investigated the question, and reports regarding 8,348 children. Of these, 63.3 per cent. were breast fed, 19.5 were hand fed, 17.3 were breast fed at first and hand fed afterwards. The highest death rate, 107.5 was among hand-fed children. It was nearly three times that recorded among breast-fed children, among whom the death rate was 69.8 and twice that of children partly nursed, 98.7. Among hand-fed children, diarrheal diseases and deaths from defective nutrition prevailed. Next in importance, are chest ailments, and then convulsions due to disorders of digestion. Among children who were first breast fed and then hand fed the death rate is not so high as among purely hand fed, although the aggregate mortality is considerably higher than among breast-fed children, in one or two diseases mortality is lower. Children who have natural food supplemented by artificial food have advantages over those who are fed on artificial food altogether. Children fed on condensed milk show a higher rate of mortality—225 deaths per thousand—the next come children reared on arrow root and farinaceous foods —252 in the 1,000. The death rate of children fed on patent foods is on the average higher than among those fed on diluted cow's milk. And the mother, if she has not enough milk to nurse the child, should not be encouraged to try to feed it.

There is a good lesson to be learned from such an article. How important it is to educate the mothers and to show them that when they feed a child on some of the patent foods they feed it on nothing. It is not only the mothers in indigent circumstances that misunderstand this matter; I find a good many physicians having experience may be of one or two cases or perhaps having had a case in their own family, feed on patent food. Experience has convinced me that the mortality of infants can be reduced especially provided we can do something for the poor—provide pure milk and fresh air, especially in summer. Teach the mother the laws of hygiene and how to care for the baby during an attack of diarrhea, and how to care for the napkins. Distribute literature on the prevention of disease and on the feeding of infants during the summer. Later on it would be a fine thing if we could have district physicians and nurses who would go out and show them how to do it. I can see in such a plan infant mortality much lowered in the near future.

My experiences in the cylinic with laboratory milk have proved to me that the laboratory milk gives the best results. When in the past they were dying rapidly, home modifications of cow's milk made no improvement because of the failure of the mother to carry out our instructions as to modification and cleanliness at home. The last summer, with prescription feeding, and above all by careful attention to details, we had only two deaths to report in the hundred cases. Laboratory milk, properly prescribed by the attending physician, the case watched carefully as to the digestion of the child from day to day, so as to notice the necessity for changing the prescription to a higher or lower percentage of the ingredients as the case may be, is the only proper feeding when artificial feeding is to be resorted to. Some physicians think this artificial feeding is a fad only for sick children, but it provides food for all cases in which the infant cannot get the mother's milk or when the mother's milk is not sufficiently sustaining.

Home Modification.—Unless you have a trained nurse in full charge of the baby, home modification is not the proper method. Where the best results were not obtained from laboratory percentage feeding the physician was to blame, and not the laboratory. If the physician doesn't know the first principles about infant feeding, and doesn't know the constituent parts of cow's milk and mother's milk, if he doesn't know how much the child can digest and what quantity of fat, sugar, and proteid, but relies entirely on a few general formulas given in textbooks or pamphlets, then he will have unsatisfactory results in laboratory feeding and will condemn it. I have seen a case, that of a child five weeks old, having a marasmus vomiting, and diarrhea, taking milk containing 2 or 3 per cent. of proteid and a higher percentage of fat, when it could not digest a formula I prescribed containing one-tenth of one per cent. of proteid, 25-100 of fat, the lowest formula prescribed in a laboratory.

One of the chief causes of failure of laboratory feeding is due to the fact that it is easy for a physician to raise the percentage of the chief ingredient, the fat, sugar, and proteid. And this advantage is abused by a great many, either through ignorance or letting the mother or grandmother run the prescription. An instance: An infant four weeks old, who never had had the mother's nursing, was under my care on a formula of F. 1.5, S. 6, P. 1.25, and was gaining slowly but surely, slept well, was playful and happy. The weight was twelve pounds, but the mother and grandmother were not satisfied, and said I must give the boy more food, it had got to be fatter. I told the mother that it was getting all it could take, and I would rather let go than be run by the grandmother. Finally I told her I could make the baby fatter, but she would have to take the consequences. They agreed. I raised the fat and the child's gain was noticed immediately, so marked in two or three weeks, the mother informed me that even the grandmother was satisfied. She could see a double chin. Baby stood a 4 to 4.5 per cent. fat for a month, and

then the storm came, so bad that it convinced the mother and grandmother that they had better leave me alone. The fat was cut down, the child doing nicely. This illustrates the danger of a prescription in wrong hands. I don't want to try to tell you anything new, because I have no new knowledge to impart; I do wish, however, to emphasize the truths that have been told by our teachers in the past many times, as a last word for the laboratory feeding. I can only quote fully what W. P. Northrup says: "What is the best substitute for mother's milk? When the milk of the mother fully agrees with the child's digestion, which is not disturbed by shocks, sorrow, anemia, overfatigue, and worry, when it is not decreasing in quantity and so losing its balance in quality, there is no substitute worth having."

In comparing nature's formula in fresh cow's milk, putting up in a laboratory nature's prescription and preparing for the infant a feeding as nearly as possible such as the woman's breast furnishes. More than that it is filling in the laboratory prescriptions which may be changed to fit changing conditions and changing needs. It is now possible in a well-appointed laboratory to make artificial breast milk which shall have the right percentage of fat, sugar, and proteid, and alkilinity of the right amount to each feeding, the correct number of feedings in twenty-four hours. Further than that it is possible to rearrange the chief constituents of proteids, so that the whey proteids shall be in excess of the caseinogen and casein. Furthermore, when such a formula is made up, we can know what the infant is taking and ascertain what elements, if any, disagree Otherwise modified milk can be modified to suit, and the milk of the woman or wet-nurse cannot be. The function of the milk laboratory is to furnish the prescription for the physician. No doctor askes the pharmacist to send him medicine suitable for typhoid fever. He directs the druggist to fill him a prescription, that is all. He must look to the druggist for his reliability and exactness. The laboratory should be clean and accurate, but he, the physician, should not write a prescription and then go on a prolonged vacation. Mistakes are made by doctors—they think they can order laboratory milk the same as patent food. The infant during the first year changes rapidly. It is not the same infant more than two weeks at a time.

I want to thank Dr. H. A. Luce for assisting me in the work all summer, and the ladies whose influence is responsible for the pure milk fund. And I have also to thank Dr. C. G. Jennings, chief of clinic, for the aid and advice tendered by him.

In closing, it will be proper to speak of preventative measures in the treatment of summer diarrhea. Procure a laboratory milk, or a good, clean milk. Clean milk, it must be pointed out, is hard to get in this city, as in all large cities. The second thing of importance is to educate the mothers in the care of the child when diarrhea occurs. (a) Give a teaspoonful or two of castor oil, and no food. (b) Give whiskey in water, and rice or barley water. (c) Lastly, milk, and then give only half the quantity the child can take in health.

Teach the mothers the value of fresh air and water excursions. Teach them all about the clothing of an infant. We see this abused in the streets in our city. Teach them the value of bathing infants regularly. Keep them clean and cool; keep flies off; keep the nipples of the bottles clean. A great preventative against diarrheal diseases is the care of the napkins. The napkins should be changed as soon as soiled, put in a closed receptacle, washed and boiled as soon as possible. Don't have them in the same room with the baby.

I have spent much time teaching mothers along this line, and I am satisfied it was time well invested. After changing the napkins, before handling the baby or bottle, I have instructed the mothers to disinfect their hands thoroughly in some antiseptic. Reports from all infant asylums impress me that the danger of infection by the colon bacillus from napkins is greater than from any other source, and sick and well children should not be kept together.

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A CONTRIBUTION TO THE STUDY OF THE DIAGNOSIS AND TREATMENT OF ECTOPIC PREGNANCY.*

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One needs almost to start out with an apology at this time when offering a contribution on the subject of ectopic pregnancy. The subject may seem as trite and overwritten as that of appendicitis, and still the condition is far from being readily recognized and as generally well understood by the profession as is appendicitis. The failure to recognize the disease I find is due *not* so much to any inherent difficulties in the diagnosis (although I grant such do exist in many instances) as to absence of thought of the condition. The medical attendant will often say: "I never thought of ectopic pregnancy." In the hospital, the interne, after a short service in the gynecological ward, learns to spot out the cases of ectopic pregnancy with surprising accuracy. He does this chiefly because his attention has been drawn to the disease and his mind is on the alert for its recognition. It is not so, as a rule, in private practice outside the hospital. The medical attendant seldom makes the correct diagnosis, but usually treats the case first as an early miscarriage, very often does a curetting, and, when things do not go right, as they do not, he diagnoses inflammatory disease of the adnexa. It seems to me, therefore, that it might be of some interest, and perhaps not devoid of instruction, to present a short paper on the subject, based on my own personal experience with 53 cases, the total number operated upon by me from January 1, 1899 to January 1, 1906, a period of seven years.

The ages of my patients varied from 22 to 41 years; twenty-five were under 30 years of age; fifteen had given birth to one child; eleven had given birth to four or more children; one was the mother of eight and another of eleven children; six had never been pregnant before; two more had been pregnant once but had miscarried. Of the six patients who had never been pregnant before, one was married seven months; one, two years; two, three years, one, four years, and one, twelve years. In the latter, that is, the patient who had been married twelve years, the result of her first conception, singularly enough, was a simultaneous uterine and extrauterine pregnancy.†

It will thus be seen from the foregoing that a long period of sterility antedating ectopic pregnancy is not as common as some would lead us to believe. The same, in a measure, applies to the period elaps-

*Read before the Metropolitan Medical Society, February 27, 1906.

†A full report of these cases was published in *New York Medical Journal*, February 24, 1906.

ing between the last normal pregnancy and the faulty one. This period varied in my cases from four months to sixteen years. In three cases it was seven months; in twelve more cases it was two years and less. In sixteen cases, therefore, there was a period varying only from four months to two years between the last normal gestation and the ectopic pregnancy.

Bearing somewhat on the same question of etiological factors, in a clinical sense, the notes of my cases run counter to another common assumption, which is to the effect that inflammatory disease of the adnexa is a frequent forerunner of this condition. In the majority of my cases the history of such an antecedent affection could not be obtained. I will grant, however, that this negative evidence in many of the cases was not very reliable, as the patients were either ignorant or non-observant. But this I can say, that in several of the more intelligent women there was an entire absence of any symptoms referable to the pelvic organs prior to the onset of those caused by the tubal pregnancy. In several of the cases the patients on finding that the expected menses did not recur, had sounds or other instruments introduced into the uterus by midwives or physicians to bring on an abortion. Whether this interference had any causative influence in arresting the ovum in the tube, I am not prepared to affirm. But these attempts with their usual absence of aseptic precautions, leading to the suspicion that the enlarged tube might be due to an inflammatory process, the result of such an infection, did not make the diagnosis in these cases any easier.

The three cardinal symptoms of ectopic pregnancy are: amenorrhea of longer or shorter duration, irregular uterine bleeding, and abdominal pain.

Amenorrhea.—First of all, it cannot be too strongly emphasized that the absence of amenorrhea does not positively exclude tubal pregnancy. That is, the last menstruation may have been regular as to time and quantity, and yet before the time of the next recurring menstruation, symptoms of a ruptured tubal pregnancy or tubal abortion may manifest themselves. In this series five cases presented such a history. The onset of the symptoms varied from nine to twenty-one days after the last menstrual period, which was normal in every respect.

In other cases again the last menstrual period will be normal as to time, but abnormal either as to amount, duration, or continuousness of the flow. In one case, for instance, the flow lasted only one day, while the normal duration was four days. In two it persisted for a longer period than normal; in two more it lasted the usual time but was decidedly less in amount. In three cases the flow was not continuous; it would cease for several hours and then recur.

In the remaining forty cases there was a period of amenorrhea varying from a few days to ten months. The latter period occurred in the only case of abdominal pregnancy in the series.

When I say a period of amenorrhea, I mean by that the time the patient has skipped what should have been her next menstrual flow following the last regular menses. For instance, the patient, we will say, has menstruated normally January 1; she should menstruate again January 28, if it be of the four-weekly type. The period of amenorrhea would be reckoned from January 28. Following this system of reckoning the duration of amenorrhea in one case was six days; in nine cases, seven days; one case, ten days; in nine cases, two weeks; one case, three weeks; two cases, two months. In twenty cases of the series, therefore, the period of amenorrhea varied from six to fourteen days. If we add to this the thirteen cases in which there was no amenorrhea, we have thirty-three cases, or about 62 per cent., in which there was an absence of amenorrhea or in which it was of very short duration.

Irregular Uterine Bleeding.—It is commonly held that the uterine bleeding in ectopic pregnancy is not as profuse as that attending a uterine miscarriage, and that the blood is of a darker color. The latter assertion is entirely unfounded. As far as my experience goes, there is no appreciable difference in the color of the blood from the uterus in the two conditions. It is true that, as a general rule, the uterine bleeding attending a ruptured or aborted tubal pregnancy is less profuse than that attending a uterine miscarriage. Still, there are numerous exceptions. In eight cases of this series the bleeding was just as profuse as any I have seen in the latter condition. Nevertheless, the scantiness and the irregularity of the uterine bleeding in ectopic pregnancy are important differential diagnostic points. The flow ceases, then recurs, and again may be absent for hours or days. Rarely it is continuous as it usually is in uterine miscarriage.

In only five cases of the series do the records state that the patient passed a decidual cast. This, of course, does not signify very much, for many more may have been expelled without the patient's knowledge, and, furthermore, what the patient may have thought was an organized membrane was nothing more than a series of organized blood-clots. It may be safely assumed, therefore, that the statement by the patient of the expulsion or nonexpulsion of a decidual cast is of no aid in the diagnosis.

Abdominal Pain.—Pain in the abdomen is a pretty universal symptom in ruptured or aborted tubal pregnancy. I can recall only one instance in which it was not very marked. Its character varies as well as its degree, and the sensation is descriped differently by different patients. The less intelligent usually compare it with labor pains, a form of pain with which evidently they are more familiar. The more intelligent patients will say it is of a colicky nature, or has a cutting character, or that it resembles the menstrual pain but is much more severe. Others, again, will say that it has a distinctly bearing-down character resembling labor pains. It is usually felt in one or the other side of the lower quadrant of the abdomen, corresponding to the tube affected. Not infrequently it is referred vaguely to the lower half of the abdomen. In one of my cases it was felt in the epigastrium and in the right hypochondrium, and following, as it did, an indiscretion in diet, the natural inference of the medical attendant was that he was dealing with a condition of gallstones.

The attacks are usually paroxysmal, and, as a rule, very severe, so that very frequently the medical attendant is called and he may be compelled to administer morphine hypodermically before relief is obtained. The duration may vary from a few minutes to several hours.

It is interesting to note the relation, as to time, of the pain to uterine bleeding. In some cases the pain may precede the flow by hours or days; in others, again, the flow may last for a considerable time before the onset of an attack of pain. In eight cases of the series the pain and uterine bleeding were synchronous as to time. In fifteen cases the flow preceded the pain for an interval varying from a few hours to several days. In twelve cases the

attack or attacks of pain preceded the uterine bleeding for a period of hours or days.

It is commonly held that fever is absent in ruptured or aborted tubal pregnancy, and that this negative evidence is a valuable point in differential diagnosis between it and inflammatory disease of the adnexa. This opinion is fallacious and misleading. In fourteen cases of this series there was a temperature ranging from 100.2 to 104°. We had a case in Mt. Sinai Hospital ward in which every second day the temperature would go up to 102° or 103° and would be practcally normal in the interval. The blood was examined for plasmodia with negative results. The case was under observation for several days prior to operation. After the operation there was no recurrence of the intermittent fever.

We have found the same unreliability in the leucocyte count as an aid in the differential diagnosis. Many of the cases in the series have had as high a leucocyte count as is ever seen in acute inflammatory affections of the adnexa, even as in those cases in which pus was present. The laboratory men admit now that the leucocyte count may not be of any value in the differential diagnosis, but they lay great store upon the differential count, *i.e.* upon the percentage of the polynuclear neutrophiles, and that when this is above the normal (62 to 70 per cent.) they assert that it is a positive sign of the presence of pus. In some of my cases in which the differential count was made the results did not confirm this assertion. We are continuing the investigation in this direction at Mt. Sinai Hospital, and when a sufficient number of cases has been collected we will furnish a report of the data.

Of other prominent symptoms may be mentioned attacks of syncope corresponding to every fresh effusion of blood into the peritoneal cavity. When they occur they are valuable aids in the diagnosis, but they were not present in more than 25 per cent. of this series. Again, some women with a highly nervous and sensitive temperament may have distinct syncopal attacks from the loss of blood accompanying a uterine miscarriage, or from a much more trivial cause.

I do not propose going into detail regarding the results of a bimanual examination. In some cases the finding may be characteristic, but in the majority of the cases all one can honestly say is that he feels a mass at either side or behind the uterus. Rarely the mass may be in front of the uterus. I know of no way of definitely distinguishing by palpation between a tube distended by blood and blood-clots and surrounded by similar material, and a tube filled with pus and surrounded by inflammatory adhesions and exudation, or a cyst of the ovary bound down by adhesions. There are some men who say they always can, and one might feel envious of the sense of touch possessed by them were it not known that these same individuals have frequently committed errors in this respect.

An intraligamentous cyst with thick walls has often been mistaken for a tubal pregnancy. It is not necessary, after what I have said, to mention all the different conditions that have been confounded with ectopic pregnancy by some of our most skilled and experienced diagnosticians in this branch of medicine.

The clinical analysis of the cases embodied in this paper and the statement I have just made may lead you to think that the diagnosis of ectopic pregnancy is surrounded by insuperable difficulties. I grant that some cases are, but the vast majority of the cases could be detected by the medical attendant if he would merely keep his mind alert on the subject. Every case of so-called early miscarriage in which attacks of severe pain is a marked symptom should be looked upon with suspicion. So should also irregular uterine bleeding during the fruitful period in a woman whose pelvic organs are apparently healthy. In such a condition always rigidly investigate the behavior of the last menstrual flow, as to whether it was delayed a day or longer, whether it was of the usual amount, and whether the flow was continuous and lasted the customary time. It is the early cases that are so frequently overlooked, and, as you have learned, they are by far the most common. The case of amenorrhea of two or three months or longer with a history of a sudden seizure of pain and symptoms of collapse in which profound anemia is a marked feature, is not likely to be overlooked or wrongly interpreted. But to every case presenting such striking features there are at least three in which the symptoms are vague or indefinite and in which the amenorrhea may be totally absent or only of a few days' duration.

I have never carried diagnostic refinement to the extent of attempting to differentiate between tubal rupture and tubal abortion. In several instances distinguished consultants have been associated with me who thought they possessed the requisite diagnostic skill for such differentiation, but the subsequent operation showed their error. The fact is that frequently it is difficult to tell, even during the operation, whether the case belongs to the one form or to the other. Furthermore, the two conditions not infrequently are present in the same tube. The tube may be trying to abort its contents through the fimbriated extremity, while at the same time its walls are being thinned out and eroded by the syncytium of the ovum, so that a solution of continuity occurs which may be attended with profuse bleeding.

A word more regarding differential diagnosis. In many instances it is of no great importance whether the existent mass be an ectopic pregnancy, an ovarian cyst, or an old pus tube. In any of the above conditions there would be an indication for operative intervention. But what is of vast importance is not to confound an ectopic pregnancy with an early miscarriage. In one of the cases in this series the attendant physician thought he was dealing with a retroverted pregnant uterus that was trying to abort its contents. He made several attempts to antevert the uterus with a sound, and evidently in one of these attempts he bored a hole through the posterior wall of the uterus and into the blood tumor. The patient was reduced almost to the last extremity by this treatment. Whenever she stood up there was quite a flow of dark blood from the uterus, which would cease as soon as she would resume the recumbent position. This feature puzzled me at first, but when I heard of the method of treatment I surmised the nature of the traumatism that had been inflicted. At the subsequent operation, which was very difficult, owing to extensive adhesions and to the false passage, my surmise was proved to be correct.

Again, it would be highly important to differentiate an acute gonorrheal infection of the pelvic organs, or acute inflammatory affections of the adnexa of nongonorrheal origin, from ectopic pregnancy. For, in the former two conditions not only would operative intervention not be indicated, but would be injurious to a high degree or might even be fatal.

Acute gonorrheal infection of the pelvic organs presents a fairly typical picture. There is usually marked rigidity of the lower half of the abdomen,

there is considerable distention, and while the abdominal pain is paroxysmal, the paroxysms are more frequent and of shorter duration than they are in tubal abortion or rupture. When the process has lasted for some days the mass or masses found in the pelvis are very hard at first and are usually firmly fixed.

Acute inflammatory disease of the adnexa not of gonorrheal origin may not be so easly differentiated. Here the pain is rather continuous and is not, as a rule, as severe as it is in ectopic pregnancy or as in gonorrheal infection. There will also be more rigidity and tenderness of the lower half of the abdomen than would be found in tubal abortion or rupture. In doubtful cases it is well to defer operation and to keep the patient under close observation until a fairly certain conclusion can be reached.

Treatment.—The consensus of opinion of American gynecologists at the present time is when a diagnosis of ectopic pregnancy is made operative intervention is indicated. This statement requires some modification. In cases of advanced tubal or abdominal pregnancy the question of waiting until the fetus reaches full term is a legitimate one. It is also pretty generally conceded by nearly all operators that the abdominal route is the one of choice in the vast majority of cases. It was the route followed in fifty of the fifty-three cases operated upon by me. In two cases a vaginal incision was made at the outset and the large hematoceles evacuated. In one case, after opening the abdomen, the intestines were found so extensively adherent and matted to the blood-tumor, that an incision was made through the posterior vaginal fornix rather than take the risk of injuring the intestines by the attempt to complete the operation from above. In three cases, including the one of abdominal pregnancy at full term, the uterus had also to be extirpated in order to arrest the hemorrhage. In the remaining cases, with a few exceptions, the tube only that was the seat of the pregnancy was excised, and whenever possible the corresponding ovary was left. In a few cases forming the exception above referred to, the adnexa on the opposite side were so markedly diseased that they had to be removed.

The right tube was the one affected in 26 cases; the left in 17 cases. No mention is made of which tube was the seat of the pregnancy in the remaining 10 cases.

In 16 cases there was a moderate quantity of free blood in the peritoneal cavity; in 14 cases the quantity was very large. The designation of "large quantity" was used only when the abdomen was enormously distended with blood and when the patient was in a condition of most profound anemia. In several of these cases there was no pulse to be felt at the wrist at the time of the operation. It is truly amazing to see, in these cases, how an apparently moribund patient can be brought to life by opening the abdomen, rapidly ligating the bleeding vessel, and injecting a large quantity of saline solution into the veins of the arm.

The cases forming this series were operated upon in various private clinics, in two public hospitals, and many in the homes of the patients. There was but one death in the entire series, and this was in a case operated upon at Mount Sinai Hospital, the patient dying twenty-one days after operation from a double pneumonia, doubtless as a result of ether narcosis. We were then having several cases of pneumonia due to the narcosis. The patient showed evidences of pneumonia soon after the operation. Both lungs became involved early, and at no time were there any manifestations of an embolic process. The processes directly connected with the operation passed off smoothly; at no time was there the slightest peritoneal irritation, and the abdominal wound healed primarily.

There was one other death among the cases of ectopic pregnancy in my practice during the period stated, but that case was, strictly speaking, not operated upon. I mention it as it has an instructive bearing upon treatment. I saw the patient in consultation at 9 P.M., about four hours after she had been brought home in a carriage from her place of business downtown, where she had gone into a severe faint. In spite of urgent appeals on the part of myself and the medical attendant for an immediate operation, consent was obtained only for an operation on the following morning. In the morning, when we came to operate, the patient, who was very fat and flabby, was even more anemic, if that were possible, than she had been the night before. Her pulse was more rapid and was merely perceptible. She was placed on the table and chloroform administered. Before she was fully narcotized she expired. It was difficult to say whether the patient died from the anesthetic or from the intraperitoneal hemorrhage, or from a combination of both. Among the series there were several cases in fully as bad a condition (if not worse) as this patient was when I first saw her, and still they recovered after being operated upon.

This case must form an instructive comment upon the attitude of some operators who hold that in cases of profound shock in ectopic pregnancy from internal bleeding, it is wise to wait for reaction before operating. It was the only case among 15 cases of severe internal bleeding occurring in my practice for the past seven years that was not operated upon, and it was the only one that ended fatally.

It ought to go without saying that the same principle should guide us in dealing with a bleeding vessel within the pelvic cavity as with a bleeding vessel in an external part—to get down to it and ligate it with as much dispatch as possible.

There is considerable discussion going on among German gynecologists whether it is better to remove the blood in profuse intraperitoneal hemorrhage or allow it to remain in great part within the abdomen so that it may be absorbed and thus aid in restoring the vitality of the patient. In the 14 cases of profuse intraperitoneal hemorrhage in this series as much of the blood was removed as was found feasible without unduly prolonging the operation. In some of the earlier cases the abdominal cavity was flushed with hot physiological saline solution, and after the blood was washed away a couple of quarts of the solution were left within the abdomen for the purpose of aiding in the restoration of the patient. In the later cases more prompt results were obtained by intravenous saline infusions, and the abdominal cavity was left as free of fluid as possible.

It does not seem to me to be good practice purposely to leave a large quantity of blood within the peritoneal cavity. While pure blood in the peritoneal cavity may be innocuous, the blood effused in ruptured tubal pregnancy is not always germ free, contaminated as it is with the contents of the tube, which are not always free of germs. Granting even that the tubal contents are always aseptic, operative intervention carried out with the customary aseptic precautions is attended with a more or less degree of germ contamination. And, could there be a better medium for the germs to multiply in than blood? Nowadays, with the ease and safety with which an

intravenous saline infusion can be given by any hospital graduate who has had sufficient experience, there certainly is no need to depend upon the absorption of the blood by the peritoneum to restore the patient.

Another argument used which sounds somewhat more plausible is that the removal of the blood takes time, and that these moribund patients will die on the table if the operation be prolonged. This sounds more plausible than it is in reality. As a matter of fact, as soon as the abdomen is opened the patient's condition shows improvement, evidently from relief of tension, and if one promptly puts a stop to further loss of blood by ligating the bleeding tube, a few minutes more or less in the completion of the toilet of the abdomen will not increase the shock of the patient. I feel confident some of these cases are lost through overhaste on the part of the operator. Time is not taken to investigate whether there be any oozing from the bed where the pregnant tube or extended fetal sac lay, or from the raw surface left by the removal of the semi-organized blood-clots. After the tube is delivered and ligated the abdomen is hurriedly closed and what little vitality the patient has left slips away through the gradual but constant sickering of blood from the oozing surfaces. The patient dies within a few hours or a day or longer after the operation, and the conclusion is reached that she died from "shock," from "lack of action," or, if an autopsy be made, from "secondary hemorrhage," while in reality she died from primary hemorrhage overlooked or neglected, through undue haste, by the operator. The practical inference to be drawn from this is always to take sufficient time, no matter how low the patient may apparently be, to be certain that all bleeding is arrested by suture or by packing with gauze Quick-relief) before closing the abdomen, for it does not take much of the so-called "secondary hemorrhage" to kill these patients.

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TREATMENT OF PNEUMONIA.

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It is alleged that the treatment of pneumonia so strongly advocated by those who employ the active principles, is based upon a pathology not now in vogue—the humoral or vasomotor theory, which has been supplanted by the bacterial hypothesis. Pneumonia, it is now thought, is due solely to the pneumococcus, and all the symptoms are attributable to the presence of this microorganism in the pulmonary tract, and to the direct effects of the toxin produced by it. It is just that this claim should be considered, and should receive full credit for whatever of truth it possesses. We are the last persons on earth to cling to gone-by theories or beliefs when better ones are presented.

That the pneumococcus is present in some pneumonias, and is the cause of the attacks, is admitted. That this coccus possesses a monopoly of causing this disease is another matter. We believe that the influenza bacillus causes a form of pneumonitis only distinguishable from pneumococcus-pneumonia by the microscope and by a different symptom-picture. Recently the writer attended a case of acute pneumonia that was typical in features and course, except for the absence of fever, and of both pneumococci and influenza bacilli. The only microorganisms found in the sputa were the ordinary diplococci always present in the mouth, and a few other cocci.

The second unproved assumption in the accepted theory is that which attributes all the symptoms of the malady in question to the direct influence of the toxin. This is not a necessary deduction from the pneumococcus-causation theory, and we believe it is not in accord with clinical observation. It has long been recognized that marked gastrointestinal irritation betokens unusual gravity in any case of pneumonia. The malefic influence of unhygienic surroundings over cases of all infectious diseases is one of the best established tenets of modern medical science. The especial danger of contamination of air or water by human excrement is also acknowledged universally. In all febrile conditions the suspension of the digestive secretions, with consequent increased liability of the bowel contents to fermentation and decomposition under the influence of increased heat, the development of virulence in intestinal microorganisms usually harmless, and the increased absorption of intestinal fluids and their dissolved toxins, are all undisputed facts. This renders very strong the position of those who attribute to such toxin-absorption a portion of the symptomatic phenomena presenting in pneumonia, as in all other febrile maladies; and this belief is confirmed by the marked relief following the emptying and disinfection of the alimentary canal.

There must also be a sensible difference in the course of any infectious toxin-generating malady, as occurring in persons whose eliminant apparatus is in good working order, and in others in whom it has been so impaired before the infection developed as to be barely able to cope with its tasks during the period previous to infection.

In fact, granting the causal rôle of the coccus, this organism can only act upon and through the vital functionating elements of the human economy—the cells. We cannot frame any hypothesis that will relieve us of the necessity of considering cellular pathology, for without the cell there is no pathology.

A third objection to the current theory is that it attributes effects to the direct action of the pneumotoxin that are only secondarily due to it. The toxin is one of the causes of fever; and fever is the most important single element exciting the heart to overaction, with consequent early exhaustion. Reduction of the fever conserves the heart strength, even if the toxin remains undisturbed. It is most fortunate, however, that the means employed to reduce fever are also efficacious in promoting elimination.

Nor are the mechanical conditions resulting from the local pulmonary disease to be disregarded. The patient is beset with dangers from interference with the pulmonary circulation and the aeration of the blood. We need not lug in toxemia to account for death when four-fifths of the pulmonary tissues are impervious, and the whole task of blood aeration is thrown upon the small remainder, hyperemic and edematous.

Le Fevre (Medical Record, February 24, 1906) states that the primary action of the pneumotoxin is stimulant. Overstimulation during the primary stages leads to exhaustion of irritability, with prostration later. Granting this, how do we on this basis explain the success of the active-principle treatment?

Aconitine develops pure cardiac inhibition; it slows the pulse, steadies the heart and relaxes vascular tension, in all directly antagonizing the action of the toxin. The development of normal inhibition is not weakening the heart, but conserving its energies, checking the unbridled waste that leads to exhaustion.

Digitalin also develops cardiac inhibition, slowing and strengthening the pulse beats, increasing vascu-

lar tension also and energizing the cardiac muscular fiber. Given judiciously, in doses exactly apportioned to the need, it also is conservative of the cardiac forces, even when administered continuously for prolonged periods. Its vascular toning balances the relaxant action of the aconitine. These two, therefore, fulfil the indication of neutralizing the action of the pneumotoxin upon the circulatory, respiratory, and central nervous systems.

By veratrine a further indication is met. This alkaloid, in the small doses employed, also slows and steadies the heart, directly energizing its muscular fiber and preventing or relieving its fatigue; it relaxes vascular tension and powerfully stimulates all the organs by which toxins are eliminated from the body. It thus energizes aconitine and digitalin in their beneficial actions, and supplements them where they are deficient. We are by no means certain that the old humoral theory is totally inapplicable, and to say that the "antiphlogistic," antiplastic medication was altogether valueless is an unproved and unprovable assumption. There is, therefore, in both the new and the old way of viewing the pathology of pneumonia, ample justification for the high valuation placed on veratrine by clinical observers.

Le Fevre's third indication in pneumonia, to limit the production of the toxin in the lung or elsewhere, may be met by the forementioned remedies—we believe it is; by such applications to the chest, cold or hot, as afford relief to the patient; or by the administration of germicidal remedies eliminated through the lung or brought to it by the blood. For the latter purpose creosote, iodoform, and quinine have each been advocated; and the larger the doses given, the stronger seems the faith they inspire. Le Fevre, who doubts their specificity, admits their favoring influence, but strictly limits their applicability to the early stimulated period. He claims that they are contraindicated by the supervention of cardiac and respiratory exhaustion. This indication would be more directly met by quick saturation with calcium sulphide, which should stop the production of toxin by killing the cocci.

Le Fevre makes an exception of quinine, which may be given late in the course of the malady, in moderate doses, without harm—or much good. He cautions us against accepting the reduction of fever as an evidence of benefit, unless this is accompanied with improvement in the general condition; and this, when the apyrexia is properly induced, is exactly what will occur. At the least it will serve to fill in the time while we await the development of the coming antitoxin.

When the stage of depression has supervened, we still have indications for remedies to sustain cardiac inhibition at the normal standard, but we then face a perilous fall of vascular tension, and an engorgement of the venous system, in which a large proportion of the body's blood supply is collected. The left heart and the arterial system are practically empty. If we now increase the vascular tension we contract the arterioles and capillaries, retaining the blood longer in the arteries and the left heart. Here is the indication for strychnine, to replace the veratrine—not that the latter is no longer needed as an eliminant, but the danger from the other source is more imminent—the patient may bleed to death into his own veins. As the right heart is now still more imperatively called upon to force the blood through the obstructed lungs, we add convallamarin to our digitalin, believing the former a more direct tonic to the right heart. Had we a specific contracter for the veins it would be indicated; but as long as the profession is contented to employ "digitalis" as its one only cardiovascular tonic for all atonic conditions, such an obviously essential differentiation of remedies is not to be expected. We must content ourselves with the knowledge that in the most notable examples of venous paresis, venom-toxemia, strychnine in doses ordinarily lethal will overcome the relaxation and save life. Therefore we now push strychnine to the physiological limit, carefully avoiding such overstimulation as would be followed by exhaustion of irritability, and collapse.

One of the things it seems the profession will never learn is the direct dependence of a considerable proportion of the fever, headache, muscle and backache, delirium, restlessness, anorexia, nausea, debility, etc., upon fecal autotoxemia. We therefore emphasize our initial suggestion as to the imperative necessity of emptying the bowels, disinfecting them, and fulfilling this indication throughout the course of the attack. Nor must we neglect to urge the use of saline colonic flushes, to traverse the blood and be emitted by the kidneys, washing out quantities of toxins with them, and so reducing the toxemia to what the forces of the body may be able to overcome.

It seems to the writer, therefore, that the treatment that has proved so satisfactory to many clinicians may be explained on the modern theories of pneumonia pathology quite as readily as by the older ones. The enthusiasm which is displayed by those who adopt this active principle method in pneumonia is one of the phenomena of the disease, and as such is to be investigated and its causes ascertained, quite as much as any phenomenon observed in the laboratory. Dismissing the subject with the flippant assumption that the clinicians are fools and imbeciles is no more a scientific method of disposing of the one than of the other.

SOME REMARKS CONCERNING THE TUBERCULIDES, WITH A REPORT OF CASES ILLUSTRATING THE PAPULONECROTIC VARIETY.*

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With the very remarkable increase in the extent and accuracy of our knowledge of tuberculous affections of the skin which has taken place during the last two decades there has been, to some degree, an abandonment of old, and often meaningless, terms for new ones more in accord with our present ideas of the etiology and pathology of this most important group of diseases. In 1896 Darier proposed the term *tuberculide* for a series of dermatoses, the individual members of which had been described from time to time under a variety of names. This name was at once adopted by the French, and has been slowly taken up by writers in England and Germany, and, to a less extent, in America. Hallopeau has proposed to call all cutaneous tuberculoses tuberculides, dividing them into two classes, viz., *bacillary tuberculides,* or those in which the tubercle bacillus is regularly demonstrable, and *toxitubercul ides,* those in which this organism cannot be demonstrated, the lesions of the skin being due presumably to toxins produced in foci more or less remote from the seat of the eruption, reaching the skin through the blood channels. In the former group are included acute miliary tuberculosis of the skin, lupus vulgaris, anatomical tubercle, tuberculosis verrucosa cutis, and the gummous tuberculide; in the latter, lupus erythematosus, lichen, scrofulosorum, the papulonecrotic

tuberculide, acne cachecticorum, acne scrofulosorum, and the erythema induratum of Bazin. Concerning the members of the first group there is general agreement as to their tuberculous character, the presence of the tubercle bacillus leaving no room for doubt. As to the second group, however, the agreement is by no means so general; and it is quite probable that future investigations may change our views somewhat about some of the members of it. The theory that the eruptions of this second class are due, not to the tubercle bacillus itself, but to the toxins produced by it, while a plausible and attractive one, still needs proof. It is true that a few investigators, like Schweninger and Buzzi, claim to have seen such an eruption as lichen scrofulosorum follow injections of tuberculin, but this lacks the confirmation of other experimenters.

The affection to which Darier first applied the term tuberculide is described in most recent text-books under the name *folliclis*, a name which was given it by Barthélemy to indicate its supposed association with the follicles of the skin; but as it has since been shown that the lesions are not situated in the follicles, the newer term papulonecrotic tuberculide is more appropriate.

It is characterized by an eruption of small, dark-red or bluish nodules most abundant usually upon the backs of the hands, the elbows and knees, the feet and ankles, and the helix of the ear, but not confined exclusively to these situations. The evolution of the lesions, which begin deep down in the skin, is slow, each one lasting from a few weeks to a month or two. When they have reached their acme the summit of each one becomes the seat of a small pustule or vesicopustule which is presently transformed into a black or brown crust covering a small loss of substance in the center of the nodule; with the fall of this crust a deep, pit-like cicatrix is left, not unlike the cicatrix of variola. In long-standing cases with numerous lesions upon the ears these organs may present a cicatricial condition like that so frequently seen in erythematous lupus; and this feature, together with others, led Boeck to describe the disease as disseminate lupus erythematosus. In the majority of cases the subjective symptoms are slight, but exceptionally the lesions may be quite painful, or intense pruritus may accompany them.

In practically every case decided evidence of tuberculous infection is present. Most commonly there is tuberculosis of the lymphatic glands, usually those of the neck—the so-called scrofulous glands; or there are scrofulous gummata upon the legs, or the affection described years ago by Bazin as erythema induratum. Less frequently the eruption is associated with pulmonary tuberculosis, which has usually preceded the cutaneous affection, but may follow it.

The subjects of this eruption almost invariably show a more or less marked cyanosis of the extremities: the hands are dusky-red or bluish as if cold, pressure upon the skin leaving marble-white marks which persist for an unusual length of time owing to the slowness with which the vessels refill; and this same dusky hue is present, usually to a less degree, upon the ears and feet.

The malady is most common in children and adolescents, and according to some recent observations of Nobl, is much more frequent in the former than is usually stated, this author having observed it thirteen times among 430 children sick with various diseases.

Some differences of opinion exist as to its histopathology, but these are most probably to be explained by the fact that the tissue alterations vary considerably with the age of the lesions, not only as to their character but as to their situation. Pollitzer and Fordyce regard the sweat-glands as the primary seat of the disease, while Barthélemy, as already remarked, believes it to be an inflammation of the follicles; but later investigations have shown pretty conclusively that it begins with inflammatory changes in and around the blood-vessels, the sweat-glands and follicles being implicated only secondarily. The morbid process has its origin in the deepest portions of the corium and gradually extends to the surface. The vessels are surrounded by an abundant round-celled infiltration which frequently extends down to the fat tissues beneath the corium, the walls of the arterioles and veins are markedly thickened, their endothelium swollen, and their lumina in consequence much obstructed or even completely obliterated. In lesions somewhat advanced extensive areas of necrosis are present in the central and lower portions of the corium in the midst of which blood-vessels with greatly altered walls may be seen.

If we except the single case reported by MacLeod and Ormsby, which possibly represented another form of disease, the presence of the tubercle bacillus has not been demonstrated. In the paper already referred to, Nobl states his belief that the eruption is directly due to the tubercle bacillus, but that, owing to the low vitality of this organism under the unfavorable conditions presented for its growth in the skin, it dies soon after the appearance of the inflammatory irritation produced by its presence, and in consequence cannot be discovered in the lesions.

The following cases, the first of which was seen some eight years ago, the other two within the past year, will serve to illustrate some of the more prominent clinical features of this variety of so-called tuberculide:

Mary P., a girl seventeen years old, with a marked tuberculous arthritis of the right knee, of six years' duration, came to the Skin Dispensary of the University Hospital for the treatment of an ulcerative affection of the left leg, upon which were three or four quarter-dollar-sized, round and deep ulcers with undermined and livid edges. In addition to these the calf of the leg was the seat of a firm, deep-seated, ill-defined infiltration, over which the skin was dusky-red and adherent. In the immediate neighborhood of the ulcers were a few pea-sized, bluish nodules. The disease had lasted two months and was very painful. In the course of the next two or three months an eruption of shot- to pea-sized, at first dark red, later bluish nodules appeared upon the backs of the hands, more particularly the fingers, the ankles, and the tops of the feet and toes. At the end of a week or ten days small pustules appeared upon the summits of most of these nodules, which soon became black or brown crusts covering small, but rather deep, ulcers; with the falling of these crusts a pitlike scar was revealed. At this time the hands and feet of the patient were habitually dusky-red and at times quite livid, as if cold, the vessels of the skin filling very slowly after they had been emptied by pressure. A small nodule which had not yet developed a pustule upon its summit was excised from the top of the foot for microscopical examination. Sections of this nodule showed practically no morbid change in the epidermis, but the middle and lowest portions of the corium were occupied by a large necrotic area, in the midst of which were a number of arterioles with thickened walls and, in many instances, with obstructed lumina. The walls of the venules showed an even greater thickening. Outside of this area of necrosis was a cellular infiltrate extending down to the fat tissue. A small number of giant cells were present, but no tubercle bacilli were found.

This case possesses a special interest because of the simultaneous occurrence of two distinct tuberculous affections of the skin—the *erythema induratum* of the calf and the papulonecrotic eruption on the hands and feet—associated with a long-standing tuberculous arthritis.

The second case which I shall report was typical of its kind.

Mr. S., twenty years old, was referred to me for advice concerning an eruption from which he had suffered for six or eight months. This eruption consisted of small bluish nodules with pustules or blackish crusts upon their summits, which in the course of some weeks underwent spontaneous involution, leaving small, round, quite deep scars. It was seated chiefly upon the lobes and rims of the ears, around the elbows and knees, and, less abundantly, upon the face and backs of the fingers. The eruption was not attended by spontaneous pain, but was quite tender upon pressure. The lesions began as deep-seated, tender, palpable, but not visible, nodules, which in the course of a week came to the surface, forming bluish, shot-sized elevations which shortly showed pustules upon their summits and, later, blackish eschars. It usually occurred in crops, there being periods of a month or more in which no new lesions appeared. It should be noted that, while the patient presented the appearance of robust health, there was an enlarged gland the size of a pigeon's egg just above the left clavicle. Internal medication seemed to have but little influence over the disease, but an abundance of outdoor exercise was always followed by a diminution in the number of the lesions and an increase in the intervals between the outbreaks. The disease has now lasted about three years, and seems to be slowly disappearing under the influence of outdoor living.

While this form of eruption is seen most frequently in childhood and youth, it may occur at a later period, as is shown by the following case, seen a few months ago:

Miss S., a nurse, thirty-one years old, had suffered for two years from a somewhat scanty eruption of small, acnelike lesions and larger, bluish-red, deep-seated, firm nodules, occupying the forearms, legs, and toes. The larger, intradermic nodules, according to the patient's statement, had appeared some two years ago, being in the beginning so deep-seated as to be invisible, although readily perceptible by touch. As they slowly approached the surface the skin over them became at first bright red, then livid and thin. The lesions upon the forearms and toes were of much more recent origin, having appeared only a few weeks before the patient was sent to me. All were more or less painful. The patient was quite evidently in poor general health, being pale and thin; and there was likewise an enlarged gland in the left axilla which had been present for many months.

These three cases are fair examples of a well-defined and readily recognized type of eruption which, whether we regard it as actually tuberculous or not, is closely related in some way to tuberculosis. Its occurrence in individuals otherwise apparently healthy should lead us to suspect, at least, the possible existence of latent tuberculous foci more or less remote from the seat of the eruption.

Drugs have little or no effect upon the eruption, although Donovan's solution has seemed to me to be of real service in some cases; the most generally useful internal remedy, however, is codliver oil. More beneficial than either of these is an abundance of fresh air and sunlight, and patients the subjects of this malady should be directed to live in the open as much as possible.

Danger in the Ingestion of Tuberculous Bacilli Which Have Been Killed by Heat.—A. Calmette and M. Breton sum up the results of various experiments and give certain conclusions which they have deduced: In guinea pigs infected with tuberculosis, it may be through the digestive system or by intraperitoneal injection, the repeated ingestion of small quantities of tubercle bacilli killed by boiling hastens death to a considerable extent. In healthy guinea pigs the repeated ingestion of tubercle bacilli killed by boiling is not without injurious results, and in certain cases brings about disorders which are absolutely like those that one observes when a non-tuberculous animal is made to consume at intervals of a few days several small successive doses of tuberculin. Certain experiments which are now being carried on in relation to large animals will soon prove whether these facts are true in relation to other species of animals which are susceptible to tuberculous infection. The writers even now, however, believe that the attention of physicians should be called to the fact that the ingestion of tuberculous products, even though sterilized by heat, may prove very dangerous for subjects already infected by tuberculosis and may not be inoffensive to those subjects who are perfectly free from this malady. Milk, then, coming from tuberculous cows, although it be sterilized, should not be used by man. Sterilization by heat is not sufficient to render this milk harmless. Especially must it be remembered that children and individuals already tuberculous should not be fed upon such milk. The public authorities should be impressed with the importance of this subject.—*La Province Médicale.*

Plaster-of-Paris Dressings.—The following hints for the preparation and use of plaster-of-Paris bandages may not be amiss. (1) Bandages should always be freshly made, gauze or crinolin being best for the purpose, into which the best dental plaster should be thoroughly rubbed by hand If bandages have been made up long, bake in an oven until thoroughly dry. (2) Wrap the part to be inclosed in sheet cotton, padding the bony prominences with care. (3) Soak the bandages in warm water; do not add salt to the water, as good plaster sets quite rapidly without. (4) Apply carefully and evenly. Cut every two or three turns, this will secure a much more uniform thickness, and a better appearing cast than by applying the bandage in one length. (5) If a very strong yet light cast is desired, incorporate strips of basket splint material. (6) A permanent cast should be covered with one or two thicknesses of a prepared gluten bandage, which protects the plaster from chipping and cracking, and also adds materially to its length. —*Clinical Review.*

Epithelioma of the Face Developed in the Scar of an Old Lupus.—This patient, a farmer twenty-nine years old and unmarried, was in the service of Dubreuil. The patient was neither an alcoholic nor was he syphilitic. At the age of sixteen the lupus developed on the right nasal ala. The lesion gradually increased, invading the neighboring parts in spite of treatment. At the age of twenty-seven rhinoplasty was performed. In 1902, when the patient was thirty-six years old, he came to the clinic showing the scar of an epithelioma of the lower eyelid and cheek which had been healed by arsenical paste. When the patient was thirty-nine years old examination showed the existence of an epithelioma of slow growth, pale, cornified, and occupying the stump of the nose which was left. No enlarged ganglia could be discovered. This case is an example of the tendency of certain cases of lupus which become complicated by epitheliomata. The latter affection is not a direct effect of the primary lesion. This malignant neoplasm has developed from the multiple scars resulting from the original pus nodules that healed.—*Journal de Médecine de Bordeaux.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, June 23, 1906.

THE NATURE OF THE BLOOD PLATES.

IN a paper on this subject by Kemp, Calhoun, and Harris, appearing in the *Journal of the American Medical Association,* April 7 and 14, 1906, it is stated that while the investigation of the blood plates in disease is a field that promises unusually good results, so far this province of study has been like a rich country undeveloped through lack of railroads. Until recently the methods that have been employed for determining fluctuations in the number of the blood plates have either been open to criticism on the score of inaccuracy or have been too laborious to be readily applicable for clinical work. Two great difficulties that confront the worker are the rapidity with which the plates disintegrate in shed blood under ordinary conditions, and their tendency to adhere to the surface of the appliances used or to stick together in clumps. Numerous diluting fluids have been devised to prevent this, and almost every author who has dealt with the question has elaborated his own technique for performing the enumeration. The tendency appears to be to reject those procedures in which the melangeur of the Thoma-Zeiss or Potain blood-cell counting apparatus is used, in favor of the method of making differential counts of the blood plates as compared with the erythrocytes and then determining the actual value for the latter in the usual way. Pratt (*Journal of the American Medical Association,* December 30, 1905) has adopted this plan, and states that there are four sources of error which have contributed to the production of the great discordancy of results to be noted in the figures given by the different workers in this field: (1) mistaking fragments of erythrocytes, the so-called Arnold's bodies, for blood plates; (2) the use of the graduated pipette; (3) the use of the ordinary counting chamber; (4) the lack of satisfactory preserving fluids. Pratt advises the use of a fluid containing sodium metaphosphate and sodium chloride, and determines the ratio of platelets to erythrocytes in fresh preparations of the blood, using a square diaphragm in the ocular to facilitate counting, then enumerating the red cells in the Thoma-Zeiss apparatus. The method of Kemp and his collaborators consists in the use of a fixative containing formic aldehyde and sodium chloride, for which they claim many advantages, the differential enumeration being then carried out in the ordinary counting chamber. Even in regard to the origin and the nature of the blood platelets many opinions are still held. There are those who look on them as by-products as it were in the manufacture of the red cells, suggesting the possibility of their being the lost tribe of nuclei of the normoblasts; another view is that they are the result of degenerative changes in leucocytes or red cells; and finally, it has been maintained that they are independent morphological elements of the blood. Yet another and a highly interesting suggestion is that recently made by Wright (*Boston Medical and Surgical Journal,* June 7, 1906), who, by means of the polychrome staining fluid to which his name is now universally attached, has been able to stain characteristically the blood plates in sections of fixed tissues and organs so that they may be positively recognized and may be clearly distinguished from other histological elements. After an extensive study of sections of bone marrow and other tissues prepared in this way, he expresses his conviction that the blood plates are detached portions of the cytoplasm or pseudopodia of certain giant cells or megacaryocytes found in the bone marrow and spleen. This view is founded in part on the similarity in morphology between the cytoplasm of the outbuddings of the giant cells and of the blood plates, on the demonstration in specimens of the apparent conversion of fragments of pseudopodia into blood plates, on certain zoological and embryological considerations, and on the relationship between the numbers of the blood plates and giant cells in some diseases of the blood-forming organs, such as pernicious anemia, lymphatic and myelogenous anemia, etc.

While so far but little has been learned in regard to the behavior of the blood plates in disease that is of direct practical benefit, the improvement in technical methods has already been of great service in enabling researches along these lines to be carried out with greater prospects of ultimate fruitfulness, and it is not unlikely that, as our understanding of these curious little structures increases, information that will be of more than theoretical interest may be obtained.

REGARDING FOOD.

THE subject of eating has been discussed from every conceivable standpoint and at somewhat undue length in medical and lay journals in Great Britain of late. The matter has been dealt with, perhaps, almost *ad nauseam,* for although it is one of supreme importance, the value of treating the consumption of food from the sensational point of view will scarcely commend itself to the earnest delver into scientific truths. A daily journal, modeled quite faithfully upon the lines of our own yellow press, has made considerable capital of the fact that the Cambridge University rowing crew, when training for their annual race with the picked oarsmen of the rival university of Oxford, chose eggs as the staple of their diet. Every day the enterprising journal in question published a dissertation on eggs in general, and on their value as food for oarsmen in training in particular. A voluminous correspondence regarding the nutritive value of eggs sprang up, and letters were inserted, some of which were calculated to move to mirth the most stony-faced of mortals and to strengthen further the belief of those who agree with Carlyle that the population of the earth is composed mostly of fools. The Cambridge egg-devouring crew won, so it may be predicted that

more will be heard of eggs as a sustaining and muscle-building diet.

Punch has intruded into the discussion concerning food and has thrown out the suggestion that the next sensational announcement in the medical journals will be that food is injurious to life. Another well-known London journal is of the opinion that this satire is quite legitimate, and intimates that certain modern medical journals deliberately put forward sensational theories in order to be quoted by the lay press.

It is, of course, very difficult to lay down hard-and-fast rules of diet for anyone, and it is manifestly impossible to do so for all. That what is one man's meat is another man's poison, is as true now as on the day when it was first said. So many points must be taken into consideration when selecting a suitable diet. Individuals' constitutions vary, the kind of life led is a very important feature of the situation, and age and climate exert a considerable influence upon the digestive powers. The food that is beneficial in a hot climate might be injurious in a cold one. There are those who pin their faith to meat foods, and who assert that in order to build up a hardy, strong constitution a liberal amount of flesh must be eaten. Opposing this view are the large numbers of vegetarians who hold that meat is valueless if not indeed injurious, and in support of this contention point to the notoriously strong Scotsman whose constitution has been built up on grain and cheese and vegetables in a harsh unkindly climate, while the bravery and dash of Irishmen and the skins and complexions of Irish women have been produced upon a diet of grain, buttermilk, and vegetables. The lessons learned from the Japanese war, so far as food is concerned, tend to show that meat is not indispensable when cold and suffering and hardships of all kinds are to be endured. The chief mainstay of the Japanese soldier in the field was cereals. The Roman gladiators trained and fought on a diet of figs and corn and oil, the Turkish soldiers on dates and meal, the fierce Sikh fighters on corn and pulse.

Dr. Josiah Oldfield, a well-known writer on dietetics in Great Britain, states that "during the first thirteen years of life children should have no flesh foods at all, but should be plentifully supplied with cereals, milk, and dried fruits, with fresh vegetables, and fresh ripe fruits in season. From puberty to adolescence, young people can eat anything and digest almost anything, if only they will take the trouble to masticate properly, but even then observation and experience teach that the best food for developing a well-set constitution, with sound nerves and muscles ready to endure the longest strain, is a dietary rich in the proteids obtained from milk and cheese, and replete with the fat of cream and butter and oil and cocoanut fats, and nuts themselves, with cereals and dried fruits as the basis of diet."

Dr. Oldfield is a decided food faddist and prejudiced against meat, but on the whole, his views so far as they go, are fairly sound. On one point, all authorities are more or less agreed, namely, that the ordinary well-to-do person eats too much. The well-to-do, as a rule, consume a far greater amount of meat than is really required to repair the nitrogenous waste of the body, while the poor eat more cereals and a larger bulk of food in order to get that amount of proteid for which a healthy person has a natural craving. Too much food with the poor usually means a greater proportion than is necessary of carbohydrates, while with the well-to-do, "too much" means an excess of the nitrogenous elements.

ACETONURIA IN PELVIC DISEASES.

There are certain types of acetonuria connected with gastrointestinal disturbances, with diabetes, or with toxemia, which have long been known and thoroughly studied. In addition to these there are other varieties which have been more recently described but regarding the etiology and behavior of which we are still very much in the dark. Here may be included the acetonuria which has been noted during pregnancy, labor, and the puerperium. The appearance of an acetonuria during pregnancy was at first regarded as an evidence of intrauterine death, but when it was shown that the phenomenon might be present during the course of an apparently normal pregnancy, its pathognomonic significance was denied. It was next demonstrated that various complications of pregnancy, including syphilis, hematocele, ectopic gestation, and albuminuria, particularly that associated with eclampsia and hyperemesis, were accompanied by an increased acetonuria. Among those who investigated the cause of this anomaly, the opinion prevailed that this condition was due partly to some disturbance in the metabolism of the fats, partly to an insufficiency of the carbohydrates.

A very extensive investigation with reference to this question has been conducted by Baumgarten and Popper (*Wiener klinische Wochenschrift*, No. 12, 1906), who examined quite carefully for acetonuria the urine of one hundred patients presenting pelvic lesions. In addition to the excretion of acetone itself, they also directed their attention to the closely related bodies, acetoacetic and betaoxybutyric acids. The cases under observation included both normal and complicated pregnancy, inflammatory conditions and tumors of the adnexa, puerperal sepsis, carcinoma uteri, myomata, cysts, and menorrhagia. In all of these the tests for acetoacetic acid were negative and acetone was present in traces in only a few instances. On the other hand a well-marked reaction for both of these bodies was obtained in seven cases of ruptured extrauterine pregnancy. Betaoxybutyric acid was not found in a single instance. The acetonuria invariably subsided in a few days after operation and the writers attributed it to the presence of a free hemorrhage, for when the acetone test was applied to the blood clots derived from these cases, a positive result was obtained. This is in accord with the claims of other investigators who have shown by experiments *in situ* the possibility of acetone formation from albuminoids in the organism.

These observations are extremely interesting, and as the test referred to can readily enough be made, the phenomenon may serve as a factor in the differential diagnosis of obscure cases, where some doubt may exist as to whether we have to deal with an hematocele or an adnexal tumor. The continued presence of a well-marked acetonuria was found in this investigation to be invariably associated with ruptured extrauterine pregnancy, either old or re-

cent, whereas in several instances in which the clinical evidences of an hematocele were prominent, but the test alluded to was negative, the operation disclosed that some other causal condition was present. The more detailed report on this subject, for that referred to here is merely a preliminary communication, will be awaited with interest and will probably stimulate other investigations along this line.

The Dangerous Strawberry.

It is well known that some unfortunate individuals suffer from an idiosyncrasy in regard to the luscious strawberry which bars them from the enjoyment of this earliest and most prized of our small fruits. To such we extend the assurance of our commiseration, and only wish for their sake that someone had elaborated an antitoxin with which they could sprinkle their berries, and so feast upon them during the all too short season without fear of intestinal or dermic retribution. But perhaps our pity is wasted, and it may be that they are fortunate in their abnormality. Such at least is the view taken by no less an authority than Metchnikoff, the Russian savant of the Pasteur Institute. In the second of the Harben lectures delivered by him at King's College, London, the latter part of May, he discoursed upon the hygiene of the alimentary canal, and threw a new light on what we have been wont to regard as the beneficent process of digestion therein. Noting that a marked increase of leucocytes in the blood occurred during the course of an infectious disease, he remarked that a similar phenomenon was observed during the process of digestion, and the analogy between the two cases was so striking that he suggested the disquieting thought that the digestion of food might also be a kind of infection. Indeed, he asserted boldly that after each repast a certain number of microbes passed through the intestinal walls and found their way into the general circulation, the faithful leucocytes then massing in force to repel the invasion. These microbes might effect their entrance into the circulation through lesions in the intestinal walls made by sharp or hard particles of food—an argument against the practice of prescribing bran bread and other irritating foods instead of gently acting laxatives in the treatment of habitual constipation. But the chief offender in this respect, he suggested, might be the helminths which many if not most of us harbor in our innocence. These worms, he said, had been shown to be active agents in the causation of the ever-present appendicitis, Guiard had suggested that they might serve to inoculate the mucous membrane with typhoid bacilli and other pathogenic microbes, and there was reason to believe that entozoa played a rôle in the causation of certain tumors. It was time, therefore, he concluded, to institute an energetic campaign against intestinal worms. It is manifestly impracticable to add vermifuges to the ordinary diet, and man must therefore direct his energies to the exclusion of the ova of those parasites by keeping a careful watch over what he puts into his mouth. And here the lecturer entered the lists against the raw-food faddists, and, indeed, against all of us who occasionally indulge in salads and other comestibles which have not been previously submitted to a temperature of 212°. All food and drink, he contended, should be boiled before being consumed. The tasty salad is, of course, forbidden, for washing with boiled water is not sufficient, and a boiled salad is unthinkable. And here we come to the saddest part. Among fruits this cibiclast, if we may be pardoned the term, said it was principally strawberries which introduced parasites, ova, and infectious germs into the intestinal canal. It was therefore necessary to boil them—boiled strawberries! It is true he said strawberries might be grown under satisfactory hygienic conditions so as to permit of their being consumed raw. But to that end it would be necessary to watch over the soil and manure, and to use only irreproachable fluid for the purpose of watering. The conditions are too hard, and it is evident that the strawberry must go—go to the jam-pot we mean. This is a subject worthy of one of the scare leaders of the *Lancet*, and we leave to our esteemed contemporary its appropriate treatment. If our enlightened readers are willing to defy appendicitis and leucocytosis, and even helminthiasis, during the few remaining days of the strawberry season, we have nothing more to say. Our duty is done in placing the facts before them.

Breast Feeding.

It is claimed by many that the care of infants can no longer be regarded as a purely medical question, but that with the growth of civilization it has also become a social and economic problem. In view of this fact, the question of whether the women of the present day are as capable of nursing their offspring as those of the past, has become one of paramount interest. It is now almost a matter of custom to take a pessimistic view of the situation, and the theory has been advanced that the continued non-use of the mammary glands by several generations of women will gradually result in their atrophy. Such an extreme standpoint is perhaps an exaggeration and it has been repeatedly demonstrated by pediatrists that the situation is not hopeless and that in numerous instances an apparently inactive breast may be made to functionate properly. It therefore remains for the obstetrician to institute such precautions at an early date as will insure to the child his natural supply of food. In the majority, if not in all women, the breasts become physiologically active after parturition, but although this fact is acknowledged we have little reliable statistical information regarding the length of time during which this function persists or to what extent it may become developed. A point which has been clinically demonstrated in connection with this subject is that there are occasionally women who are physically incapable of lactation, although the necessary mammary gland development is apparently present. This question has been investigated by Engel (*Monatsschrift für Geburtshilfe und Gynäkologie*, Vol. XXIII, No. 4), who studied very carefully the breasts of a number of women dying during or after labor, with the idea of determining whether this deficiency was due to a physiological or to an anatomical cause. Among these cases two distinct anatomical types could be distinguished with reference to the glandular and fibrous constitutents. The one was normal, the other represented an incompletely developed organ in which the fibrous elements outweighed the glandular. No reason could be found for the lack of development in the latter class, primiparæ and multiparæ were included in both, heredity was not a factor, neither was nativity or environment. Although no cause was apparent, there is no doubt of the fact, and such breasts cannot become physiologically active to the normal degree, as the necessary elements are present only to a limited extent. But the writer claims that their function should nevertheless be cultivated, and if taken in time they may become sufficiently developed to afford to the child at least the benefits of

mixed feeding. Most diseases in infant life can be traced to improper or defective feeding, and the good start which a baby gets from even a few months of breast nursing furnishes it with an appreciable degree of resistance against future trouble.

The Treatment of Torticollis.

The pathology and therapeutics of this condition have received renewed attention during the past decade, and while we are not entirely clear as to the true pathology, progress of a more satisfactory character has nevertheless been made in its treatment, although the methods proposed by the various writers are by no means in agreement. Traumatism has been accepted as the most frequent cause of the deformity, and many are of the opinion that the changes brought about in the sternomastoid are the result of a myositis following an infection by pathogenic organisms centering in the injured structure. An interesting and very complete discussion of the question has been written by D. G. Zesas (*Zentralblatt für die Grenzgebiete der Medizin und Chirurgie*, Vol. VIII, No. 18), in which he concludes that the treatment of torticollis depends entirely on the length of time during which the affection has been present, on the extent of the change which the muscle has undergone, and on the amount of secondary disturbance. In all acute and uncomplicated cases massage and the various orthopedic measures should be tried. If these are ineffectual, resort must be had to operation. The various subcutaneous methods of tenotomy cannot be accepted as rational, and it seems safer and more satisfactory to do an open operation, in which the contracted muscle as well as all other neighboring constricting bands must be severed. This operation should always be followed by a course of gymnastics and other suitable after-treatment. In all severe cases and when recurrences have taken place, a partial extirpation of the sternomastoid muscle is indicated, great care being taken not to injure the jugular vein or the spinal accessory nerve.

News of the Week.

Orators of the American Medical Association.—The following have been elected to deliver the annual orations before the American Medical Association at the meeting in Atlantic City in 1907: *Oration on Surgery*, Dr. William H. Wathen of Louisville, Ky.; *Oration on Medicine*, Dr. James B. Herrick of Chicago, Ill.; *Oration on State Medicine*, Dr. Samuel G. Dixon of Philadelphia, Pa.

Lane Medical Lectures.—The course of Lane Medical Lectures of the Cooper Medical College of San Francisco commencing August 20, 1906, and continuing two lectures daily during the five days of the week, will be given by John C. McVail, M.D., D.P.H., of Glasgow, Scotland. The subjects of the lectures will be "Practical Hygiene, Epidemics, and Preventive Medicine."

A New Michigan State Medical Society.—At a meeting of physicians and surgeons of Grand Rapids, on June 11, a committee was appointed to formulate a plan of action looking toward the organization of a new and independent State Medical society. The new organization will be independent of the American Medical Association. The committee is composed of Drs. Perry Schurtz, J. B. Griswold, J. Kirkland, Charles E. Hooker, and Henry Hulst.

Outings for Children and Convalescents.—The Society of St. Vincent de Paul will begin its season of fresh-air work among the poor children of the tenements next Monday by sending out a party of 250 to its fresh-air farm at Spring Valley, in the Ramapo Hills, Rockland County. Other parties will follow every fortnight until the middle of September. Last summer the society gave about 1,500 children a two weeks' free outing on the farm. This year it is hoped that the number will be increased to upward of 2,000. The society also maintains at Spring Valley a free convalescent home for women, which was opened last September. It makes no distinction of race, creed, or color, and is kept open all the year round.

Fresh Air for Sick Babies.—In order to demonstrate the value of fresh air for the sick children of the poor the Association for Improving the Condition of the Poor has constructed an out-of-door camp for sick babies on the bluff at Sixty-fourth and Sixty-fifth streets facing the East River. There are seven double-roofed, windowless tents 16 x 30 feet, each with a 12-foot porch. Each tent has cots for twelve babies. Three tents will be reserved for sick babies staying day and night and the others for babies to be cared for by their mothers during the day. It is hoped in this way to convince the city authorities of the desirability of setting aside parts of the reservation piers as babies' clinics.

The "Edinburgh Medical Journal."—Since this venerable publication first appeared in 1805 it has undergone many changes, both in its ownership and among the incumbents of its editorial chair. A transition that will no doubt prove especially gratifying to its readers is the recent purchase of the journal by a representative body connected with the Edinburgh Medical School.

Yale Medical School.—Dr. George Blumer has been appointed to the Chair of the Theory and Practice of Medicine in Yale University to succeed the late Dr. John S. Ely. Dr. Blumer was formerly a director of the Bender laboratory at Albany, and Professor of Pathology at the Albany Medical College, and was, until recently, connected with the Medical Department of the University of California.

A Pathological Study of the Beef Question.—At a special meeting of the Council of the Chicago Medical Society, recently held, President C. S. Bacon was instructed to appoint a committee of three pathologists to cooperate with the committees appointed by the Chicago Commercial Association and the Illinois Manufacturers' Association in the proposed investigation of the stockyards. In response to the request contained in a recent letter written by Health Commissioner Whalen the specific object of the committee will be to determine whether carcasses affected with localized tuberculosis are fit for food after the diseased parts are cut out.

Hospital vs. Fish Market.—Owing to the stench from a fish market in the rear of the Beth Israel Hospital at Cherry and Jefferson streets it became necessary to remove all the patients from the children's ward. On complaint to the Health Department an inspection of the market was made, and it was found to be in a thoroughly insanitary condition, the venders throwing all sorts of refuse on the floor and exercising no attempts at cleanliness. An order was served on the owner compelling him to make improvements.

Hospital for Infants in Worcester, Mass.—Green Hill Park and its buildings, the large estate in Worcester of the late Andrew H. Green of New York, will be opened next month as a hospital for infants with the title of "Green Hill Summer Hospi-

tal for Infants." The officers of the executive committee are: *Chairman,* Dr. Wallace T. Clark; *Secretary and Treasurer,* Dr. Eldridge Mix. The scheme for the infant hospital, like the Boston Floating Hospital, originated with Dr. Clark when he was city physician of Worcester.

A New Children's Hospital in Rhode Island.—A hospital for crippled children is to be established on the north end of Prudence Island, in Narragansett Bay, through the generosity of James A. Garland of New York. Accommodations are to be provided for from twenty to twenty-five patients.

A Measure of the Suffering Saved by Hospitals.—Sir Frederick Treves, Sergeant-Surgeon to the King, in delivering an appeal for contributions to the London hospitals from the pulpit of the celebrated Union Chapel at Islington "on Hospital Sunday," said that the amount of pain relieved could be roughly gauged by the quantity of morphine consumed at the hospitals. One-sixth of a grain would relieve pain for an hour. By this test 87,000 hours of pain—that is practically ten years—were avoided in one London hospital alone in 1905.

Illinois Northern Hospital for the Insane.—The superintendent of this institution, Dr. Frank S. Whitman, recently sent in his resignation, to take effect July 1. Dr. V. H. Podstata, superintendent of the Dunning institutions, has been offered the succession to Mr. Whitman, and it is understood that he will accept; but the date of his retirement from his present position has not been decided.

To Study the Drug Trust.—United States District Attorney Keating has been deputed by Attorney-General Moody to investigate the conditions in the drug trust, suits against which were filed in Indianapolis some weeks ago. He is expected to study the character of the druggists' associations in Philadelphia, New York, and other cities in order to be able to direct the trial of the cases in Indianapolis.

No Yellow Fever at Panama. — According to despatches from the Isthmus there are no cases of yellow fever at Colon, and the general health conditions are excellent. During May the death rate among employees was the lowest recorded in twelve months. The diagnosis of the three alleged cases of yellow fever reported from Ship Island is discredited by the Panama authorities.

Quarantine Against Havana.—Owing to the recent occurrence of a case of yellow fever in Havana and in Matanzas passengers arriving on incoming steamers from Cuba will be obliged to produce immune certificates at quarantine. All persons without these certificates will be transferred to Hoffman Island for observation until the period of five days has expired from the time of leaving Havana. No case of yellow fever has been reported from Havana since June 5, and there are said to be no suspected cases.

A Severe Typhoid Epidemic is reported from Greens Cut, Ga., a village of about 200 inhabitants, fifty of whom are down with the disease.

New York Sausage Factories Closed.—Two sausage factories in this city have been closed by the Health Department, owing to the filthy and insanitary conditions found to exist in them.

Enlargement of Chicago Baptist Hospital.—The directors of this hospital contemplate the erection of administration offices, and an addition to the present building, at a cost of about $10,000.

American Gastro-Enterological Association. — At the ninth annual meeting of this association, held at Boston, Mass., June 4 and 5, 1906, the following officers were elected for the ensuing year: *President,* Dr. H. W. Bettmann of Cincinnati; *First Vice-President,* Dr. Julius Friedenwald of Baltimore; *Second Vice-President,* Dr. F. H. Murdoch of Pittsburg; *Secretary and Treasurer,* Dr. Charles D. Aaron of Detroit.

American Urological Association.—At the fifth annual meeting of this association, held in Boston on June 4 and 5, under the presidency of Dr. Ferd. C. Valentine of New York City, the following officers were elected: *President,* Dr. Bransford Lewis of St. Louis; *Secretary,* Dr. Hugh Cabot of Boston; *Treasurer,* Dr. F. R. Hagner of Washington, D. C.

South Dakota Medical Association.—At the meeting of this association held in Watertown on May 25 Sioux Falls was chosen as the place for the meeting in 1907, and the following officers were elected for the ensuing year: *President,* Dr. E. T. Ramsey, Clark; *Vice-President,* Dr. J. G. Collar, Brookings; *Secretary,* Dr. Alway, Aberdeen.

North Carolina State Medical Society.—At the meeting of this society, held in Charlotte on May 30, the following officers were elected for the ensuing year: *President,* Dr. S. D. Booth of Oxford; *First Vice-President,* Dr. C. L. Strong of Charlotte; *Second Vice-President,* Dr. J. E. McLaughlin of Statesville; *Third Vice-President,* Dr. W. F. Hargrove of Kinston; *Secretary,* Dr. D. A. Stanton of High Point; *Treasurer,* Dr. H. McKee Tucker of Raleigh. Morehead City was chosen as the place for the next annual meeting, and the movement to have the time changed from spring to fall was defeated.

The Æsculapian Society of the Wabash Valley held its fifty-ninth semi-annual meeting at Robinson, Ill., May 31, 1906. Dr. H. N. Rafferty of Robinson, Ill., was elected secretary and treasurer, to fill the vacancy occasioned by the death of Dr. H. McKennan of Paris, Ill., which occurred in March last.

Vermont Homeopathic Medical Society. — At the sixty-fifth annual meeting of this society recently held in Montpelier the following officers were elected: *President,* Dr. F. H. Davis, Lyndonville; *Vice-President,* Dr. F. H. Everett, Castleton; *Secretary,* Dr. George I. Forbes, Burlington; *Treasurer,* Dr. J. F. Shattuck, Wells River.

Maine State Homeopathic Medical Society.—At the fortieth annual session of this society, held in Bangor, on June 12, the election of officers resulted as follows: *President,* Dr. R. J. Wasgatt of Rockland; *Vice-Presidents,* Dr. R. S. Graves of Saco, and Dr. John T. Parmer of Portland; *Secretaries,* Dr. Carrie E. Newton of Brewer, and Dr. L. A. Brown of Portland; *Treasurer,* Dr. W. S. Thompson of Augusta.

Obituary Notes.—Dr. Charles H. Alden, Brigadier-General U. S. A., retired, died at Pasadena, Cal., on June 7. He was born in Philadelphia in 1836 and was graduated from Brown University in 1856, with the degree of A.B. He received his medical degree in 1858 from the University of Pennsylvania, and a year later he entered the medical service of the United States Army. He served in several Indian campaigns in the West, and also in the Civil War. He occupied many positions of prominence in the army medical corps, and in 1894 was the first president of the Army Medical School. In 1894 he was made president of the Army Medical Examining Board at Washington, D. C. In 1899 he was elected president of the Association of Military Surgeons, and in 1900 he was retired from active service on account of age. In 1904 he was

promoted brigadier-general on the retired list by act of Congress. He is survived by a daughter and two sons, one of whom is Dr. Elliot Alden of Cleveland, Ohio.

Dr. GILBERT L. GIFFORD, the oldest practising physician in Hamilton, Madison County, N. Y., died suddenly on June 11 while attending a meeting of church trustees.

Dr. EDWIN T. JONES, chief of the staff of the Jamaica Hospital, died of apoplexy in Utica on June 11. Dr. Jones was on his way to Saranac Lake and stopped at Utica over night to visit a friend.

Dr. ANDREW D. BLANCHARD of Melrose, Mass., died on June 11 at the age of eighty-three years. He was graduated at Harvard in 1842 and received his medical degree from Harvard Medical School four years later. He was said to be the oldest surviving surgeon of the Civil War.

Dr. JOHN R. MAXWELL of Keokuk, Iowa, died on June 3, at the age of thirty-four years. He was the son of Dr. T. J. Maxwell and received his medical education at the Keokuk Medical College.

Dr. HENRY A. CARRINGTON of Bristol, Conn., died on June 9, at the age of eighty years. He was a graduate of Harvard College, and also received his medical degree from that university. For many years he practised medicine in New Haven. About fifteen years ago he retired from active work and went to Bristol.

Dr. SAMUEL H. LOWREY of Huntsville, Ala., died on June 7, at the age of fifty-seven years. He was formerly health officer of Huntsville, and had served as vice-president of the Alabama State Medical Society.

Dr. JOHN A. WAKEMAN of Minneapolis, Minn., died on June 8, at the age of ninety-one years. Dr. Wakeman was one of the oldest homeopathic physicians in the United States, having practised for more than sixty-five years in Ohio and Illinois.

Correspondence.

TRYPSIN AND AMYLOPSIN IN CANCER.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—The published report (MEDICAL RECORD, May 19, 1906, p. 809) of a discussion before the Medical Society of the County of New York tempts the writer to offer the following remarks as a preliminary note, based upon the result of his scientific study of eclampsia. The medical profession in America can easily test the truth of the writer's contention, by using diastase in any case of pregnancy where there is the slightest threatening of eclampsia.

The "trypsin" treatment of cancer had not long been in use, when in January last some French and Italian physicians informed me of certain bad symptoms of vomiting, nausea, pain in the back, "sleeping in any position," mental and physical torpor, etc., following injections. In answer to their requests for scientific advice, I urged them to treat it as they would the vomiting of pregnancy, and for myself I began to study eclampsia. For the treatment is based upon the introduction of an artificial "critical period" (*vide* J. Beard, "Certain Problems of Vertebrate Embryology," 1896, and "The Span of Gestation," 1897, Jena, Gustav Fischer), and its course would naturally be the same as the events from the seventh week of a normal gestation. It was soon seen that no rational treatment of eclampsia existed. There was an extensive experimental study of it in the *Archiv für Gynäkologie* (Vol. 76, 1905, pp. 507 to 585) by Professor Zweifel, as well as a lecture by him in the *Münchener medizinische Wochenschrift* for February 13, 1906. His article bears the title "Zur Aufklärung der Eklampsie." It would take up much space to describe his results. Briefly, he sets it down to the formation of sarcolactic acid in the fetal blood and placenta. In my opinion his conclusions rest upon very thin ice, and there may well have been other substances. However that may be, I have gone behind it all, to the true source of the mischief.

As Professor Zweifel himself found, the diastatic ferment is absent in fetal blood. The reason of this is not far to seek. In the days of long ago, and as now happens in most marsupials, birth took place at the critical period, and the milk-nutrition was initiated. In this the diastatic ferment is of no use.

When, as she did, Nature prolonged the gestation, in order to bring the young into the world in more perfect form, she deferred in so doing more and more the start of mammary nutrition. In prolonging the gestation she forgot to introduce diastase at an earlier period, and the "memory" remained that it was not needed until the milk-period had passed. Consequently there is an absence of the diastatic ferment during all fetal life. Usually the difficulties caused by this can be got over, if the maternal pancreas form sufficient diastase. But if there be any failure in this respect, the consequences may well be disastrous. In a way the difficulties may be said to have been usually overcome, but pregnancy, from the seventh week onward, owing to this absence of the diastatic ferment, is a sorry business. Probably in all cases the oral or hypodermic administration of diastase during the last months of pregnancy would be of great benefit to the mother. In certain forms of cancer, more especially uterine cases, it cannot with safety be dispensed with. When the patient becomes drowsy, it is called for. In some cases, not in all, symptoms of eclampsia, varying in degree, arise in the "trypsin" treatment of cancer. The comparison between this and the phenomena of gestation proves to the embryologist that it is and can only be the absence or the insufficiency of diastase which causes it. In a gestation without eclampsia there must be something being formed either by mother or fetus which prevents its arising. If eclampsia ensue, the want of diastase alone can be at its basis. Therefore, in the treatment of cancer by pancreatic ferments injected into the blood it is most desirable that a pure trypsin alone without much diastase should not be employed, and if bad symptoms arise, these should be met by the giving of sterile hypodermic injections of 5 per cent. diastase solution up to 40 minims daily. The like treatment is called for in cases of eclampsia, or where it is threatened.

It is becoming more and more evident that, in the treatment of cancer by the pancreatic ferments, after some few weeks of the trypsin injections, say four, if not earlier, this injection should be replaced in the treatment, until the remains of the degenerating tumor be removed, by injections of the diastatic ferment, up to 40 minims daily. There is not a particle of doubt in my mind that such injections would also remove the symptoms of eclampsia in pregnancy.

JOHN BEARD, M.D.
University Lecturer in Comparative Embryology.
EDINBURGH, SCOTLAND, June 4, 1906.

OUR LONDON LETTER.

(From Our Special Correspondent.)

MEDICAL COUNCIL—OPERATIONS FOR NON-MALIGNANT DISEASES OF THE STOMACH—THROMBOSIS OF ABDOMINAL AORTA—PULMONARY EMBOLISM—ACUTE ATONY OF THE STOMACH AND INTESTINES.

LONDON, June 1, 1906.

THE further discussions at the Medical Council are not likely to be of much interest to our readers, although some of them are of importance to us here. Charges against four dentists trading as the "American Dental Institute" and registered under the companies' acts for promoting advanced American dental surgery were made and proved by the Council. Their names were ordered to be removed from the register as guilty of conduct infamous in a professional respect.

The same fate overtook two English dentists who had formed a "two-man company," and with the aid of unqualified assistants carried on practices in several places.

The little scheme of the ruling clique of the British Medical Association to monopolize the representation of direct members to the Council was brought up, and evidently was disapproved, although a number of members abstained from voting. The president stated, in reply to a question that persons elected under the conditions proposed, could not, with propriety, take part in discussions brought before the Council by the association. This should, perhaps, be a sufficient hint of the general opinion which has been evoked by the interference of the association. It is a return to some of the bad old ways which optimists hoped had been discarded; and this is not the only instance of such return.

Sir V. Horsley proposed that the Privy Council should be approached with a view of getting some form of ballot substituted for the signed voting papers now used. It seems strange that for such an election a demand for a secret ballot should be made. If indirect representation had been the method, as was actively advocated at the time, this and other matters would not have been a source of differences. The British Medical Association has something to regret for its action there—and will probably have still further proofs of its mistake.

For the first time in ten years the Council is possessed

of a surplus. This is largely due to the greater expedition with which business has been transacted—a fact to be commended to the notice of the president and his colleagues.

The Pharmacopœia Committee has collected material and obtained reports for future use, but there is no prospect of a new edition for some time.

A meeting was held last week in promotion of the aims of the British Red Cross Society, which, as explained by Lord Rothschild, presiding, is the outcome of a fusion of two existing bodies, viz., the National Society for aid to the sick and wounded, and the Central Red Cross Council. A message was read from the Prince of Wales, wishing success and saying he was "impressed with the necessity of making preparations for war in times of peace." H. R. H. also said the Queen had the welfare of the society much at heart, and he hoped in time a branch would be found in every part of the Empire. Lord Rothschild said the National Society, from its foundation in 1870, had expended nearly half a million sterling in assisting the sick and wounded in war. Lord Tweedmouth said that the overlapping of hospital work in the field was not desirable, consequently it had been realized generally that there should be some central organization, active in times of peace, which would interest the public in the provision of material for the sick and wounded in war times. General Lord Methuen said he hoped the society would study sanitation, in which we were much behind the Japanese Army.

Mr. Moynihan gave, as the Royal Medico-Churigical Society, an account of 282 cases of operation for non-malignant diseases of the stomach, being his complete series of such cases to the end of 1905. These he arranged in four groups: Perforating ulcer of stomach and duodenum, 24 cases with 9 deaths; persistent hemorrhage, 27 cases with 3 deaths; chronic ulceration and dilatation, 209 cases with 2 deaths; hour-glass stomach, 22 cases with 3 deaths. Mr. Moynihan believes that the mortality from hemorrhage in chronic gastric or duodenal ulcer is greater than usually supposed. It is the constant recurrence of hemorrhage that renders a resort to operation necessary in these cases. No single hemorrhage, however large, would justify operation, but only frequent recurrences at lesser intervals and in larger quantities. In no case should an operation be performed during the hemorrhage.

Mr. Paterson remarked on the diminishing mortality of gastrojejunostomy, in those cases, fallen to a little over 1 per cent. After-history is often difficult to ascertain, but he had collected 116 cases of operation for perforation. In 92 per cent. there was definite history of perforation, and in only a small proportion a history of hemorrhage.

Perforation on the posterior wall occurred in 12 per cent. The mortality of operations for perforated ulcer would probably be reduced by gastrojejunostomy after suture of the ulcer done at the same time.

Dr. Hale observed that in two of the twenty-seven cases of hematemesis no ulcer was found at the operation or after death. In twenty-seven cases which he had collected the same fact appeared. In records of 10,000 post mortems there were only two deaths from hematemesis without any ulcer being found. Thus merely oozing might give rise to the bleeding when operation would not be required. Mortality from simple hematemesis was shown to be very low. It was probably better for no operation to be done while the bleeding was going on, but after it had ceased a gastrojejunostomy, if it had been severe.

Mr. Eve laid stress on diagnosis, asking on what symptoms chronic ulceration of the stomach could be certainly diagnosed, and, further, by what signs we might recognize the presence of the ulcer when the abdomen was opened. Palpation of the exterior was not sufficient, as a rule, and an opening on the posterior wall was needed for exploration. Many seemingly typical cases showed no ulcer at the operation.

Dr. Hawkins commented on the rarity of death from hematemesis even when most severe.

At the Clinical Society, on the 25th ult., Dr. F. Hawkins gave an account of a case of thrombosis of the abdominal aorta in a woman of fifty-six. She had complained of giddiness, reeling, and pains in the head in 1900. In January, 1904, cramp in right leg, and afterward in left, seized her. In May of same year numbness in the legs and sensitiveness to touch, with great pain on pressure, came on. On June 4 sudden coldness and numbness of legs, cold hands, blue lips, and feeble pulse at wrist. No femoral pulsation perceptible; an hour later vomiting, abdominal pain, and later great distention and death. At post mortem mitral stenosis was found. The femoral and iliac arteries were occluded and a clot found in the aorta, extending above the superior mesenteric artery. A calcareous plate was on the posterior wall at the bifurcation. An old infarct was in the right kidney, and several recent ones in both kidneys.

Dr. Fawcett showed three specimens of thrombosis of the aorta. Mr. Harvard spoke of the rarity of thrombosis in comparison with atheroma of the aorta. Mr. Baker related a case in which a woman woke up with great pain in her legs. Pulsation was absent in both femorals, but returned in right forty-eight hours afterward, when gangrene set in on the left foot. Amputation was done, but the vessels found normal. The suddenness and gangrene led to the supposition that embolism had occurred. Dr. A. E. Garrod said he recollected a similar case in which the patient was admitted with numbness, but no abdominal pain. But after death a clot was found extending one inch above the bifurcation.

Pulmonary embolism was the next subject brought before the society. Dr. C. R. Box communicated six cases, in each of which he believed that a thrombus had first formed in the pulmonary artery, and that later the clot became displaced and the symptoms of embolism set in. He insisted on the importance of recognizing the premonitory signs, viz., development of a murmur at the base of the heart, acceleration of the pulse, moderate cyanosis, and dyspnea. Death may be instantaneous with pallor, or there may be some delay, with cyanosis and asphyxia. Infarction of the lung is exceptional. In reference to treatment it was mentioned that artificial respiration would be dangerous, as it might dislodge further clot.

Mr. Spencer said he did not consider it proved that the clot had been formed in the pulmonary artery from its absence in the peripheral vessels.

Dr. Tooth mentioned some cases in which a coiled clot was found and one in which the clot looked like a cast of the inferior cava.

Mr. Clutton and Mr. Makins related cases in which clots had formed in the veins, and Dr. Box replied to a question raised that a cast of the pulmonary valves on the clot proved where it was formed. Surgeon-General Longhurst suggested that ammonia might be of service.

Dr. Parkes Weber gave a short account of a case of acute dilatation or atony of stomach and intestines, which might, perhaps, be termed rather "gastrointestinal tympanites." He spoke of the analogy with "ballooning of rectum," "paralysis of the non-gravid uterus," and of "acute atony of the bladder during operations," all of which conditions were temporary states of atony in hollow viscera. His case was in a woman of twenty-one, who, six weeks after an illness, was admitted about the third day of an attack of pleuropneumonia. She took food, but could not bring up the flatus which rapidly formed. Great distention ensued. There was some relief by lavage of the stomach, but intestinal meteorism seemed to remain. A pericardial friction was heard for some time, but ultimately the patient did well. It was remarked that out of forty-four cases of acute gastric dilatation collected by Campbell Thomson three were connected with pleurisy and pneumonia.

A member suggested the term paralytic as better than atonic, and another thought obstruction in the duodenum might give rise to acute dilatation.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

THE NEW OPIUM ACT—PLAGUE—INFECTED RATS IN BINONDO—PERSONAL.

MANILA, P. I., April 28, 1906.

THE new opium law, Act No. 1,461, recently passed by the Philippine Commission, became effective April 1, 1906. The law is the outcome of the agitation against the opium vice, which is so common among the Chinese, and is designed primarily with a view of preventing the Filipinos from becoming its victims. The Act of Congress passed March 5, 1905, in Section 80, Subsection (b) provides that after March 1, 1908, it shall be unlawful to import opium into the Philippines in whatever form, except by the Government, and for medicinal purposes only, and that at no time shall it be lawful to sell opium to any native of the Philippine Islands, except for medicinal purposes. In order to regulate the traffic in opium until 1908, when its importation is to be strictly forbidden except as provided above, the Philippine Commission passed an opium law, of which the following is a brief résumé:

Only Chinese persons are permitted to use opium in any of its forms, unless prescribed by a physician, and they are required to make a formal application to the effect that they are confirmed users of the drug, whereupon a certificate will be issued to them upon the payment of $2.50, and even then opium may not be used except in the residence of the user. It shall be unlawful to sell, transfer, give, or deliver opium in any of its forms to any person, unless such person is a duly licensed physician, pharmacist, or duly licensed wholesale or retail dealer in opium, or a registered user of

opium. Exception is made in the case of scientific bureaus of the Government, and hospitals.

Duly licensed physicians may prescribe and administer opium as a medicine, but any physician who habitually prescribes opium for his patients, when the physical condition of such patient does not require its use, shall have his license to practise medicine revoked by the Board of Medical Examiners for the Philippine Islands, and, in addition, shall be punished by a court of competent jurisdiction, by a fine of not less than $125 nor more than $500, or by imprisonment for not less than six months nor more than one year.

Any person other than a licensed pharmacist, who imports, cooks, or prepares opium or any narcotic extract from opium, in quantities of one kilo or more, shall be deemed a wholesale dealer, and must have a corresponding license. Every other person, other than a licensed pharmacist or wholesale dealer in opium, who sells, deals, or traffics in opium in any of its forms, shall be deemed a retail dealer in opium, and must have a corresponding license, provided however, that persons engaged in selling, or offering for sale, giving away, or bartering opium in such manner and in such quantity as to bring them within the definition of either wholesale or retail dealer shall be subject to both the wholesale and retail license tax.

It shall be unlawful for any other persons than those mentioned above to have in their possession opium in any of its forms, except on the permit from the Collector of Internal Revenue, or as a medicine prescribed by a duly licensed and practising physician. Any dealer in opium must display a sign above his place of business, with the words "Licensed Dealer in Opium."

Ten days after the Act went into effect, all dealers were required to submit an accurate statement showing the amount of opium on hand. Opium may be stored only in places approved by the Collector of Internal Revenue. A book must also be kept, either in English or Spanish, which shows the full quantity of opium at time of last report, the amount and date upon which additional amounts were received, the firm or person from whom received, and the kind. In addition, the book must also show the date and hour and price of each sale made from stock.

If at any time an inspector of the Bureau of Internal Revenue finds a discrepancy between the actual amount on hand and that shown by the records, the penalty shall be double the value of the deficiency or excess that exists. With every sale of opium, the dealer must furnish the purchaser a certificate of sale which shows the name and address of the purchaser, the kind, quantity, and price, and such other information as the Collector of Internal Revenue may desire.

Every wholesale dealer in opium must pay a tax of $500 per year, and give a bond to the amount of $5,000 for the carrying out faithfully the provisions of the Act. Retail dealers shall pay $100 per year. For all opium on hand, or that will be purchased hereafter in the Islands, must be paid an internal revenue tax of $1.25 per kilo. All opium imported must pay the regular customs duty of $4 per kilo for crude opium and $5 per kilo for prepared or manufactured opium. In addition, before opium can be released from the Custom House, there shall be paid an internal revenue tax of $1.25 per kilo on crude opium, and $3.75 on prepared opium.

The license and internal revenue tax required to be paid by the Act shall be covered into the Insular Treasury and shall constitute a special fund to be devoted solely to the following purposes: (1) The printing and dissemination among the people of information as to the evils resulting from the use of opium; (2) the payment of the reasonable expenses, in some reputable hospital, of those desiring to cure themselves of the opium habit; (3) the payment of the expenses of such Filipino students as may be sent by the Insular Government to the United States for education; (4) payment of salaries of Filipinos who have been appointed Insular teachers; (5) the construction of schoolhouses and school buildings in the various municipalities of the Islands: Provided, that 25 per cent. of all fines imposed by reason of violations of this Act shall be paid to the person who furnished the original evidence and substantiated it, which led to the detection of the offense and the imposition of the fine. The name of the informer shall be specified in the judgment of the court, when conviction is had in the court.

From the foregoing it will be seen that the law is most drastic in character, and if rigidly enforced, it would seem that the sale of many patent medicines will be stopped.

Plague-infected rats still continue to be found in the district of Binondo. Several have also been found in the adjacent district of Tondo. The Bureau of Health has had rats caught in every section of the city, and had them bacteriologically examined, but so far the results have been negative with the exceptions noted above. The rat-infected area does not extend over more than a few blocks. Active disinfection and rat catching are still being carried out.

The last case of human plague occurred April 14, and was the sixth that had been recorded since January 1, 1906. A Japanese woman, having symptoms resembling those of plague, arrived here from Kobe, Japan, April 22, and is now under observation at the San Lazaro Plague Hospital.

Dr. Dudley of the St. Paul Hospital, who was formerly connected with the Bureau of Health, and who has recently recovered from a severe illness, departs for the United States to-morrow, for several months' vacation.

Lieut.-Col. D. M. Appel, Asst. Surg.-Gen., U. S. Army, has completed his tour of duty in the Islands, and will return to the United States on the transport that leaves April 30. He has been in charge of the medical supply depot in Manila, during the past year, and now has been ordered to similar duty in San Francisco.

FIFTEENTH INTERNATIONAL MEDICAL CONGRESS.

(From Our Special Correspondent.)

PROSTATIC HYPERTROPHY AND PROSTATECTOMY—URINARY CALCULI—THE TREATMENT OF NEURALGIA—TUBERCULOSIS IN LAUNDRESSES—CORTICAL LESIONS OF TOXIC ORIGIN—DIAGNOSTIC METHODS IN RENAL SURGERY.

LISBON, April 29, 1906.

TUFFIER of Paris presented a paper on the treatment of hypertrophy of the prostate. He divided this into three groups, preventive treatment, palliative treatment, and curative treatment. The first he said was the classical method of Guyon and embraced all procedures which tended to relieve congestion in the gland. Palliative treatment involved the use of the catheter. Catheterism should be employed only if it was easy and was well borne, and should always be desired from if threatening manifestations developed in the upper urinary passages, if the bladder could not be totally emptied, or if persistent hematuria or chronic cystitis appeared. In spite of all these contraindications catheterism remained the method of choice in the majority of cases. Curative treatment necessitated operative intervention. Freudenberg's operation had the same mortality as prostatectomy, and did not preclude the possibility of relapses. Partial extirpation of the gland was to be recommended only in those cases in which the organ was only partially hypertrophied. Rydigier's operation of resection and excochleation of parts of the lateral lobes did not obviate relapses, and the total removal of the gland was the only method of choice. Neither old age nor gravity of the patient's general condition contraindicated operative treatment, but diabetes and albuminuria were to be regarded as rendering operation inadvisable. The perineal operation was rather more difficult than the suprapubic one, was likely to be followed by impairment of the sexual function, and often gave rise to sinuses. The transvesical method was more rapid but was attended by higher mortality. In general it should be stated that operative treatment should be the exception and not the rule.

Albarran of Paris in discussing prostatectomy said that he always preferred the perineal route. If the operation were carefully planned and carried out injuries to the bladder and rectum could be avoided; it was true that in some rare instances sinuses persisted, but this was only in very stout patients and in cases in which the urine was highly infectious and the prostate was the seat of a chronic inflammation. It was just in these cases, however, that the suprapubic method was least indicated. The largest statistics were those of Freyr for the suprapubic route with a mortality of 8 per cent., and of Albarran for the perineal operation with a mortality of 2.4 per cent. Averaging the results of all surgeons, the suprapubic operation gave a mortality of 17 per cent., and the perineal operation one of 9 per cent. The speaker himself did the transvesical operation only on young, strong patients who were anxious to retain their potency.

Kallionsis of Athens in a long dissertation considered the etiology and the pathology of urinary calculus. Regarding climate, he said that its influence could not altogether be denied, particularly when frequent changes altered the solubility of the salts of the body. Drinking water undoubtedly had a double effect, as it could induce both frequency and rarity of stones; the latter not through any solvent action, however, but through their rare formation. The character of the food was said to be of effect, and heredity also appeared to have some influence. Age and

social condition as well as racial differences did not play a rôle of any importance. It could not be said, however, that any of these points were to be regarded as affording a satisfactory explanation of the formation of stones, and apparently a general disposition in this direction had to be assumed.

Bardenheuer of Cologne spoke on the treatment of neuralgia, which he considered was often due to a condition of venous congestion depending on various causes. Some of these were, alterations in the character of the blood, as in intoxications for example, changes in the vessel walls themselves, such as occurred in arteriosclerosis, or finally disturbances in the surrounding tissues, like the ascending congestion following an injury or inflammation, such as is observed for the trigeminal nerve in the case of affections of the teeth. Bardenheuer stated in confirmation of this view that in his operations he had always observed swelling and congestion of the blood-vessels of the nerve bundles, and that he had been able to secure immediate and permanent relief in sixteen cases of sciatica by exposing the nerve and freeing it from constriction by its sheath. The advantages of his method of operation consisted in the fact that if a relapse should occur, which was very rare, however, one could always resort to one of the more radical procedures.

Bernheim and Bienpart of Paris discussed the subject of tuberculosis in laundresses, and stated that the handling of dirty linen involved considerable danger for laundry employees. The authors had observed that a very considerable proportion of their tuberculous patients belonged to this class, and they urged the necessity for disinfection of the linen before it was turned over to the laundries. If it was considered advisable to disinfect dwellings and furniture, it was a great deal more so to free dirty linen from disease germs.

Battet and Laignet-Sarassine of Paris, in considering the cortical lesions of toxic origin, stated that as the result of their observations they had come to the following conclusions: It was possible by Nissl's method to recognize a diseased condition, but the procedure did not permit of conclusions regarding the nature of the underlying malady. While it was undoubtedly true that there was a definite theoretical relationship between certain intoxications and cellular lesions, it was practically still impossible to draw far-reaching conclusions owing to the imperfections of present technical methods. They had found that similar cellular lesions existed in the psychoses of toxic origin. Cortical cell lesions and disturbances of mentality were both manifestations of the same toxic affection, although their parallelism was not always very evident.

Kapsammer of Vienna read a paper on renal surgery, in which he said that the science owed its present stage of development to the invention of cystoscopic catheterism of the ureter through Brenner in 1887. Casper and Albarran had improved the technique to such a degree that it was now possible to attain the ideal of directly collecting the urine of each kidney. The endovesical separation of the two urines was a much less effective method, since the urine under the latter conditions came in contact with the mucous membrane of the bladder before being drawn off. Urine obtained in this way should be subjected to every possible means of investigation, since the physical and chemical examinations might simulate severe renal lesions without any such state being present, and the reverse was also possible. It had been found unsatisfactory to place reliance on urea determinations, and in order to make these of value it would be necessary to carry out an exact metabolism experiment on the patient, which was too troublesome and difficult for routine use. For practical purposes cryoscopy of the urine did not afford more reliable information than the specific gravity, and might even lead to serious errors, since, owing to the reflex polyuria induced by the ureteral catheterization, even normal kidneys might produce urine having a freezing point low enough to simulate a severe renal lesion. Kümmell was an ardent advocate of cryoscopy of the blood, although such observers as Israel, Tuffier, Barth, Kapsammer, Stoekmann, and Rovsing had not found it a reliable method. With the exception of Kümmell all surgeons had discarded cryoscopy in renal diagnosis. The methylene blue test under some conditions made it possible to appreciate marked differences, but it could not be recommended for ordinary use, as we were ignorant of the mechanism of excretion of this substance and its derivatives. A preferable procedure was the indigo carmine test, though this had not yet been sufficiently developed. The determination of the length of time that elapsed before the appearance of sugar in the urine after phloridzin injections had been found the most valuable means of diagnosis. Normally the sugar appeared ten to fifteen minutes after the subcutaneous injection of 0.01 of phloridzin, but the greater the anatomical and functional damage to the kidney the later was the appearance of the sugar in the urine. If no sugar were present in the mixed urine forty-five minutes after the injection, both kidneys were so severely damaged as to contraindicate nephrectomy.

Kümmell of Hamburg stated that cryoscopy of the urine and the determination of urea was of value if the two results were always compared and cryoscopy of the blood were also carried out. The use of these methods in over 1,000 cases during the past six years had never proved misleading. The discrepancies in the results of other observers were to be ascribed to the differences in technique. The author believed that if the blood freezing point reached 0.6 every operative procedure on the kidney was contraindicated, assuming that the cryoscopy had been properly performed. In five cases in which nephrectomy had been performed in defiance of this rule death followed immediately.

Progress of Medical Science.

New York Medical Journal, June 9, 1906.

Adominal Hysterectomy for Uterine Fibroid Complicated with Pregnancy and Prolonged Retention of a Fetus and Placenta.—The patient of H. T. Williams was a woman of thirty-one years in whom a diagnosis of pregnancy and fibroid was made. Menstruation was absent for the first three months of the period, but flowing came on regularly thereafter and was quite profuse. She finally consented to an operation, which was done about one year from the date to which the supposed pregnancy had been referred. The Dudley method of uterine removal was followed, one-half inch of the cervix being left, the operator uniting the stump flaps in an anteroposterior direction, closing the peritoneum over it, and uniting the cut ends of the broad ligaments in the same anteroposterior direction by end-to-end approximation, thus making the ligatures and sutures all extraperitoneal. She made an uneventful recovery, the incision healing by first intention, and left the hospital for her home three weeks after the operation. Upon opening the uterus after its removal, a fetus and placenta, evidently of three months' development, was found in the left side of the uterine cavity; they were in a good state of preservation and there was no odor; the uterine cavity below them had been shut off by the encroachment of the fibroid, and the same pressure had probably caused the death of the fetus.

Exfoliative Dermatitis in the Newborn.—A case of this rare affection (Ritter's disease) is reported by B. M. Baker. As far as he can learn, only seven similar cases have been reported in this country. He gives a general description of the malady based on the literature of the subject, noting that it comes on generally between the second and fifth week of life, and that there has been a mortality of about 50 per cent. Ideas are vague as to etiology and pathology. Ritter himself suggested a pyemic infection, while later writers have referred it to a parasite as yet undiscovered. Baker's own case was a male child, weighing at birth eleven pounds and well developed. There was a fungoid base left where the umbilical stump came away, but this healed up without incident. On the nineteenth day of life the child became fretful, face swelled and was reddened; later the erythema involved the body; temperature was normal and the face began to crack, wrinkle, and exfoliate. On the extremities were a few large irregular bullæ containing seropus, which dried up and exfoliated. The erythema referred to finally affected the entire skin, which in turn exfoliated. In about a week the skin had cleaned off. Treatment consisted in the free use of bland soap and local use of a weak carbonized sweet oil. Forced feeding and a little alcoholic stimulation were needed for a little time. Gonococcus infection was excluded, but no further bacteriological examination was made, nor was there a search for the mycelia—supposed by some to be the cause of the affection.

Abuse of Ether in Abdominal Surgery.—J. W. Kennedy describes the methods followed in administering ether in the hospital of Joseph Price of Philadelphia. Nurses and attendants are forbidden to discuss the subject with the patient. The etherizer gives a few reassuring suggestions as he begins his work. A gauze towel one yard square, folded to make a pad nine inches square, is used for the ether, which is fed, as it were, to the patient by the drop method Care is taken not to crowd it before the special senses are benumbed. It is the rule to place the gauze (tent-shape) over the patient's face, the thumb and index finger controlling the gauze, the remainder of the hand splinting the lower jaw to the upper. Allow your patient to take a few breaths before any ether is put on the gauze. Kennedy believes this a better plan than to start with ether on gauze, held some distance from the face. These are small but important factors in a peaceful etherization. Do not, he says, interpose gauze between the

patient's chin and the hand that is supporting the jaw. The gauze may become saturated and give the patient an ugly burn. Begin the anesthetic by putting one drop on gauze and give the ether continuously, increasing progressively. The patient can take more ether the second minute than he can the first, so why not feed it to him as he breathes? In the last two thousand administrations in the hospital named, the average amount of ether used has been about four and a half ounces; time for inducing surgical anesthesia has varied from four to six minutes. The preceding use of the lighter anesthetics is condemned, as is also the change of anesthetizer during a given operation. The Trendelenburg position is never employed. In an operation of ordinary length, from two-thirds to three-fourths of the amount of ether given will be taken before the patient reaches the surgical anesthetic, very little being required after this stage. If at the outset the patient seems unable to take a deep breath, one or two breaths of fresh air are given.

Journal of the American Medical Association, June 16, 1906.

The Assault on Tropical Diseases.—L. F. Barker notes the increasing interest in tropical medicine at the present time, as shown by the establishment of institutions for the special study of diseases peculiar to the tropics and of expeditions and commissions for the study of special disorders. In England there are two institutions for this purpose, and similar establishments exist in Germany and France. This country has thus far established but one laboratory for this study, that at Manila. Nevertheless American physicians have contributed very important additions to the knowledge of the subject. Among the special diseases mentioned as subjects of study at the present time are bubonic plague, dengue, yellow fever, Malta fever, malaria, beriberi, uncinariasis, and sleeping sickness. The records of the last few years show that in this country we are alive to the importance of this line of research, but still more is called for.

Bennett's Fracture.—R. Russ calls attention to this fracture, which he believes to be the most common as well as the most important one of the metacarpal bones. It consists, as Bennett has pointed out, in an oblique fracture of the base of the first metacarpal bone in which the palmar half or more of the surface articulating with the trapezium is detached and the shaft of the bone slips upward and backward past this detached fragment simulating a backward dislocation of the thumb. Russ reports eight cases, all observed during the past year, and mostly in the surgical dispensary of the University of California. With this increase of these cases there has been a marked decrease of the diagnoses of thumb sprains and metacarpo-trapezial subluxations. The diagnosis is sometimes very difficult, hence the general impression that this fracture is rare. The first attention may be called to it by a radiogram. Russ discusses the mechanism and reports his cases in detail. In all cases the fracture resulted from a considerable force, usually applied on the distal end of the metacarpal bone, though in one case it was due to injury inflicted on the palmar surface. The diagnosis between this fracture and backward subluxation is important, and Bennett has claimed that a permanent partial displacement is impossible. Russ shows, however, by a case here reported, which illustrates the differential diagnosis, that it does occur. In obscure cases the *x*-ray must be resorted to, but he thinks that, ordinarily, the diagnosis can be made if care and pains are taken.

Vitreous Opacities in Young Girls.—C. J. Kipp quotes Hirschberg's reference in regard to certain enigmatical white tissue formations in the lower anterior portion of the vitreous body in girls and young women. Two cases are reported in which only one eye was affected, and Kipp remarks that such cases are probably not uncommon and have doubtless been observed by most ophthalmologists. He reports a third case, however, in which the condition, coming on during good health, was extensive in both eyes, causing practical blindness for a time. The opacities, however, gradually disappeared and vision was restored, though latterly cataractous symptoms have intervened in from 20 to 25 years after the first condition was observed. Kipp thinks that there were probably hemorrhagic effusions in the vitreous from the ciliary body antedating the opacities. The condition in this case so closely resembled retinal detachment as to deceive an experienced specialist. The participation of the choroid in the morbid process was shown by the appearance of an atrophic spot.

Pretuberculous Conditions.—R. R. Shurly believes that the pretuberculous stage of phthisis, as we now classify it, is in the vast majority of cases only a latent unrecognized tuberculosis and that the development of the *Bacillus tuberculosis* is in many a problem of cell nutrition, the biochemical phenomena of which are not understood. Sharp lines of demarkation between the pretuberculous and incipient stages cannot be drawn. Among the leading symptoms of the former he lays stress on a progressive loss of weight accompanied with general malaise and sometimes also acceleration of pulse. When these symptoms are present, without other definite signs, and acute and chronic diseases can be excluded, a true latent tuberculosis exists. Chest measurements and vital capacity should then be carefully tested and the conditions of lymphatism and digestive disturbances which may exist, be looked for. He specially calls attention to the relation of the chloroanemias to the development of phthisis. The constant association of anemic blood change with imperfect chest development and progressive loss of weight is very noticeable, the hemoglobin is diminished out of all proportion to the loss of red cells. A recognition of this sign as frequently only the initial evidence of a slumbering tuberculosis would prompt the recourse to the hygienic and medicinal measures that would produce a complete recovery. Shurly recommends in these cases the hypodermic administration of iron and arsenic, the former in the form of the green ammoniated citrate in doses of from .05 to 1 gram and of arsenate of sodium, .001 to .002 gram. The good effects are quickly manifested and an increase of 5 to 10 per cent. hemoglobin a week can be expected. He likewise calls attention to two prominent characteristics of the pulse in the pretuberculous stage; the slight variation on change of position noted by Wells and Loomis, and the relative feebleness of arterial pressure.

The Lancet, June 2, 1906.

Primary Malignant Disease of the Vermiform Appendix.—H. D. Rolleston and L. Jones have been able to collect records of sixty-two supposed examples of this localization, including one hitherto unpublished, and their paper, which closes with a complete bibliography, is an analysis of these records. For various reasons they exclude twenty cases as not conclusive. Of the remaining forty-two, thirty-seven were diagnosticated as carcinoma, three as endothelioma, and two as sarcoma. The age limits were twelve and eighty-one years. In only five of the forty-two were secondary growths recorded. In thirty-three, in which exact situation is given, nearly one-half were localized in the distal third of the appendix. The authors find it impossible to build up a clinical syndrome, and, in fact, as far as they can learn, a correct diagnosis has never been made before operating. Symptoms were variously referred to the female pelvic viscera, fistula following iliac abscess and acute appendical attacks. Of the latter (twenty-seven) symptoms of the first acute attack accounted for ten cases; chronic symptoms with an acute attack, three cases; recurrent attacks, nine cases, and chronic appendicitis, five cases. The growth, it appears, may be either the cause or the effect of the changes producing the symptoms, and may give rise to the symptoms of appendicitis; it is probably the cause in those cases with an apparently acute onset, or in which the symptoms, having been chronic, the growth is the main feature of the appendix. It is probably the outcome of chronic irritation in those cases of obliterating appendicitis in which the growth is recognized by the microscope only. The extent of the operation called for rarely exceeded the simple removal of the appendix. The results of operation were surprisingly good. There were four deaths within two weeks of operation. Of twenty-nine patients who recovered, one died four months later after operation to relieve obstruction caused by a band in the right iliac fossa, but there was no recurrence of malignancy. None of the others presented any suggestion of recurrence.

The X-Ray Diagnosis of Kidney Stones.—C. T. Holland refers to his previous paper on this topic published some two and a half years ago, and makes some observations suggested by his experience since that time. His present views are summarized in the following propositions: (1) When a stone or stones are present in such size as to produce symptoms suggesting the desirability of operation, if a careful and thorough examination is made such stone or stones can nearly always be shown by *x*-rays. And this would also apply to the presence of stone even if the symptoms alone were not sufficient to demand operation. (2) In most cases where shadows are shown the size, shape, and position can be relied upon in diagnosing them as from kidney or ureteral stones. In other cases when doubt may arise as to the cause of the shadows, the experience of the examiner will often settle the matter, and in some cases stereoscopic radiography, the use of ureteral bougies, etc., can be used as a help. (3) The negative diagnosis can be relied upon only when the whole region on both sides is carefully examined and when the plates are taken under the essential condition for successful examination and when they are of the necessary quality in showing sufficient differentiation of the soft structures in the kidney and ureteral regions. (4) There can be no

justification for operation or prolonged medical treatment without an efficient *x*-ray examination being made.

British Medical Journal, June 2, 1906.

The Pathology of the Thyroid Gland.—Kocher makes the following classifications: (1) Vascular goiter. (2) Colloid changes. (3) Typical Graves' disease. He declares that the latter means a thyrotoxic affection in opposition to cachexia thyreopriva. He considers the question whether the functional disorder consists in a perverse activity of the gland in the sense of dysthyrosis or in a simple exaggeration of the normal function—hyperthyrosis—as still open to discussion. From examination of specimens of true Graves' thyroid and the colloidal form, Kocher inclines to the view that the histological changes noted in the former justify us in thinking of an increased or altered activity of its parenchyma and secreting cells. A second evidence in favor of the increased activity of the gland is the constant swelling of the lymphatic glands in the neighborhood of the thyroid in severe Graves' casse, and the changes which may be traced in the composition of its blood. Lymphocytes increase up to even 60 per cent. of the white cells, though as a rule the proportion is from 30 to 40 per cent. Among the lymphocytes are found many atypical forms with large nuclei and greater quantity of protoplasm. Moreover, there is a lessened iodine content in the Graves' thyroid. Hence arise the good results from ligation of the arteries going to the thyroid whereby its activity is diminished. There is a parallelism between the degree of diminution of marked symptoms and the amount of thyroid tissue deprived of its blood supply and removed, and this parallelism seems to prove that the abnormally increased activity of the gland throws some poisonous substance into the circulation; but the question still remains open whether it is exclusively the excess of the normal secretion which exerts that poisonous influence on the nervous, and especially the sympathetic, system, or whether it is that some abnormality of the secretion plays a certain part. In favor of the theory of pure hyperthyrosis it may be added that the administration of extracts of the normal gland gives rise to the same symptoms as Basedowian goiter. In regard to the value of operation, we are conditioned by the fact that undoubtedly the first change is in the nervous system in many cases; in others the disease dates from an acute infection. Prolonged or sudden nervous exhaustion is frequently the cause of the appearance of the first symptoms, and it is probable that a suddenly increased metabolism in the nervous tissue brings toxic substances through the circulation to the thyroid gland, and gives rise to irritation and reaction, causing increased activity of the parenchyma. This influence must never be forgotten, and has its share in affording indications for treatment. We must in these particular cases do everything to diminish influences tending to exhaust the nervous system, and, above all, keep the patient perfectly quiet in every way for a long time. At the same time we may try to compensate the loss of phosphates accompanying nervous disorders by the administration of phosphates, one of the best treatments for Basedow's disease. In addition, a well-chosen diet and good food are necessary. On the other hand, it is important not to delay the operation so long that it becomes a danger to life. Kocher has lost only three patients out of his last 1,000 operated on for ordinary goiter (excluding malignancy), but has lost nine out of 175 operated on for Graves' disease. It is important not to wait until organic changes have been set up in the cardiac muscle.

The Dystrophy of Tabes and the Problem of Trophic Nerves.—W. R. Gowers declares that progressive research has afforded no direct evidence of the existence of special trophic nerves and centers. The theory still lingers, but is not supported by conclusive evidence. He describes the changes occurring in the typical knee, ankle, and tarsal affections of tabes. If we scrutinize the conditions under which these local dystrophies occur, we shall find, says the author, that there is always some impairment of the nerves of ordinary function, the nerves of motion and sensation. In muscular athropy the motor nerves have suffered. In tabes we usually have clear evidence of an affection of the sensory nerves on the defective perception of pain in the skin; the slightness of pain in the affected joints shows always that the deeper nerves have also suffered. Similar lessons are taught by the corneal changes. Thus the only certain element in tabes which we can associate with its dystrophy is the altered state of nutrition of the sensory nerves. The only mechanism for the perverted nutrition we can conceive which harmonizes with other known facts is that this determines an alteration in the processes of nutrition, disturbing that which is primarily due to the vitality of the tissues themselves. It induces a derangement which, once set up, continues and increases. In all cases of tabes there is reason to believe there are such changes in the deeper nerves, and it is very rare to meet with a case of pronounced arthropathy in which they are not evident in the cutaneous nerves. The results of these sensory disturbances may seem to us to be very surprising. So also the effect of slight traumatic influences, in affording the opportunity for derangement of nutrition, may also be variable, and the peculiar distribution of the arthropathy is strong evidence of the frequency of such an excitant, even when unnoted. A local cause is suggested by the fact that usually only one joint is affected, and seldom more than two. It is also possible that rarely a true rheumatic affection may be the excitant. An inflammatory process, however excited, may be, as it were, misguided by the influence of the impaired nutrition of the nerves. Once excited and thus perverted, it progresses, in morbid form, growing more and more until the results seem surprisingly great. One reason why these cases progress to the extent we find is the fact that the absence of pain does not call attention to the lesion. Gowers believes that tabetic arthropathy would often be arrested if wisely dealt with in its early stages. He believes that most cases begin as a slight acute process whether due to a traumatic influence or not, and much may be done to promote its subsidence by rest and the measures suited to any acute arthritis; but these measures are scarcely ever adopted or thought of. The malady is painless, and scarcely attracts even the patient's notice until enlargement becomes obtrusive. Then, too often tissue changes are established which have a tendency not only to persist but to spread. If considerable effusion is the chief element, it may need aspiration followed by elastic compression, which, even alone, has often a great influence on such cases. The conditions which would not prevent the recovery of a joint with normal nerves may be persistently harmful to one that is inflamed, however slightly, in a subject of tabes. The absence of pain permits the perpetuation of harm, and is to us a grave misfortune. With pain to emphasize our advice we can often secure rest when it is needed; without it, we too often fail. It is seldom recognized how good a friend pain may be to those who suffer it.

Berliner klinische Wochenschrift, May 28, 1906.

Pyuria Through Leucocytosis.—Talma says that it is possible for pyemia to exist as a true infection of the blood without any demonstrable portal of entry of the invading organisms, in other words, as what is commonly called a cryptogenetic pyemia. He states that there is nothing remarkable about the conception of such cryptogenetic infections, for pneumococci, for example, may be found transported by the blood stream to almost any part of the body without the development of pneumonia, and streptococci may give rise to septicemia without localized suppuration. He describes two cases of pyuria in which he considers that the kidneys served as excretory organs for the pus present in the blood without themselves being the seat of an actual suppurative inflammation. Examination of the urine in these cases showed that not only pus cells but also pus serum had passed through the kidneys. In the one case examination of the blood showed 43,000 leucocytes with 94.4 per cent. of polynuclears, and in the other there were 17,000 leucocytes with 79 per cent. of polynuclears.

The Demonstration of the Precipitin of Cow's Milk in the Blood of Marantic Children.—Bauer states that ordinarily the precipitins of milk are destroyed through the activity of the gastric and intestinal ferments, and that in this way the transmission of unchanged foreign albumin into the circulation and organs is prevented. Only if the foreign albumin is administered in excess can it be demonstrated in the body of the overfed animal, the fermentative powers evidently not being quantitatively adequate for the task. It therefore seems possible that in gastrointestinal diseases the impairment of the digestive powers might permit albumin to pass into the blood, and this condition might be conceived as being present in cases of infantile marasmus. Attempts to demonstrate the precipitin of cow's milk in the blood of infants are unsatisfactory owing to the technical difficulties involved, and the author resorted to Moreschi's method of deviation of the complement in order to carry out the reaction. In this way he was able in a child dying of marasmus to show the presence of cow's milk precipitin in the blood, and he suggests that the clinical manifestations of the condition may depend on the toxic effect of this foreign albumin circulating in the blood.

Münchener medizinische Wochenschrift, May 29, 1906.

The Cultivation of the Typhoid Bacilli from the Blood.—Fernet recommends the following procedure, by means of which he says that typhoid bacilli may be detected in small quantities of blood early in the disease and at a time when cultures from the stools and the Widal reaction are still negative. The procedure is based on the

enriching properties of bile as a culture medium, and it is carried out as follows: Ox bile, which may be readily obtained in any slaughter house, is placed in test tubes of which each receives about 5 c.c. of the fluid. The tubes are plugged with cotton and are sterilized for one half hour in the steam sterilizer or in boiling water. The tubes are then kept cool and used as required. The blood clot resulting from the coagulation of specimens submitted for the Widal reaction is added to one of the bile tubes and is allowed to stand overnight in the incubator. In making the plates care is taken to secure the upper layers of the fluid in the tube which are removed with a loop, about 0.5 c.c. in all being used, and the material is spread on the surface of a large Drigalski-Conradi plate by means of a glass spatula in the usual way. While this method is not intended to replace the other procedures, it is of use when it is impossible to collect the blood directly in the bile tubes, or when only very small quantities of blood are available, as 0.25 c.c. can be used with satisfactory results.

A Case of Cesarean Section for Intestinal Obstruction.—Martin describes this case, which was that of a woman of thirty-four years who had had a laparotomy done five years previously for the removal of a large fibroid tumor of the uterus. She had suffered from persistent constipation, vomiting, and abdominal colic during two subsequent pregnancies, which had terminated in the seventh and eighth months respectively. When she was seen by the author she was about at full term, and presented symptoms pointing toward intestinal obstruction from adhesions and peritonitis. On opening the abdomen a considerable amount of yellow fluid was evacuated and it was seen that the small intestine was adherent to the posterior surface of the uterus over a considerable area, the loop of gut being also twisted about its axis, 180 degrees, and its mesentery being tightly stretched so as to serve as an additional constricting band. On liberating the sharply angulated loop of intestine the uterine wound thus made bled freely so that on this account, as well as owing to the fact that the patient's poor condition made a prompt termination of the pregnancy seem desirable, cesarean section was performed in the usual way. The abdomen was closed without drainage, and mother and child made a good recovery. The author ascribes the symptoms noted during the former pregnancies to the same cause.

The History of Spinal Anesthesia.—Bier considers Corning's claims to priority in the matter of spinal anesthesia and endeavors to show that although the American author had described the injection of cocaine solution into the spinal canal years before Bier himself had issued his first publication on the subject, Corning should not be regarded as the originator of the method since he himself had not realized the significance or the possibilities of the procedure and did not induce surgeons to take it up as a practical method. Bier accordingly criticises those American and Continental authors who acknowledge Corning as the originator of spinal anesthesia, and quotes a number of European authorities who give Bier the credit for having placed the procedure on a practical basis.

Deutsche medizinische Wochenschrift, May 31, 1906.

The Value of Sahli's Desmoid Reaction.—Alexander and Schlesinger describe the results obtained in making a study of the value of Sahli's desmoid reaction. This consists in giving the patient small rubber bags tied up with catgut and containing methylene blue, iodoform, or some other substance whose absorption can be readily demonstrated in the excretions. According to Sahli raw catgut can be digested only in the stomach and only in the presence of free hydrochloric acid. The authors describe the results of forty-eight observations which lead them to the conclusion that the Sahli method is thoroughly unreliable and cannot, as Sahli claimed for it, be regarded as a satisfactory substitute for the use of the stomach tube in cases in which the introduction of the instrument is for some reason contraindicated. Not only were great irregularities and inconsistencies shown in the appearance of the test reagents, both in normal and abnormal stomachs, but experiments on patients with gastric fistulæ showed that contrary to Sahli's statement catgut was digested in the stomach in the absence of free hydrochloric acid, so that the underlying principle of the method appears to be fallacious.

A Case of Extrauterine Pregnancy Operated on at Full Term.—Seelgmann says that although cases of extrauterine pregnancy that have gone on to quite or nearly the full term of gestation present what are perhaps the greatest operative difficulties on gynecological surgery, so that many authors recommend an expectant plan of treatment in the hope that the fetus may become transformed into a lithopedion, he considers that operation as soon as the diagnosis is made is the preferable course of procedure. The statistics collected by Schauta show that out of 241 cases of this sort lithopedion formation without symptoms took place only nine times. It is the management of the placental site and the hemorrhage from it that causes the difficulties in such cases, and these may tax the resources of the surgeon to the utmost. In the case that he operated on himself the placenta was situated on the lower surface of the liver, gall-bladder, and parietal peritoneum of the right hypocrondrium. On attempting to remove it the hemorrhage was so severe as to necessitate immediate packing of the entire amniotic cavity. The placenta was removed in portions at several subsequent operations, the large wound cavity being drained in the meanwhile. Six weeks after the operation the patient was discharged cured.

Is the Injection Treatment of Acute Gonorrhea Rational?—Canon of Berlin has come to the conclusion that the injection treatment of gonorrhea as ordinarily practised frequently causes damage, is not well advised, and can be dispensed with. The passage of gonococci from the urethra into the blood stream is facilitated by the application of caustic or irritating substances to the urethra, while antiseptics have but little power over organisms concealed in the lower epithelial layers. The author considers that under proper management the general powers of resistance are adequate to combat the infection without the use of local applications during the acute stage. The administration of suitable remedies intended to be excreted through the kidneys is advisable, as is also the often neglected admonition to the patient to take large quantities of fluid in order that the urethra may be flushed as thoroughly as possible.

French and Italian Journals.

Origin of Mucus Found in the Feces in the Course of Enteritis.—Jean-Ch. Roux and A. Riva have recently investigated this question. Many authorities have thought that the mucus found in the feces originates almost exclusively in the large intestine. The mucus from the small intestine rapidly separates, appearing in the feces only if the evacuation from the intestine is extremely rapid. In such a case it will appear under the form of very small fragments of hyaline mucus, colored by bile. Roux and Riva, in order to clear up this question, undertook a series of experiments. They provoked an enteritis in the small intestine of the dog, and then established a jejunal fistula. They injected a solution of silver nitrate, which was left in contact with the mucosa for several minutes. The silver nitrate was then precipitated by a weak solution of sodium chloride. On the day following they always observed in the feces, which were loose, many small fragments of hyaline mucus which was in the form of flakes. This mucus was not colored by bile. At the end of forty-eight hours the feces, having become normal, contained no trace of mucus. These experiments prove that in the course of enteritis there may exist in the feces hyaline mucus which comes from the small intestine and which does not differ from the mucus in the colon.—*Le Bulletin Médical*, April 21, 1906.

The Advantages of Mixed Narcosis.—O. Dauwe declares that either ether or chloroform in producing anesthesia gives rise to a disturbance of the general condition, a veritable poisoning of the organism. Statistics testify to a certain number of deaths due to the action of both of these anesthetics. Careful experiment, as well as clinical experience, teaches that the mixture of these two anesthetics is more advantageous than either one by itself. The small drop-bottle should be used for administering this mixture, which seems to be best made by adding one part of chloroform to nine parts of ether. By the use of the mixture of these anesthetics the period of excitation is reduced, the frequency of syncope is diminished, and postoperative malaise is decreased.—*Gazette des Hôpitaux Civils et Militaires*, April 26, 1906.

Epidural Injections.—Buzi Emilio recommends the use of the epidural injections of Cathelin in various painful affections, especially in sciatica. He has treated eight cases in all, most of them affected by sciatica, and all these cases have had an undoubted cure, even in well-established conditions. The injection is made into the epidural space, between the dura mater of the cauda equina and the periostium. This space reaches above to the occipital foramen, and at its deepest portion is in contact with the sacral canal, and is filled with cellular tissue. The liquid does not penetrate the subdural and subarachnoid spaces, and hence any poisonous effects from the drugs used is avoided. The author used as injection fluid of 1 per cent. solution of cocaine, or normal salt solution. He does not believe that the cure results from the anesthetic effect of the cocaine, because pain did not cease immediately, but after several days. He used it with some success in incontinence of urine, where he ascribes the effect to shock from the mechanical effect on the cauda equina.—*Il Policlinico*, April, 1906.

Book Reviews.

Uric Acid. The Chemistry, Physiology, and Pathology of Uric Acid and the Physiologically Important Purin Bodies. With a Discussion of Metabolism in Gout. By Francis H. McCrudden. Boston: The Fort Hill Press.

The increasing complexity revealed by each advance in the domain of the chemistry of metabolism has made it highly desirable that some plain-spoken iconoclast should clarify our conceptions of certain problems by setting forth clearly just how much we really do know and how much is pure theory. The author of this monograph has performed this task in masterly fashion for the question of uric acid, and his clear exposition of the facts as already ascertained should make his work of value to subsequent investigators by enabling them to take a fresh point of departure and proceed with their studies unhampered by the mass of useless lumber which has accumulated in the literature of the subject. The practitioner will doubtless be dismayed by the destructive character of the book, and it will be painful to him to find many cherished notions such as the existence of a quadriurate in gouty blood, Haig's plausible theories, the value of alkaline therapy in gout, the view that uric acid is a precursor of urea in the breaking down of proteid, etc., thrown bodily out of doors. It is also disappointing to find that in spite of the enormous amount of labor that has been expended on the study of gout, the author's own researches as well as his sifting of the voluminous literature lead only to the admission that, although we know that in gout there is uric acid in solution in the blood and that there are urate concretions in the joints, we do not know which of these conditions is cause and which is effect, and we are not even sure that they are related in this way at all. The available data are still inadequate to explain either the cause of gout, the etiology of the acute attack, or the formation of the concretions. To disprove old errors is perhaps even more valuable than to present new facts, and a perusal of this important work cannot be too warmly urged on all interested in the subject.

On Professional Education, with Special Reference to Medicine. An Address Delivered at King's College, London, on October 3, 1905. By T. Clifford Allbutt, M.A., M.D., F.R.S., Hon. D.Sc. Oxon., etc., etc.; Regius Professor of Physics in the University of Cambridge. London and New York: The Macmillan Company, 1906.

Anything from the pen of Professor Allbutt is sure to be not only worth reading, but also entertaining reading. The present address is no exception, and it should be carefully studied by all interested in the subject of medical education. Among the more important of the topics discussed are: Education and instruction, specialization, maintenance of standards, university education, the medical curriculum, graduate work, examinations, research, clinical instruction, the outlook of modern science, and education and ethics. The Regius Professor at Cambridge has his own views on many of the questions of the day; and he has the following to say on a subject that was quite lately exploited by the now Regius Professor at Oxford from the opposite viewpoint: "I opine that no teacher reaches his best till middle life. Not till then does he gather the fruits of experience, or attain to a rich and vital sense of our ignorance; not till then does he wholly escape from formula and routine; not till then does he learn what to leave unsaid; then it is that erudition and experience mellow into wisdom." The above eminently sane and seasonable statement will give our readers a fair idea of the style of this interesting book.

Gynæcological Diagnosis; a Manual for Students and Practitioners. By Arthur E. Giles, M.D., B.Sc., Lond.; F.R.C.S., Ed.; M.R.C.P., Lond.; Gynæcologist to the Tottenham Hospital; Surgeon to the Outpatients, Chelsea Hospital for Women. With Thirty-five Original Illustrations. New York: William Wood and Company, 1906.

The plan of the present work is to start from the various symptoms as they are given by the patient, and to pass on systematically from these symptoms through physical signs to a diagnosis. In the first part are discussed general considerations, such as case-taking, methods of examination, the use of instruments for examination, the significance of symptoms, and the interpretation of physical signs. The second part takes up in turn each of the symptoms, and shows by methods of grouping and of exclusion how a diagnosis may be reached. The author recognizes the fact that a positive diagnosis is often difficult and sometimes impossible, and also that it is only the young and inexperienced who can invariably make a positive and dogmatic diagnosis. There is a separate chapter on each of the following symptoms: Amenorrhea, pain, hemorrhage, discharge, pruritus, dyspareunia, sterility, repeated abortions, bearing down, bowel and bladder disturbances, swelling of the abdomen or of the vulva. At the end of each chapter is a tabular summary of its contents. The book is written by a master of his subject, hence it is authoritative; at the same time it is practical and useful. The general practitioner will find this little volume a capital investment; from a monetary standpoint alone each chapter will be worth more than the price of the book, and the educational value far exceeds that of many larger and more pretentious volumes.

Case Teaching in Medicine. A Series of Graduated Exercises in the Differential Diagnosis, Prognosis, and Treatment of Actual Cases of Disease. By Richard C. Cabot, A.B., M.D., Instructor in Medicine in the Harvard Medical School, and Physician to the Outpatients at the Massachusetts General Hospital. Boston: D. C. Heath & Co., 1906.

In this volume the author presents a very ingenious and serviceable suggestion for facilitating instruction in medicine, together with the means for carrying it into effect. The book consists of a series of seventy-eight case histories, with a concise account of the physical signs present, in a very extensive variety of diseases. Appended to each of these are a few paragraphs which are suggestive rather than didactic, and are intended to point out the manner in which the teacher may profitably use the case in question as a text for discussion. Finally, the diagnosis, treatment, and ultimate outcome of the case are given. The method suggested for the use of the book is to have the instructor read the case history to his class, each member of which must then write on a slip of paper his diagnosis. The case is then discussed, possibilities and probabilities are suggested by the teacher, and finally the correct diagnosis is announced. The plan is one that has a great deal to commend it, and instruction along some such method should be very valuable in impressing on students that the ability correctly to elicit a few physical signs is not diagnosis, but that the latter is a process of pure reasoning, a lesson that is usually not learned until late in the undergraduate course. The cases described here are all interesting paradigms, some of them of rare diseases, but for the most part representing conditions that are constantly being encountered in actual work. Both the book and the pedagogic method on which it is based may be most warmly commended to all instructors in medicine, while even the practitioner may find it stimulating to see how many of these clinical problems he can solve without looking at the "answer."

Diseases of the Eye. A Handbook of Ophthalmic Practice. By G. E. de Schweinitz, M.D., Professor of Ophthalmology in the University of Pennsylvania. Fifth Edition, Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1906.

The fifth edition of de Schweinitz's work is presented in a volume of 894 pages. The style is similar to that of the previous editions. In this edition paragraphs on the following subjects appear for the first time: "Solid Edema of the Eyelids," "Noma of the Eyelids," Blastomychosis of the Eyelids," "Herpes Facialis of the Eyelids," "X-Ray Treatment of Epithelioma," "Xeroderma Pigmentosum," "Influenza Bacillus Conjunctivitis," Catarrhal Epidemic Conjunctivitis," "Purulent Conjunctivitis in Young Girls," "Non-specific Purulent Conjunctivitis," "Jequiritol and Jequirirol Serum," "X-Ray Treatment of Trachoma," "Conjunctivitis Nodosa," "Serum Treatment of Infected Corneal Ulcers," "Infected Marginal Ulcer (Zur Nedden)," "Keratitis Marginalis Superficialis (Fuchs)," "Keratitis Punctata Syphilitica (Mauthner)," Peripheral Annular Infiltration of the Cornea," "Annular Scleritis," "Uveitis and Its Varieties," "Circumscribed Plastic Choroiditis," "Fatigue Contractions of the Visual Field," "Eye-ground Lesions of Hereditary Syphilis," "Macular Atrophy of the Retina," "Congenital Color-blindness," "Congenital Word-blindness," "Methyl-alcohol Blindness," "Training of the Fusion-sense with Worth's Amblyoscope," "Stovain, Alypin," "Motais's Operation for Ptosis," "Kuhnt-Müller's Operation for Ectropion." The volume is fully illustrated, 33 cuts in the text having been added in this edition. De Schweinitz's "Diseases of the Eye" is so well and so favorably known that little need be said regarding it. It is a standard work, valuable alike to student, general practitioner, and ophthalmologist. The admirable index enables one to find just what is wanted without loss of time, and the information supplied is reliable and up to date.

The International Medical Annual for 1906; a Year Book of Treatment and Practitioner's Index. By Various Contributors. Twenty-fourth year. New York: E. B. Treat & Co., 1906.

This annual makes an attractive volume of handy size. Among the features that have most appealed to us are, the general dictionary arrangement, the complete index, and the references to the literature of the topics under discussion; all of which add to the value of a book of this sort. The subject matter is well and concisely presented, and the illustrations and general make-up of the book are good.

Society Reports.

ASSOCIATION OF AMERICAN PHYSICIANS.

Annual Meeting Held in Washington, May 15 and 16, 1906.

(Special Report to the MEDICAL RECORD.)

DR. FRANK BILLINGS OF CHICAGO IN THE CHAIR.

(*Continued from page 899.*)

Some Dangers of Thoracentesis with Special Reference to Pneumothorax.—Dr. GEORGE G. SEARS of Boston considered the danger of sudden death to reside in two causes, viz., exploratory puncture and pneumothorax, and related some cases in support of this.

Dr. HENRY KOPLIK of New York said that in children air was not well absorbed and in cases of pneumothorax he advocated opening the chest as soon as possible and evacuating the contents.

Dr. E. G. JANEWAY of New York said that this danger of pneumothorax following paracentesis was more common than generally supposed.

Dr. T. B. FUTCHER of Baltimore said that pneumothorax should be recognized as one of the dangers attending aspiration of the chest. He said that Emerson had reported 49 cases in Osler's wards and in 11 this condition was due to paracentesis for exploration of chest.

Dr. SHATTUCK of Boston reported a case of pneumothorax caused by the aspirating pump working the wrong way.

Dr. S. J. MELTZER said that in those cases of sudden death one had to deal in many cases with an air embolus. He said that air was always easily absorbed from the pleural cavity.

Therapeutic Principles Based upon Pathological Physiology.—Dr. RICHARD C. CABOT of Boston said that pathological physiology was the effort of nature to react against the cause of disease, such as leucocytosis, fever, hyperemia. The treatment based upon pathological physiology had three aims, as follows: *a.* Examples of treatment aiming to imitate or supplement pathological physiology—(1) Antitoxic or antibacterial sera, (2) removal of gangrenous appendix, (3) removal of hidden sorrow (Freund's psychoanalysis), (4) bed (only asthenic conditions), (5) diet in fevers, (6) washing products of stasis out of stomach, (7) purgation in acute fermentative diarrhea, (8) setting of a broken bone, (9) passive hyperemia (Bier's method), (10) active and passive exercise. *b.* Exology—(1) Forced feeding in Graves' disease and in phthisis, (2) restraining a dangerous delirious patient, (3) the use of enemata and laxatives, (4) massage and passive motion for adhesions and contractions, (5) counterirritation, (6) massage after a sprain, (7) exercise and diet in obesity, (8) alkalis in diabetes, (9) dilatation of strictures of any kind, (10) climatic treatment of Raynaud's disease. *c.* Examples of treatment intended to modify, divert, or limit pathological physiology—(1) Sitting up with a "jumping" toothache, (2) diverting thought from self by occupation in psychosthenia, (3) opium towards the end of a dyspeptic diarrhea, (4) bathing in typhoid fever, (5) diet in diabetes, (6) reeducation in tabes dorsalis, (7) education on neurasthenia, (8) *x*-ray treatment in leukemia. Treatment based on pathological physiology was not the best type of therapeutics yet worked out; neither was it the worst. It occupied a position intermediate in value and efficacy between etiological treatment (which removed the cause of disease) and symptomatic treatment (which simply smothers the symptoms). It was based on the theories of the nature and trend of the body's reactions against the *materies morbi*, theories which, like all hypotheses, might lead to disaster unless constantly and empirically verified. Empiricism therefore was an essential element in every type of treatment, not a separate type coördinate with the other three types mentioned. Theory was nevertheless invaluable because it furnished the motive power of scientific progress; empirical verification guided, but did not initiate this progress. Treatment which aimed to remove the nonhuman causes of disease should neglect very largely the individual or human factors in the case; but treatment based on pathological psysiology could be effective only by ascertaining the physical and psychical peculiarities of each individual, and the unequal relations in which he stands to his family, his work, his education, his place of residence, and many other aspects of his environment. Etiological or symptomatic treatment must ask: Where is the disease? At what spot in the organism does it reside? To what spot does it direct remedial energies? Treatment based on the individual's manner of reacting to disease, he said, studied no single organ or region, but attempted to estimate functions and to estimate the whole individual so far as it could discover him.

The Pathological Physiology of Chronic Arterial Hypertension and Its Treatment.—Dr. THEODORE C. JANEWAY of New York considered hypertension as a striking departure from the physiological norm of the circulation, and, though only a symptom, yet a cause of such important secondary lesions in the heart and vessels, that it deserved independent consideration. It was common in nephritis, especially of the chronic interstitial type, and occurred occasionally in arteriosclerosis. It constituted the chief feature of a clinical group of cases which presented the same cardiovascular lesions as chronic Bright's disease, but no evidence of renal involvement. In an analysis of 130 cases showing a systolic pressure of over 200 mm., 13 per cent. belonged in this category. He discussed the probable physiological mechanism of the production of hypertension in arteriosclerosis, in nephritis, and in cases of unknown origin, and said that, whatever might be the exact mechanism of its production, we could not avoid the conclusion that hypertension expressed an attempt of the organism to maintain an adequate speed of capillary flow through the kidney, or other important organ, which would be impossible without it. While it was a symptom of disease, it was still more truly a proof of the body's defensive reaction against the disease. This conception was the foundation of rational treatment. Persistent high blood pressure was necessarily followed by important changes both in structure and function of the circulatory organs. Besides hypertrophy of the left ventricle and the arterial changes there was a diminishing distensibility of the arteries as the pressure within them arose, causing an increasing systolic elevation of pressure, and suddenness of the pulse wave, which predisposed to rupture at any weakened point. The danger most to be anticipated was insufficiency of the left ventricle, with resulting pulmonary and general venous stasis and their symptoms on the one hand, and inadequate capillary circulation, which intensified the primary trouble, on the other. The therapeutic indications were: (1) Prevention. This was directed toward limiting or ameliorating the primary disease, as the general hygienic management of chronic nephritis. Massage and the iodides belonged in this category. All hypertensive influences must be excluded. (2) Adjuvant Treatment. As a rule, a fall in blood pressure without other evidence of improvement marked the onset of cardiac insufficiency and called for digitalis. The indications for the drug were the same with hypertension as without, and no blood pressure reading should make us hesitate to administer it. Increasing blood pressure would sometimes be the evidence of a winning fight. (3) Emergent Treatment. This included all the means used to forestall or cut short those dramatic moments when life suddenly hangs in the balance. Here the vasodilators find their rational use. Nitroglycerin and other nitrites in attacks of angina and cardiac asthma, venesection and light chloroform narcosis in uremia. The induction of rapid vasodilatation would sometimes stop dangerous nasal hemorrhage. Attacks of edema of the lungs did not admit of simple explanation or routine treatment. The simultaneous use of rapid heart-muscle stimulants and of vasodilators to reduce the demands on the ventricle seemed rational. The hypertensive effect of severe pain made morphine at times a necessary agent.

The Therapeutics of Insufficient Kidney, Based upon Pathological Physiology.—Dr. Robert B. Preble of Chicago said a few words regarding the amount of urine passed in cardiac failure and said that the same care should be utilized regarding the intake of water and saline as in the ordinary cases of nephritis. With a low secretion of urine in infectious diseases there was nothing more important than the free administration of fluids. With regard to the treatment of renal insufficiency one should keep in mind the fact that, so far as clinical manifestations were concerned that were due to toxic bodies, we knew but little about them. There were two objects, first to limit the forming of toxic materials, and, secondly, to favor their excretion. The toxins came either from without or from within and both were under control. One external source was from the gastrointestinal canal; food underwent fermentation and that fermentation supplied toxic bodies. He considered sweating, purgation, and venesection; the latter procedure should be first thought of by the clinician and not delayed too long; it should be the measure first resorted to in these cases.

Therapeutics Based upon the Physiological Principles of Environment in Hospital and Private Practice.—Dr. Walter B. James of New York discussed the place of environment in therapeutics with special reference to the application of fresh air, or of out-door treatment, to other diseases than pulmonary tuberculosis, together with a plea for the more careful consideration of environment in hospital practice. Environment had two sides, the psychical and the physical. What constituted good and bad air, he said, had been under dispute for a long time. The temperature, stillness of the atmosphere, and ventilation had been based upon respiratory needs of the individuals who were expected to inhabit the rooms. No well man would be well off in an even temperature; then why should one expect the sick one to be? During the past year, he said, he had had the ventilating system cut off from one of his large wards and he opened windows and allowed the room temperature to be the same as the outside temperature, and he had seen nothing but good results follow. He asked why it would not be better to take a typhoid patient and subject him to the cold open air all the time than to shock him at intervals by the tub bath. Apply it slowly, but at all times. He referred to Dr. William P. Northrup's experience in treatment of cases in the open air at the Presbyterian Hospital.

The Physiological Principles of Feeding in Typhoid and in Other Fevers.—Dr. Francis P. Kinnicutt of New York offered a digest of metabolism experiments in some of the specific fevers, with a view to determining the value of different kinds of feeding. He also made a study of hospital statistics of typhoid fever, with a view to determining the influence of different diets upon the development of some of the complications. In 733 cases of typhoid fever fed upon a liberal diet there were 48 relapses, or 11.38 per cent.; hemorrhages occurred in 35, or 4.77 per cent.; perforation in 10, or 1.36 per cent.; mortality, 60, or 9.47 per cent. There were 4,277 cases fed upon a fluid diet, with 500 relapses, or 11.69 per cent.; 382 cases had hemorrhage, or 8.93 per cent.; perforation occurred in 104, or 2.43 per cent.; mortality, 457; or 10.68 per cent. It was rather interesting to note the wide range in the death rates from typhoid fever at the Presbyterian Hospital, New York, for the various years, as follows: 1894-1895, 87 cases, 10 deaths, mortality, 11.49 per cent.; 1895-1896, 67 cases, 11 deaths, mortality, 16.41 per cent.; 1896-1897, 67 cases, 4 deaths, mortality, 5.97 per cent.; 1897-1898, 127 cases, 9 deaths, mortality, 7.08 per cent.; 1898-1899, 101 cases, 16 deaths, mortality, 15.84 per cent.; 1899-1900, 150 cases, 23 deaths, mortality, 15.33 per cent.; 1900-1901, 152 cases, 14 deaths, mortality, 9.21 per cent; 1901-1902, 123 cases, 17 deaths, mortality, 13.90 per cent.; 1902-1903, 127 cases, 18 deaths, mortality, 14.17 per cent.; 1903-1904, 138 cases, 16 deaths, mortality, 11.59 per cent.; 1904-1905, 135 cases, 15 deaths, mortality, 11.85 per cent.

The Physiological Limitation of Rectal Feeding.—Dr. D. L. Edsall of Philadelphia gave a review of the experiments relating to rectal feeding, indicating that the most favorable effects to be expected by present methods were far below the nutritional requirements, except in regard to the introduction of water and salts. He discussed the explanation of the rare instances in which rectal feeding appeared to provide sufficient nutrition and also some of the possibilities of improving the methods of rectal feeding. From 150 to 300 calories were probably absorbed in this way, and probably more might be absorbed and the nutritional equilibrium maintained by nutritive enemata. The marked increase in weight following these enemata in disease was probably due to the absorption of the water. Again the ileocecal valve might allow some of the food to pass, and absorption then could take place, but this of course was only under very unusual circumstances. He did not expect or anticipate any great clinical value to be attained from rectal feeding. It could not be made to equal the natural methods of feeding. Present methods might be improved by providing artificially certain substances which the bowel could absorb. At present he found the best absorbed food to be dextrinized carbohydrates. Considerable amounts of dextrose, if acid free, can be absorbed by the large intestines. Some means might be devised by which the ileocecal valve could be made to allow the enemata to pass by.

Dr. W. S. Thayer said that it was important to treat the patient and not the disease, and that the mortality was higher, as a rule, upon a milk than upon a fluid diet. He believed the country doctor showed more wisdom in the treatment of these cases because he was more thrown upon his own resources.

Dr. William H. Thompson of New York regretted that more had not been said regarding the study of the changes occurring in the veins analogous to those occurring in the arteries. This, he believed, would throw more light upon the study than a mere study of the arterial changes. He briefly referred to work he had done in this line.

Dr. Thomas McCrae of Baltimore said that most cases of typhoid would get over their attack regardless of what one gave them; at least 75 or 80 per cent. of them would. But, not knowing who those 75 or 80 per cent. were, one took a certain risk in disregarding the diet.

Dr. H. A. Hare of Philadelphia said that he fed his typhoid fever patients as liberally as possible. During the first ten days they received a milk diet, but so soon as they became adjusted to their environment they were placed on a liberal diet, such as carbohydrates aided by some diastase, etc. He said that when a dog was sick, for several days he hid and ate nothing; he thought the same amount of starvation might very often benefit the typhoid patient. In reference to Dr. Janeway's paper he said there were two sets of cases, those with spasm and those with fibrosis. In the latter the nitrites would do no good whatever; the only drugs which would then be of value were the iodides. In such cases the nitrites gave no headache. He reported one patient with fibrosis who got 1-50 grain of nitroglycerin every hour without the production of any headache.

Dr. S. J. Meltzer of New York said that the instillation of 1-500,000 grain of adrenalin would cause dilatation of the pupil of a frog. He emphasized the employment of kindness in the treatment of patients. A more liberal diet in typhoid fever he believed should be given.

Dr. Shattuck of Boston said he had been using a liberal diet in typhoid fever for over thirteen years, feeding the patients according to their digestive powers.

Dr. Henry Koplik of New York said that he had treated 169 children with typhoid fever during the past five years and the proportion of relapses he found to be above that which occurred in adults. The diet was strictly a fluid one; if the children craved food they got minced food. There were four cases of perforation, and they occurred at a period when they were not on a fluid diet.

The Effects of Aperients on the Peristalsis of the Stomach and Intestines.—Drs. F. Pfaff and L. Nelson

of Boston presented this communication, giving a description of normal peristalsis as observed in the exposed intestines of animals in a salt bath, and a comparison of the results with those obtained from a series of observations of peristalsis in animals made by the *x*-ray. They also gave the effects of certain aperients on peristalsis in the stomach and intestines. Croton oil and aloes contracted the stomach, while podophyllin had very little effect on the stomach waves. Scammony had no effect on stomach, small or large intestines. The effects of rhubarb, cascara, senna, gamboge, jalap, and others were briefly considered. Only three had any effect on the stomach peristalsis, viz., croton oil, aloes, and podophyllin.

Dr. S. J. Meltzer of New York said that with the *x*-ray one was able to see the action only of the bismuth in the canal and not the action of the stomach or intestines. He then referred to some studies he was then engaged in making on the behavior of the cecum in rabbits, the results of which were to be published later.

Dr. H. A. Hare of Philadelphia spoke of the dangers of applying the results of animal experimentation to the human subject. He spoke of the selective action the intestines appeared to have in holding back certain substances and allowing others to pass on.

The Therapeutic Advantages of a Refined and Concentrated Diphtheria Antitoxin.—Dr. William H. Park of New York said that the comparative results in over 1,000 cases of diphtheria in which this refined and concentrated antitoxin was used indicated that the rashes and other deleterious effects occurred much less often and were on the average much less severe. They now saw children with a roseola or urticaria lasting but a few days and then disappearing. What was now being done by the Health Department was the first step in procuring a pure antitoxin.

(To be continued.)

THE AMERICAN THERAPEUTIC SOCIETY

Seventh Annual Meeting Held in New York, May 3, 4, and 5, 1906.

(Special Report to the Medical Record)

Carl Beck, M.D., President, in the Chair.

(*Continued from page 902.*)

SECOND DAY—FRIDAY, MAY 4.

Why the Medical Profession Should Sustain the Pharmacopœia.—Dr. F. E. Stewart of East Orange, N. J., read this paper. The first part of it was devoted to a historical sketch of pharmacy and of the Pharmacopœia. The speaker then went on to say that history shows that pharmacy is naturally a part of medical science and practice, and that the medical profession is responsible for pharmacy both from a scientific and practical standpoint. By relegating the practice of pharmacy to the apothecaries the medical profession had not escaped that responsibility. The medical profession was a privileged class of the community, responsible to the State for the advancement of medical practice, including pharmacy and the maintenance of a pharmacopœia. Thus far, with the exception of a devoted few, the profession had taken very little interest either in pharmacy or the Pharmacopœia. It was time for a change of policy in this matter. Without a pharmacopœia progress in drug-therapeutics was impossible. Common standards for determining the identity, purity, and strength of medicines were necessary to maintain uniformity in them, for in no other way could pharmacy be redeemed from those who were attempting to convert the practice of pharmacy into a commercial business; in no other way could pharmacy be restored to medicine as a branch of medical science and practice. It was not a question of the retail druggist *versus* the manufacturer, as some would have us believe, but a question of pharmacy and the Pharmacopœia *versus* a commercial business carried on under the name of pharmacy by those retail druggists and manufacturing houses alike who conducted their vocation in opposition to scientific and professional requirements.

Dr. Robert Reyburn of Washington, D. C., said that the thanks of the profession were due Dr. Stewart for the arduous work which he had done in behalf of pharmacology and legitimate pharmacy. The medical profession ought to stick to the Pharmacopœia. It was greatly to be regretted that our young graduates did not have a more adequate knowledge of pharmacology and the use of drugs. When they began practice they very easily got into the way of prescribing proprietary medicines. He thought that we should use our influence to have students better instructed and that we ourselves should strictly adhere to official preparations.

The Dietetic Treatment of the Vomiting of Pregnancy.—Dr. L. Kolikinski of Washington, D. C., read this paper. For precision of diagnosis and propriety of treatment he thought that the vomiting should be considered pernicious whenever the loss of strength was sufficient to prevent the patient from leaving her bed. A careful study of the phenomena presented in the condition had led him to discard the treatments hitherto in vogue, and to attempt the plan of a diet comprised of substances limited in number and of such physical structure that, by reason of their density and heaviness, their ejection from the stomach was well nigh impossible. Of proper foods, pork (ham or bacon) was first. A woman who had vomited incessantly for several weeks, who was too feeble to leave her bed, who had received varied and unsuccessful treatment, whose whole appearance was one of alarm, would find to her intense astonishment that the emesis did not occur after a breakfast of fried ham or bacon. She would then find that partaking of other solids improved her condition, and within a few days sleep and strength would have returned. In considering the factors producing this state of quiet, Dr. Kolipinski said, it was apparent that the chief one was the stable tone given to the distressed stomach, much like ballast to a vessel in troubled waters. The cooperation of the patient, due to new confidence and the assurance that her malady could be cured, was also very helpful. The daily breakfast should consist of pork in some form, with corn bread and cocoa or chocolate. At other meals might be taken beefsteak, roast or corned beef, and such vegetables as rice, potatoes, spinach, cauliflower, and turnips. Fish, game, fowl, and cheese were also good articles of diet. Foods which induced vomiting were water, if taken freely, milk, tea, coffee, soups, and fluids in general. The most unstable combination of a diet was toast, eggs, and sweetened tea.

The Medical Treatment of Cancer.—Dr. Robert Reyburn of Washington, D. C., read this paper. Believing that cancer was simply an error of cell development depending upon the retention of waste matter in the system, he would divide the treatment into preventive and curative. Prophylaxis was all-important, and he thought the treatment of cancer might be epitomized by saying that it should be the effort of physicians to endeavor to bring their patients into the highest possible condition of personal health and excellence of hygiene. To him it was lamentable to see the apparent helplessness of most medical men when confronted with a case of cancer. Generally no attempt was made to treat the case by medication or to improve the patient's hygiene, and the sole resource seemed to be the knife, the *x*-ray, or some form of electricity. Valuable as these agents were, it was his firm conviction that our success would be far greater if we would conjoin them with appropriate medical treatment.

Drs. F. H. Gerrish, R. T. Morris, Samuel Lloyd, and others urged immediate operation in all operable cases of cancer, unless the disease had progressed to such an extent as to be quite hopeless.

Dr. T. E. Satterthwaite said that methods other than surgical were applicable to cancer. It often yielded to light-therapy and occasionally to local applications, while spontaneous cures were possible. Besides, inoperable can-

cers were apt to fall to the care of the medical practitioner. But, notwithstanding, he would unhesitatingly take his stand on the side of surgery, to the extent of saying that in the vast majority of instances the treatment of cancer involved the use of the knife, sooner or later. Some years ago, in conjunction with Dr. W. H. Porter, he had made a study of one hundred cases of cancer in which all varieties of the disease were included, examining the tissues microscopically and following out their subsequent histories for some years. As a result he became convinced that the larger success which had been secured was due primarily to early and thorough operations.

Removal of the Prostate for the Care of Prostatic Dysuria.—Dr. L. S. Pilcher of Brooklyn read this paper. He said that in previous papers, the last of which was read before the Medical Association of the Greater City of New York in June, 1905, he had discussed quite fully the methods and results of prostatectomy for the relief of prostatic dysuria. Having given a summary of the conclusions reached in them, he stated that these conclusions had in no wise been shaken by the experience of another year. Of the 30 patients who formed the basis of his personal report in his last communication, 5 died as the result of the operation. Of the remaining 25, he had seen or heard of most since his last report; 2 of these had since died as the result of progressive renal disease, and 1 other had died about a year after operation, from pneumonia. In the very nature of the case, a considerable mortality from ordinary causes must rapidly diminish the number of survivors, but up to the present time there still remained so large a proportion of men who had been restored to comfort and usefulness, which they continued to enjoy even in their great age, that the series of operations unquestionably was properly the source of profound satisfaction from a surgical standpoint. Thus, after the expiration of periods varying from four years to one year after operation, twenty out of the thirty patients remained in good health, free from urinary obstruction. Only two of them had still to use a catheter. In all the cases which formed the basis of his previous papers, with a single exception, the method of approach to the prostate was through the perineum. During the year which had elapsed since the close of the period included within his previous statistical report he had had occasion to remove the prostate for dysuria in six additional instances, the patients being aged respectively 51, 63, 66, 73, 77, and 86 years. In only one of these cases had he adopted the perineal route; in the remaining five the suprapubic transvesical route was employed. In the perineal case the patient, 77 years old, died from progressive general asthenia, aggravated by a term of excessively hot weather on the twelfth day after the operation, which was difficult and prolonged. Of the five cases submitted to the suprapubic method, one, a man of 73 and hemiplegic, developed, on the fourth day, a hypostatic pneumonia which terminated fatally one week after the operation. In the other cases the aftercourse was without incident, and the treatment had resulted in a satisfactory relief of the urinary disability. In these suprapubic cases he had been well pleased with the control over the region of operation secured by the introduction of the gloved finger into the rectum, making counter-pressure against the prostate. Although his experience with it was limited, it had been sufficient to demonstrate to him that a very considerable advantage in the way of obtaining an intelligent direction of the work of enucleation could be secured by this method of conjoined rectal and intravesical manipulation, and he was now inclined to give a larger field for the suprapubic route than he had done in his earlier studies. In the majority of cases, however, he thought it probable that some method of attack from the perineum would continue to be the method of choice. He was inclined to think that for the best fulfillment of all the operative indications, when the perineal route was adopted, it was desirable that a free exposure of the gland by a suitable perineal incision and retraction of overlying parts should be made. The gland, after it had been exposed, was to be brought down as much as possible into the superficial operative field by the use of suitable tractors, and the removal of the obstructing masses was to be carefully and systematically affected, under the guidance of the eye as much as possible. This was simply an application of that tenet of general surgery which demanded the adequate exposure of an affected part as the first step of an attack upon it. Dr. Pilcher illustrated the technique of his operation with a series of drawings and a number of large photographs taken at several stages during the actual performance of an operation.

The Etiology and Treatment of Uremia.—Dr. Howard Van Rensselaer of Albany read this paper. He reviewed the prevailing opinions as to the etiology and pathology of uremic states and then went on to say that he thought we were justified in assuming the following conditions to be present: Probably by the action of bacteria in the intestine or liver there was circulating in the blood a poisonous proteid, which was the actual exciting cause of uremia. This proteid, by its irritant and destructive action on the kidney tissue, prevented not only itself from being changed or excreted, but prevented the elimination also of other excrementitious matters, such as urea, extractives, and salts, and permitted their accumulation in the blood. These excrementitious matters were capable of producing part of the symptoms, as vomiting, diarrhea, prostration, increased heart-action, contraction of the pupils, and perhaps muscular tremors. The hyperosmosis produced by the increased amount of the crystalloid substances might perhaps modify the composition of the cellular structure in different parts of the body, sufficiently to interfere with their functions and give rise to symptoms. If these premises were correct, he thought the treatment of uremia ought to be conducted along four general lines: (1) Removal of the exciting causes; (2) prevention of the reappearance of the exciting causes; (3) physiological rest to be diseased tissues; (4) the treatment of individual symptoms as they arise. For removal of the exciting causes he would give venesection first place. While the most important cause of uremia was probably the poisonous proteids referred to, unfortunately we knew of nothing that would change the composition of this body from a dangerous into an innocuous substance, nor of anything which would surely and rapidly cause its excretion through the ordinary emunctories. There was but one quick and certain method at our disposal for its elimination, and that was by a direct removal of a part of the poison from the body by venesection. This was to be employed as early as possible during the uremic seizure. For an average-sized adult a pint of blood, or even a little more, might be withdrawn. This method was also the quickest means of reducing the tension in the blood-vessels. Next, he would lessen the toxicity of the blood by dilution. This might be done in three ways: by the intravenous injection of saline solution, by hypodermoclysis, or by copious draughts of pure water. The last-named was the slowest, but also the simplest and safest, and was that preferred by the speaker. In the third place, removal of urea and extractives was to be aided by dialysis. This was to be accomplished by stimulating the emunctories in four ways: by the drinking of water, by catharsis, by diaphoresis, and by diuresis. In regard to the prevention of the reappearance of the exciting causes he said that if a poisonous proteid were produced by bacteria, it was obvious that we should keep the intestinal canal as clean as possible by catharsis, possibly aided by antiseptics, and be exceedingly cautious in the administration of food containing proteid. In order to give physiological rest to the diseased tissues food, in the case of adults, should be withheld for at least twenty-four hours, and then small quantities of peptonized milk or well-diluted gruels might be used. Milk had worked best in the hands of most observers. Next to it, he favored those prepared infant and invalid foods which contained but a very small proportion of proteid content. Cathartic and diaphoretic treatment, by

taking up the excreting function usually performed by the kidneys, helped also to give these organs physiological rest. As to the treatment of individual symptoms as they arose, the obvious symptoms of convulsions might sometimes be controlled temporarily by chloroform or ether anesthesia, or by morphine hypodermically. While a marked difference of opinion existed in regard to the advisability of the use of the latter drug, he thought an indication as to whether it should be given or not might perhaps be found in the condition of the pupil. In those individuals in whom the pupil was dilated, the morphine seemed to act beneficially, but in those in whom it was contracted the reverse was true. On the theory that the symptoms of convulsion and coma are due to increase of intracranial pressure, successful results had recently been reported from the employment of spinal puncture, an amount of cerebrospinal fluid being withdrawn sufficient to bring the intracranial pressure down to normal.

Significance of Jaundice.—Dr. Samuel Lloyd of New York read this paper. Within the last four years, he said, jaundice had taken on a new significance, and without doubt the great bulk of our present knowledge regarding its causation was the result of surgical investigation. He referred to the various classifications of jaundice, and presented Mayo Robinson's tabulation of the extrahepatic variety. He then mentioned one condition, not included in the latter, which he believed to be the direct result of chronic catarrh of the gall-ducts. This was an inspissation of the bile filling the common duct and sometimes the gall-bladder, and even the hepatic ducts for a considerable distance into the liver itself, with a thick, pasty dark mass. This was about the consistency of soft putty, and offered a complete obstruction to the natural escape of the bile. Medical treatment could be of little avail in removing this, while the results of operative treatment were so prompt, and offered so little danger, that it should be undertaken early. Two conditions had to be considered most carefully in the surgical treatment of jaundice: the changes in the blood and the changes in the kidneys. As regards the former, the change of most serious character was the marked decrease in coagulability (in fact, a pseudohemophilia), and it constituted one of the most dreaded conditions that surgery had to contend with in operations on the liver and bile-ducts. The hemorrhages resulting from it did not as a rule occur immediately after the operation, but began from one to four days later. In all cases of prolonged jaundice marked and increasing anemia had also a be contended with; therefore it was important that the percentages of hemoglobin should be determined at the same time that the coagulability of the blood was investigated. Operations of any kind undertaken with a percentage below 30 were exceedingly serious. Changes in the kidney were important, both in determining the anesthetic to be employed and in influencing the prognosis. It was not the surgeon's fault that the percentage of deaths in these cases was so high, but rather that of the medical practitioner, who delayed calling in the surgeon until a grave condition had developed as the result of the combined toxemias of jaundice and nephritis. Cases of jaundice which came to the operating table early, before they were suffering from general toxemia, did well and usually recovered promptly. It was also well to remember that in all probability the chronic irritation of gallstones might be the potent cause for the development of cancer. Many of the conditions referable to the stomach and treated as chronic gastric affections were also due to a spasm of the gall-bladder and ducts, either with or without a chronic empyema. Exploratory incision would undoubtedly reveal the cause of many of these gastric troubles. Taking up the intrahepatic conditions, Dr. Lloyd said that, leaving out the malignancies (which were nearly always metastatic when they appeared in the liver itself, and in which operative interference was out of the question), gumma of the liver and benign tumors generally might be operated upon successfully. Abscesses of the liver, including those of amebic origin, should be operated upon and drained, and in cases of hepatitis or of jaundice either to inflammatory changes in the acini, where the condition was not promptly relieved by medical treatment, the suggestion made by Dr. W. E. B. Davis, of doing a hepatotomy, was practicable and comparatively safe. In hepatic cirrhosis the Talma-Morris-Drummond operation was well worth a trial in cases in which the ascites was great and the patient losing ground.

Recent Advances in Special Therapeutics.—A symposium on recent advances in special therapeutics concluded the scientific sessions. The subjects and writers were as follows: "Pediatrics," Dr. J. Madison Taylor of Philadelphia; "Ophthalmology," Dr. W. B. Marple of New York; "Gynecology," Dr. H. C. Coe of New York; "Surgery," Dr. J. B. Deaver of Philadelphia; "Obstetrics," Dr. E. H. Grandin of New York; "Neurology," Dr. E. D. Fisher of New York; "Laryngology," Dr. C. H. Knight of New York; "Electrotherapeutics," Dr. W. J. Morton of New York; "Otology," Dr. W. C. Phillips of New York.

THIRD DAY—SATURDAY, MAY 5.

Election of Officers.—The following officers were elected for the ensuing year: *President,* Dr. Robert Reyburn of Washington, D. C.; *First Vice-President,* Dr. J. E. Janvrin of New York; *Second Vice-President,* Dr. F. H. Gerrish of Portland, Me.; *Third Vice-President,* Dr. Howard Van Rensselaer of Albany; *Secretary* Dr. N. P. Barnes of Washington, D. C.; *Treasurer,* Dr. J. S. McLain of Washington, D. C.; *Members of the Council,* to fill vacancies, Drs. Abel and Osborne; for the term ending in 1911, Drs. Barnes, Fisher, and McLain; *Censors,* Drs. Satterthwaite, Osborne, and Leech.

It was voted that the next meeting of the Society should be held at Washington, D. C., in May, 1907.

AMERICAN MEDICAL ASSOCIATION.

Fifty-seventh Annual Meeting, Held in Boston, June 5, 6, 7, and 8, 1906.

(Special Report to the Medical Record.)

(*Continued from page 995.*)

SECTION ON MEDICINE.

Third Day—Thursday, June 7.

Recent Advances in the Physiology of the Circulation.—Dr. Joseph Erlanger of Baltimore gave a critical review of recent work on the physiology of the blood pressure, with special reference to the principles employed in the estimation of the blood pressures in man, and to the interpretation of the results obtained. The recent work on the relation of periodic respiration to blood pressure variations was also considered. Of the many recent contributions to the physiology of the heart, those relating to only two topics were reviewed, namely (*a*) the survival of the mammalian heart after the death of the organism, and (*b*) conduction from auricles to ventricles in the mammalian heart.

A Study of the Heart in Chorea.—Dr. W. S. Thayer of Baltimore reported some studies of the heart and blood vessels of old choreic patients treated at Johns Hopkins Hospital, and made comparisons of the conditions at present and during the time they were under treatment. A brief summary of the work was as follows: There were altogether 808 cases, 698 of whom were treated in the dispensary and 110 in the hospital wards. Three per cent. of them were colored, showing a relative infrequency of the colored. Over 71 per cent. were females. The cases were divided into three classes, first, those giving a history of one attack, 62.5 per cent.; secondly, those who had had two attacks, 20 per cent.; and thirdly, those who had had three or more attacks, 17 per cent. Of particular importance was the frequency of cardiac complications, or history of them, preceding, succeeding, or complicating the symptoms. There

were 789 cases in which a definite history was obtained as to whether such manifestations were present or not. In 22 per cent. there was a history of rheumatism; in 78 per cent. there was no such history. Cardiac murmurs were observed in 41 per cent.; in the hospital cases, where more careful observations were taken, cardiac murmurs were observed in 85 per cent. In somewhat under one-half of the cases in both dispensary and hospital the signs were heard which were indicative of functional and not organic lesions. In a little over one-quarter of all the cases conditions were found which justified the diagnosis of organic heart disease. These lesions were mitral in 157 cases, aortic in 12, and acute endocarditis was present in 6; there were 20 cases in which definite organic lesions were present, and also an acute endocarditis at the time of observation. There were three cases of pericarditis. In two cases which came back with relapses the diagnosis of adherent pericardium was made at the time of relapses. In 83 per cent. there was no history of rheumatism, while in 17 per cent. there was. Cases without cardiac complications, 66 per cent. had one attack, 19 per cent. had two attacks, 15 per cent. had three or more attacks. Cases with cardiac complications showed 50 per cent. had one attack, 25 per cent. had two attacks, 25 per cent. had three or more attacks. These figures showed that relapses or recurrent attacks brought greater danger of cardiac complications. Of the 110 cases treated in the hospital, there was only one instance in which the patient had no fever whatever; there were four cases in which the temperature occasionally rose above 99° F. Among 51 cases without cardiac involvement, 39.5 per cent. had a temperature between 99° and 100°, 50 per cent. between 100° and 101°. Among the cases with cardiac involvement, 15.5 per cent. had temperatures between 99° and 100°; 32.2 per cent. had a temperature between 100° and 101°. He said that definite febrile manifestations without rheumatism, occurring during an attack of chorea, especially when in association with an unduly rapid pulse, might be regarded at least as strongly suggestive of evidences of a complicating acute endocarditis. In conclusion, he said that out of the 698 cases of chorea observed during one or more attacks, over one-half showed evidences of cardiac involvement; that the heart was involved with somewhat greater frequency in those cases in which there was a history of acute polyarthritis; that the dangers of cardiac involvement appeared to increase with the recurrent attacks or relapses; that in 110 cases treated in the hospital wards, fever of moderate extent was present in almost every instance; that in the majority of the cases in which fever was above 100° F. there were evidences of cardiac involvement; that there was good reason to believe that the presence of persistent fever in an otherwise uncomplicated chorea in the large percentage of the cases gave evidence of a complicating endocarditis.

Effects of Pericarditis upon the Heart.—Dr. N. S. Davis of Chicago read this paper. He said that pericarditis was not necessarily a fatal lesion; it was variously estimated that from 50 to 75 per cent. of all cases recover. Rheumatic pericarditis was, as compared to that caused by other infections, benign. Hemorrhagic and purulent pericarditis was almost uniformly fatal, always so unless recognized and successfully treated. About one-third of the cases of pericarditis were serofibrinous; about one-sixth were hemorrhagic or purulent; one-twelfth tuberculous; in approximately the same number there was total synechia, but in one-third there were adhesions between part of the pericardial surfaces. A rapidly developing effusion was dangerous, but recovery could be effected, or life prolonged, even in the majority of the cases by aspiration and treatment. A large, slowly developed effusion was not as threatening or immediately dangerous, and a small effusion was of no greater gravity than fibrinous inflammation. The prognosis must be influenced by the condition of the muscle of the heart at the time of the pericarditis. Chronic alcoholism and the cachexia of cancer, Bright's disease, and tuberculosis made slight the possibility of prolonging life. Pericarditis in these cachexias was usually due to a terminal infection, and was often the immediate cause of death. It was also a much more serious complication of pneumonia than of pulmonary tuberculosis, and a very grave complication of sepsis. As might be expected, it was most dangerous in the earliest and latest years of life.

Relation of the Heart in Chronic Nephritis.—Dr. Nathaniel B. Potter of New York reviewed the theories of mutual relationship between heart and kidneys, giving experimental, pharmacological, and clinical evidences. He also considered the dynamic and chemical problems. He gave an analysis of autopsies on chronic nephritis cases at New York City Hospital during the past three years.

Angina Pectoris—True and False.—Dr. James M. Anders of Philadelphia read this paper. He said that the mechanism involved in the pathogenesis of true angina pectoris was still imperfectly understood. It was definitely known, however, that structural changes involving the cardiovascular system, more especially coronary sclerosis with myocardial degenerations, were present in the vast majority of the cases. Some of the hypotheses, which had been advanced, merely attempted to explain the cause and seat of the pain, forgetting that this symptom was but one of a group of characteristic features. Dr. Anders then briefly reviewed the multiple theories regarding the cause or causes of the precordial paroxysms. He expressed the view that an impaired nervous vitality was to be looked upon as a marked predisposing element. The fact that angina pectoris was a neurosis of the heart was too constantly overlooked. While not desiring to underrate the etiological importance of angiosclerosis, he thought that many instances of angina pectoris were clearly the traceable result of a nervous or mental mechanism that had been overworked, with insufficient rest. This condition might be looked upon as a form of neurasthenia, but Dr. Anders suggested the possibility of some peculiar nutritional or degenerative change in the nervous system, brought about by the high-pressure changes that served as the predisposing elements in angina pectoris. No theory, however, of the genesis of this syndrome was complete that did not account for the angina sine dolore. An interesting case was reported by Dr. Anders, in which the starting point of the pains was the precordial region for a time, but later it shifted to the epigastrium. Great cardiac oppression was associated, and constituted the dominating feature; it invariably originated, like the pain, in the epigastrium, then traveled wavelike upward over the thorax. The case terminated fatally, preceded by the usual manifestations of angina sine dolore. This clinical form was found to be engrafted upon a variety of structural cardiac diseases, such as mitral regurgitation, mitral stenosis, dilatation of the heart, and aneurysm of the first portion of the arch and adherent pericardium. The absence of intense pains in these cases was probably due to oncoming dilatation, which relieved endocardial pressure. The cases in which the pain originated below the diaphragm were not less threatening to life than the more usual, typical instances. Dr. Anders called attention to a form of angina pectoris dependent on a diet containing an excess of proteids. These cases sometimes manifested, as an associated condition, chronic intestinal toxemia. The term "pseudo-angina" should be retained until additional light shall have been thrown upon the whole subject under discussion. Most cases originated in vasomotor instability or irritability, and the vast proportion occurred among females of the hysterical type and about the period of the menopause. The pseudo-angina of Nothnagel, due to suddenly induced vasoconstriction, was characterized by a special set of symptoms. The instances of angina directly traceable to autointoxication from errors of diet should be placed in the same category, provided that no sub-basis in the nature of an organic lesion of the cardiovascular system was discernible. True angina and pseudoangina, therefore, had causative factors and symptoms, as pains and vasomotor disturbances, in

common, but spurious angina differed from the true form in three leading particulars: (1) Gross lesions were absent; (2) it differed symptomatically, and (3) it usually yielded to appropriate treatment. Dr. Anders expressed the view that apparently typical cases of pseudoangina might develop gross cardiac lesions, followed by the symptoms and course of the true form. Cases of this sort had been reported by a number of writers. From personal observations, the writer felt himself privileged to speak confidently regarding certain cases, which so far as could be determined by known methods of examination, at least, were noncoronary, although they might be fraught with lurking dangers. The cases of pseudoangina were divisible into three groups: (*a*) The neurotic; (*b*) toxic (two groups suggested by Osler), and (*c*) reflex pseudoangina. The last named clinical or etiological type was usually classified as a subvariety of the neurotic type, but in his opinion it was of sufficient importance to demand separate grouping. Dr. Anders stated that true angina pectoris could be differentiated from the false form in a decisive way by the *angor animi*, and the strong sense of imminent dissolution. Attention was called to the mild and doubtful cases and the importance of carrying out an exhaustive survey in the individual case before pronouncing in favor of false angina, was strongly urged. There was evidence, chiefly clinical, to establish a certain relationship of the two forms of angina, although it was commonly held that the false variety was solely of neurotic origin, a sort of unsteadiness, which had been designated by S. S. Cohen as vasomotor ataxia Finally, the balance of the cases belonging to pseudoangina differed widely and fundamentally from true angina pectoris.

Dr. Woods Hutchinson of Redlands, Cal., Dr. Frank Jones of Memphis, Tenn., Dr. W. S. Thayer of Baltimore, Dr. James Tyson of Philadelphia, Dr. Clayton of Washington, Dr. C. M. Cooper of San Francisco, Cal., Dr. Norris of Philadelphia, Dr. Bertram W. Sippy of Chicago, Dr. De Lancey Rochester of Buffalo, and Dr. Black of Pasadena discussed the papers.

Quackery.— Dr. A. Jacobi of New York read this paper. He said that the distrust of medicine and its powers was as old as the world, for not many ever knew or cared to appreciate what medical science or art was capable or not of accomplishing, or should be held responsible for. The more uncultured or uncontrolled the human intellect, the greater was the predominance of mysticism. The public was not always edified by the doctors. Hippocrates complained bitterly of the contests of physicians among each other, and more than 2,000 years later Peter Frank thought and advised seriously that the only way to procure an orderly consultation was to call in the police. The masses were at last driven into the arms of sectarians and the quacks. The era of scientific medicine, beginning a little more than half a century ago, was built up on anatomy and physiology. One would have supposed that the darkness of quackery would disappear before the new light; on the contrary, it had grown in geometrical proportions, until the accumulated ignorance of quacks and fakirs had become a power in every land. The Germans, who liked to style themselves the nation of thinkers, had more quacks than any other people. Saxony and Bavaria had one quack to every two physicians; Berlin had two to nine. Physicians were responsible for much of the self-dosing with patent medicines. For babies they prescribed artificial foods, the composition of which they knew not. They prescribed nostrums and took journals that printed "reading notices" of proprietary medicines, that printed advertisements of drugs in the shape of "original articles," that alternated their medical with advertising pages. Dr. Jacobi said that a friend of his examined 50,000 prescriptions compounded in a number of drugstores, and between 1850 and 1873 he met with no nostrums; in 1874, 1 in 1,500; and from that time the number increased, until in 1902 and 1903 it was from 20 to 25 per cent. In one of the large drugstores he had been assured that 70 per cent. of the prescriptions sent in by reputable physicians contained either nostrums pure and simple, or as a part of the compound. One of the reasons for this demoralization should be generally known and appreciated, and that was that there were very few medical schools a graduate would leave, diploma in hand, with the knowledge and practice of writing a prescription. Our medical colleges neglected their duties by thus omitting to teach the art of medicine in combination with what was obviously and pompously called science. He asked the medical schools to remember what all the general practitioners could tell them, that medicine meant both science and art.

The afternoon session was devoted to a symposium on diseases of the joints.

A Review of the Bacteriology of Acute Articular Rheumatism.— Dr. Lewis A. Conner of New York read this paper, and said in conclusion that one was justified in believing (1) that acute rheumatism was a specific, infectious disease, and was not merely an attenuated pyemia resulting from the common pyogenic organisms; (2) that the bacillus of Achalme had no etiological relation to acute rheumatism; (3) that while there was considerable evidence in favor of the view that the disease was caused by a specific diplo- or streptococcus, there were still lacking positive proofs of the specificity and identity of this organism and of its causal relation to rheumatism.

Gonorrheal Arthritis.—Dr. John A. Witherspoon of Nashville, Tenn., read this paper. After considering the etiology, pathology, and symptomatology, he took up the differential diagnosis from acute inflammatory rheumatism. In gonorrheal arthritis the presence of the primary disease, while not pathognomonic, was important; the fever was not so irregular; the lactic acid sweats were absent; the joints were brighter red, more painful, tended more to suppuration, etc. There was not the sudden subsidence of trouble in one joint, and the sudden involvement in another; the endocardium was rarely involved; the case was much more prolonged, and did not yield to the salicylates. The differentiation between the chronic form and tuberculous arthritis was more difficult. In chronic gonorrheal arthritis many joints were involved, the joints were more swollen, more painful, with some redness, had large effusions, and had more tendinous involvement, and more edema, etc., than in the tuberculous cases; in the latter the joints were often white and glazed in appearance, and the trouble was more central, often involving the epiphyses of the bones. The tendency of the profession to call all joint troubles rheumatism was far from correct. After considering the prognosis, he said that the treatment was as varied as unsatisfactory. In the acute type rest in bed, fixation of the joint, local applications of heat or cold, etc. The internal administration of drugs rarely helped the matter, and was not advisable except to meet symptomatic conditions. In the chronic cases general reconstructives were used and potassium iodide. All surgical interference should not be condemned; aspiration was advised in some cases, and where there was suppuration, incision and drainage constituted the only treatment. He then referred to the remarkable cures that had been reported by Dr. Eugene Fuller of New York City, who insisted that the infection came from a gonorrheal vesiculitis, and by opening and draining them secured an immediate amelioration of the arthritis.

Differential Diagnosis of Rheumatoid Joint Affections.—Dr. James B. Herrick of Chicago said that he would narrow his discussion and not consider such conditions as sarcoma of the joint, monarticular tuberculosis, sprains, and other traumatic arthritides, nor would he do more than mention the arthritides occurring in connection with definite infectious diseases, such as scarlatina, pneumonia, epidemic meningitis, septicemia, pyemia, etc. Here diagnosis was comparatively easy. Laying these aside, there remained a goodly number of joint troubles whose exact recognition was no easy task. Such conditions were gout, arthritis deformans, gonorrheal arthritis, some of the

arthropathies of nervous diseases, the joints of hemophilia, scurvy, the purpuras, some cases of tuberculous polyarthritis, etc. Their exact recognition was difficult, because there was no accurate etiological classification, because differentiation on the basis of post-mortem anatomy was none too clear, and the anatomical changes in life were not always recognized, and were liable to be confused with one another. One must depend in these on a study of the symptoms and signs, mode of onset and advance of the disease, temperature, pulse, number of joints and which joints involved, lesions in other organs and tissues, tendency to relapse, influence of therapy, *x*-ray examination, etc., in order to reach a reasonable probability of truth. Such a thorough study usually resulted in a diagnosis as near accurate as our imperfect classification would admit. In arthritis deformans there were three notions partially wrong, namely, that arthritis deformans was always chronic in onset and course, did not cause fever, and began in the small joints. In the more acute type of arthritis deformans there was not the shifting of the process from one joint to another, as in acute rheumatism. Even in the chronic cases a pulse of 90 to 110 was common. The profuse sweats of acute rheumatism were lacking, endocardial and pericardial complications were scarcely ever seen. Salicylates were comparatively inert. The acute process was slower to subside than in acute rheumatism. Arthritis deformans was more likely to attack the temporomaxillary, sternoclavicular, and vertebral joints than was true rheumatism. Some hesitated to declare a case arthritis deformans because of the evident presence of a considerable amount of fluid in a joint. This could often be found, as in the knee, elbow, and wrist. Sometimes atrophic, not hypertrophic, changes were met with. Localized spondalitis might simulate tuberculosis of the vertebræ, with pain and other cord symptoms, due to pressure, and thus be hard to recognize. In some of these cases of local spondylitis careful research might reveal a stray joint here and there in some other part of the body involved in a typical manner, that would betray the nature of the vertebral disease. Some of the earlier symptoms described by patients sound like the stories of a neurasthenic or hysterical individual, as burning in the hand, sudden weakness in the hand, tenderness along the carpus, sudden chilliness, sudden weakness, etc. He had been deceived in one case of a hysterical woman who gradually developed one of the worst cases of arthritis deformans. The diagnosis was often helped by the *x*-ray revealing the bony nature of the deformities or the atrophic changes in the joints. He had never seen arthritis deformans helped by visits to springs, baths, etc. One should not forget that polyarticular deforming arthritis occurred in children, often with glandular and splenic enlargement. The early diagnosis of arthritis deformans was of great importance from the standpoint of prognosis and therapy. Too often a diagnosis of rheumatism or gout led to a restriction of diet that was useless and a deluging of the system with salicylates, etc. In differentiating arthritis deformans from gout, one should take into consideration the following points: Gout was apt to be found in people of all classes; tophi should be watched for; the big toe history should be taken from the beginning; examination should be made for cardiovascular accompaniments of the disease; the uric and phosphoric acid output should be studied; an *x*-ray would generally confirm the diagnosis. Without tophi there were cases that were baffling and where a provisional diagnosis might be temporarily made.

Joint Affections in Nervous Disease.—Dr. Lewellys F. Barker of Baltimore read this paper. He said that leaving out certain joint affections, the most important fell into the following groups: (1) The intermittent joint effusions (hydrops articulorum intermittens). (2) The arthropathies of tabes and dementia paralytica (arthropathia tabetica). (3) The syringomyelic arthropathies (arthropathia syringomyelica). (4) The painful joints of the psychoneurotics (arthralgia psychoneurotica. He considered in detail the symptoms and diagnosis of these, and briefly dealt with the treatment.

The Treatment of Chronic Nontuberculous Arthritis.—Drs. Edwin A. Locke and Robert B. Osgood of Boston presented this communication. They classified chronic nontuberculous arthritis into villous arthritis, infectious arthritis, atrophic arthritis, hypertrophic arthritis, and chronic gout. The treatment was essentially the employment of methods influencing general metabolism and the local treatment of the affected joints. There were certain general régime for all cases, with special methods for the various types. First there was the general treatment for all cases, treatment of the disturbances of the general health, *i.e.* malnutrition, nervous debility, anemia, emaciation, obesity, etc.; treatment of the organic disturbances, *i.e.* circulatory, respiratory, renal, etc.; treatment of infective foci, *i.e.* of middle ear, tonsils, genitourinary tract, pyorrhea alveolaris, salpingitis, etc.; treatment in connection of deformity by operative measures and apparatus. Then there was the diet. Again, there was the physical therapy, the treatment by hyperemia—active to lessen the pain, increasing motion, favoring the action of the circulation so as to produce increased nutrition to joint with absorption of exudates; passive, lessening the pain, reducing the inflammation, overcoming the infection. Then they considered massage, hydrotherapy, and rest. Secondly, there was the special treatment.

Dr. Joel E. Goldthwait of Boston contrasted the papers just read with those read four or five years ago; at this meeting the term uric acid had only been mentioned once, and that only as a feature of the disease and not as a cause. Apparently the physicians in the country were working intelligently and honestly in trying to unravel the many features in these diseases, about which so much uncertainty existed. He emphasized the importance of making a very thorough examination in every case, using every method available. It was the pathology that underlay all treatment. He pleaded with them that they all do their best and contribute even a mite to the knowledge of a large subject which represented the cause of more of the helpless cripples than any other disease with which they were confronted. In watching cases of gonorrheal arthritis, it was his experience to observe the joint exudate and distention, a serous effusion in the joint, occurring during the first two, three, or four weeks, and then came the purulent cases, with much joint destruction. Or polyarticular infiltration would occur, which led to the formation of adhesions, making the manipulative treatment of these joints very difficult, and almost impossible in the severer forms of gonorrheal arthritis. Therefore he believed that if the acute symptoms did not subside at the end of three or four weeks, operation should be performed to get rid of the effused material. With greater knowledge came fewer diagnoses of hysterical joints.

Dr. George W. McCaskey of Fort Wayne, Ind., said that acute rheumatic arthritis was of infectious origin, and that to this poison, whatever its nature was, special susceptibility was given on the part of joint structures. He called attention to the dangers attending operative interference upon the urethra during an active gonorrhea, and reported such a case, the patient afterwards developing a gonorrheal endocarditis.

Dr. James J. Walsh of New York said that the term rheumatism should be gotten rid of. Acute arthritis might be traumatic or infectious. In Paris he saw 160 soldiers with mumps, and 11 of them developed a mumps arthritis.

Dr. John Rogers of New York spoke of the use of antigonococcal serum used in 45 cases of gonorrheal rheumatism. There were 83 per cent. of cures in the acute cases, 84 per cent. in the subacute cases, while in the chronic cases, numbering 13, only 4 were cured. This antigonococcus serum seemed to be valuable in gonorrheal septicemia.

Dr. Woods Hutchinson of Redlands, Cal., said that last winter he had had under his care from 60 to 70 cases of

chronic rheumatism, so-called, and out of this number more than 60 per cent. of them could be traced clearly to some acute infectious disorders, such as influenza, pneumonia, typhoid fever, etc. Salicylates did not diminish the number of complications, nor did they shorten the disease.

Dr. Charles E. Skinner of New Haven called attention to the treatment of arthritis deformans with hot air and static and high-frequency electricity.

Dr. Conner said there was no doubt but that many of these cases of acute articular rheumatism were due to toxins.

Dr. Witherspoon considered serum therapy in its embryonic state as yet, and said we were not warranted in recommending it now.

Dr. James B. Herrick recognized the importance of early aspiration in those cases of gonorrheal rheumatism.

Dr. Lewellys F. Barker said he was glad to hear it said that rheumatism was of infectious origin. The serum treatment should not be too strongly advocated until we knew more about the disease.

(To be continued.)

A Case of Typical Tetanus Observed in a Monkey.—Henry Labonne observed this case. The writer had owned the animal four years and as it was about a year old at the time when it was purchased, it was about five years old when attacked by tetanus. The writer first noticed a suppurating wound at the umbilicus which had been caused by injury with a piece of iron attached to the strap which fastened the monkey. A dressing of menthol was applied to the wound which closed up the next day, but the monkey would not touch his favorite food. Great depression was followed by the development of trismus. The jaws could not be opened sufficiently for the introduction of a spoon between the teeth. Opisthotonos developed and the monkey dropped to the bottom of his cage. From this time the least jar gave rise to violent paroxysms, the muscles twitching as if they were under the influence of electricity. The animal died with its intelligence undulled. The body assumed the classic position of this disease, touching the ground with its two extremities only. It is interesting to recall the fact in this connection that negro infants not infrequently suffer from tetanus consecutive to an injury of the umbilical cord.—*Gazette des Hôpitaux Civils et Militaires.*

Medical Gymnastics in the Treatment of Pleurisy.—L. Bernardo says that pleurisy, exudative or serofibrous, is very common in the Italian army: during twenty years there have been 42,035 cases, the maximum in any year being 1,390, the minimum, 294 cases. Many of them are of tuberculous origin; others produced by the diplococcus of Fraenkel and the streptococcus. In general, while there is fever, the liquid exudate is not absorbed because the pleura and the lymphatic channels are affected by the inflammatory process. After the fever is over, absorption begins and is rapid in proportion as the lymphatics become quickly pervious or no. The breathing exercises increase expansion and this facilitates absorption. By making use of the muscles of forced respiration, instead of only those that have become atrophied by non-use, the circulation is much improved and absorption increases. The lung dilates thoroughly in forced respiration, and each day inspiration is deeper. The exercises used are raising the arms with inspiration, lowering them with expiration, raising them with external rotation on inspiration, and all movements that tend to erect the trunk and produce lateral and posterior movements of the vertebral column. The treatment was given to forty-eight soldiers in all. There was a less number of recurrences of pleurisy; convalescence was more rapid, pulmonary respiration returned more rapidly, the muscles increased in volume, and general health was quickly regained. All cases were discharged from hospital sooner than usual.—*Giornale Medico del Regio Esercito.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending June 16, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	316	157
Diphtheria	297	26
Measles	669	30
Scarlet Fever	133	10
Smallpox	4	—
Varicella	108	—
Typhoid Fever	38	6
Whooping Cough	58	3
Cerebrospinal Meningitis	14	14
Malarial Fever	.....	.....
Totals	1,737	246

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending June 16, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
District of Columbia, Washington	June 2–9	2	..
Florida, General	June 2–9	20	..
Georgia, Sapelo Island	June 2–4	1	Imported
Illinois, Cambridge	June 2–9	10	..
Chicago	June 2–9	1	..
Kansas, Topeka	May 26–June 2	1	..
Louisiana, New Orleans	June 2–9	19	1
Missouri, Joplin	June 5	5	Imported
St Louis	May 26–June 2	1	..
Nebraska, Omaha	May 26–June 2	1	..
New York, Buffalo	May 1–30	1	..
New York	June 2–9	1	..
Ohio, Cincinnati	June 1–8	2	..
Oklahoma, Oklahoma City	May 26–June 9	14	1
Pennsylvania, Lancaster	June 2–9	1	..
Tennessee, Memphis	May 31–June 6	3	..
Wisconsin, Appleton	June 2–9	3	..
Milwaukee	June 2–9	2	..

SMALLPOX—FOREIGN.

Africa, Cape Town	April 21–May 5	13	..
Argentina, Buenos Ayres	Mar. 1–31	68	52
Brazil, Pernambuco	Apr. 15–30	..	7
Canada, Toronto	May 26–June 2	2	..
Chile, Iquique	May 5–12	..	Present
China, Hongkong	April 21–May 5	9	4
Canada, Winnipeg	May 26–June 2	1	..
Germany, Bremen	May 19–26	..	1
Gibraltar	May 20–27	4	1
Great Britain, Hull	May 19–26	1	..
Liverpool	May 19–26	1	..
Greece, Athens	May 21–28	..	4
India, Bombay	May 8–15	..	8
Calcutta	April 28–May 5	..	131
Karachi	April 30–May 13	48	16
Madras	May 5–11	..	11
Rangoon	April 20–May 5	..	28
Italy, General	May 17–24	30	..
Russia, Moscow	May 5–19	22	8
Odessa	May 12–26	24	3
Spain, Barcelona	May 20–30	..	5
Turkey, Constantinople	May 20–27	..	1

YELLOW FEVER.

Cuba, Habana	June 7–12	2	1
Honduras, Pimienta	May 19	11	..
Mexico, Merida	May 20–26	1	..
Santo Domingo, La Vega	June 9	..	Present.

CHOLERA.

China, Hongkong	April 28–May 5	1	1
India, Bombay	May 8–15	..	18
Calcutta	April 28–May 5	.	89

PLAGUE—INSULAR.

Hawaii, Honolulu	June 4		1

PLAGUE—FOREIGN.

China, Hongkong	April 21–May 8	119	110
Egypt, Beni Souf, Province	May 14	2	..
Minieh, "	May 14–17	8	4
Keneh, "	May 11–17	7	10
Port Said	May 17	..	1
India, General	April 28–May 5	15,892	13,296
Bombay	May 8–15	..	655
Calcutta	April 28–May 5	..	129
Karachi	April 30–May 5	465	413
Rangoon	April 30–May 5	..	66
Japan, Formosa	April 1–30	800	602

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 69, No. 26.
Whole No. 1860.

New York, June 30, 1906.

$5.00 Per Annum.
Single Copies, 10c.

Original Articles.

THE SCIENCE AND ART OF FITTING GLASSES.*

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PROFESSOR OF DISEASES OF THE EYE, NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, ETC.

Since this is the centennial meeting of our society, a brief historical sketch of the progress made in the last hundred years in the science and art of fitting glasses, or of the progress of ophthalmology itself, did time and space permit, is a fitting introduction to my paper. And I may venture to assert that in no branch of medicine in the last hundred years has there been so great an advance as in that of ophthalmology, and particularly in this branch of it, embraced under the term, Errors of Refraction and Accommodation. In fact, it is conceded that the science and art of fitting glasses comes nearer to being an exact science than any other branch of medicine. The laws of physics as regards the refraction of light and the correct focussing of the same on the retina of the eye, so as to form clear images of objects, can be applied with almost mathematical precision. With the eye, however, as with other organs and members of the body, we must reckon with variations within the organism itself, and it is in dealing with this phase of the subject that our skill as oculists is called into action. We need to be more than mere mechanics, trained simply in the laws of optics, but must be thoroughly trained physicians, with a special and complete knowledge of the anatomy and physiology of the eye, in order properly to correct errors of refraction.

In the last one hundred years, yes, less than one hundred years, the science and art of fitting glasses has been developed into almost, if not quite, an exact science. It is true that spectacles were invented as early as the thirteenth century by Salvinus Armatus, or Roger Bacon, it is not certain which; but these were simply convex spherical glasses for the correction of presbyopia, or old sight. At the International Congress of Ophthalmology of 1904, G. Albertotti presented a reproduction of a portrait with spectacles, painted by Tommaso of Modena in 1352 (middle of the fourteenth century). The Emperor Nero is said to have worn concave glasses made of precious stones, to witness the gladiators in the Coliseum. Dr. John Green argues that he had compound myopic astigmatism. However, but little science and less art were used in the selection of glasses at this early date, and the same criticism holds good until about the middle of the nineteenth century, and that even after the invention of the ophthalmoscope, in 1851. As late as 1855, a standard text book, "A Practical Treatise on the Diseases of the Eye," by William Mackenzie, M.D., advises: "When a near-sighted person wishes to be fitted with concave glasses the simplest and surest plan is to try a series of them at an optician's shop." And the same author advises against young people wearing too strong plus glasses for fear that when they grow older they will have to wear entirely too strong glasses. Some rules were given for the tests for glasses, but as the patient himself in a great measure selected the glasses, and as the patient and the optician both were ignorant of the anatomy and physiology of the eye, the science used in such a procedure was mere guess work and the art employed was rank empiricism. Yet, under the circumstances, what more could be expected, when we remember that the art of fitting glasses is a very young one compared with other branches of medicine. It was not until 1801, just 105 years ago, that astigmatism was discovered by that illustrious savant, Thomas Young, who we are told was a celebrated physicist mathematician, and general scholar. But he was something more, *he was a physician.* He studied medicine at London, Edinburgh, Goettingen, and Cambridge, but did not practise his profession. However, in making this one discovery in medicine he has made the human race his debtor.

It remained for Sir George Biddell Airy, the noted English astronomer, to take advantage of this discovery of Thomas Young and to correct his own astigmatism with cylindrical glasses, in 1837. Here indeed was applied for the first time the remedy, cylindrical glasses, for the defect or error of refraction, called astigmatism. It was not until fifteen or twenty years later that oculists had awakened to the fact of the great value of this discovery and began to look for this error of refraction and to apply the proper glasses to correct same. Pertinent to the history of the discovery of astigmatism and its correction by cylindrical glasses, Roosa, in his "Treatise on Diseases of the Eye," page 534, says: "Donders found it remarkable that astigmatism up to his time was almost exclusively treated of in English literature. In Mackenzie's illustrated treatise he found all that was known on the subject, and this had been discovered by Thomas Young and the Royal Astronomer, Airy. The latter had a high degree of compound myopic astigmatism in his own eyes which he carefully investigated. Stokes, also an Englishman, invented a lens for determining the degree of astigmatism. Dr. Goode also reported some cases, one of them, like Airy's, in his own eye. After Goode, Thompson reported cases, also in England. In our own country, Dr. Isaac Hays recorded two cases in an American edition of 'Lawrence on the Eye,' for which the optician McAllister made correcting glasses." He concludes his remarks as follows: "Since but one Continental observer of astigmatism appeared until Donders' time, and he long after the reports of Young and Airy, the credit of preparing the way for the full revelation of the diagnosis and correction of astigmatism, made in Holland, must be given to Great Britain and our own country."

Hypermetropia, that is, far-sight, was discovered in 1812 by James Ware (*Philosophical Transac-*

*Read before the New York State Medical Society, January 31, 1906.

tions) for the Royal Society, London, 1813, and after him, though several years had elapsed, such men as Sichel, Ritterich, Bohm, and Cooper, investigated this condition in a scientific, though imperfect, manner, as must have been the case without the use of the ophthalmoscope. The observations of Professor Dewey of Union College should be given credit here. In an article in the *American Journal of Science and Arts,* Volume III, page 443, November, 1849, hypermetropia is described, in a somewhat imperfect manner, it is true, under the name of *neomacropia.* Prof. Dewey says that the causes of this condition are to be sought in the structure of the eye, and may be due: "First, to too little convexity of the crystalline lens; second, its position too near the retina; or, third, its too little density." The true cause of hypermetropia, shortening of the anteroposterior diameter of the eyeball, he failed to recognize. However, the necessity for wearing convex glasses in such condition was recognized, and attention was called to the frequency of this error of refraction. It was not until after the discovery of the ophthalmoscope, in 1851, and a few years later of the ophthalmometer, both by Helmholtz, that scientific and exact measurements of the different errors of refraction could be made and properly classified. What had previously been guess work and assumption now became a matter of scientific accuracy in diagnosis and rational treatment for the defects found.

And with a proper classification of refractive errors, the necessity for accurately testing the visual power was recognized. Accordingly, in 1854, Eduard Jaegar in Austria, and Alfred Smee in England arranged a set of test types or letters which served fairly well for this purpose. But they were not entirely adequate, as they consisted simply in the arrangement into separate paragraphs of different-sized printed type, from the finest to the very coarse print. No standard was given as to what should be seen by the normal eye, consequently the tests were not very satisfactory. It was not until the year 1868, when Snellen of Holland printed his test types, which were made on scientific calculations, that a strictly accurate record of the visual power could be easily made. These letters were made on the plan of finding the smallest angle in which the form of a given object could be accurately recognized.

In this early stage of the development of this branch of ophthalmology, we are indebted to such men as Brewster, Bowman, Beer, Lawrence, Mackenzie, Stellwag; and, later, to Liebreich, Wecker, von Graefe, Knapp, Landolt, Helmholtz, Donders, and to many other notable men of this period, for much scientific and original work. Donders' epoch-making book on "Accommodation and Refraction of the Eye," in 1864, placed this branch of ophthalmology on a thoroughly scientific basis. And I may remark that Donders' great work is really the Blackstone of this branch of ophthalmology. It is amazing how well he covered the ground in his investigations, and we of later years have but amplified and refined the tests; but no new principles or truths, of history-making importance, have been discovered. Donders clearly showed the causative relation existing between errors of refraction and headaches, and cited cases by way of illustration. (Donders' "Accommodation and Refraction of the Eye," page 233.) The publication of Donders' work created a great stimulus for the study of refraction, both abroad and in this country, but especially so in America. In America, E. Williams of Cincinnati, H. W. Williams of Boston, H. Derby of Boston, Knapp of Heidelberg and later of New York, Agnew, Noyes, Roosa, Loring, Bull, Pooley, Gruening, Callan, Webster, all of New York, William Thompson and Norris of Philadelphia, Noyes of Detroit, John Green and Arlt of St. Louis, Hotz of Chicago, Burnett of Washington, Miles Standish of Boston, Conner of Detroit, Howe of Buffalo, Randall of Philadelphia, and many others whose names, even, space forbids mentioning, we are indebted to for the elucidation and solution of many problems in refraction. To the many younger men who have done excellent work in this line I shall not even refer, first, because their writings are fresh in the minds of my readers; and, second, their number is so great that time will not permit. Suffice it to say, their work is so good that America to-day stands at the forefront in this branch of ophthalmology. And we should not fail to record the fact here that it was Benjamin Franklin who first suggested bifocal lenses—which are often called Franklin lenses. This was in the latter part of the eighteenth century, about 1784.*

Abroad, the most notable advance in the science and art of fitting glasses since Donders' time was that made by Javal and Schiotz, when they rendered the ophthalmometer a practical office instrument. The use of this instrument has practically revolutionized our methods of fitting glasses, at least it has for a great many American ophthalmologists. Instead of using cyclopegics in almost every patient under forty years of age, as was necessary before the ophthalmometer came into use, we are now able to dispense with cyclopegics almost altogether. The perfecting of this instrument for daily use in the office is the one great advance made in fitting glasses since Donders' time. Reid, Leroy, and Dubois have given us ophthalmometers also, but they have not come into wide use. Tscherning has contributed largely to the subject of refraction and physiological optics, *Physiological Optics,* The Keystone Press, Philadelphia, 1900; and Panas, Meyer, Galezowski, Bull, Fuchs, Wallaston, Snellen, and many other notable continental writers, together with Priestly Smith, Nettleship, Story, Lawford, Berry, Hardy, and other notable men whom space alone forbids my naming, all have contributed largely to the subject of refraction.

Ophthalmoscopy.—To Dr. E. Williams of Cincinnati belongs the credit of introducing the use of the ophthalmoscope into this country and also into England. And just here, it is well to mention the fact that the discovery of the ophthalmoscope was fruitful in much more than in placing the subject of refraction on a sound basis. It enabled us, for the first time, to examine the interior of the eye and determine if the media were clear; to discover atrophic states, or grave inflammatory conditions, and to institute correct and prompt treatment for such conditions, to the end that the sight of many eyes has been preserved. But more yet, we are often able, by looking into the eye with the ophthalmoscope, to diagnosticate the presence of the gravest general diseases of the body. For instance, Bright's disease is often first manifested by characteristic changes in the retina of the eye; gray atrophy of the optic nerve is not infrequently the first symptom of tabes; while characteristic changes in the retina are often the first symptom of lukemia, and so on. In brain tumors and brain abscess the ophthalmoscope is often of the greatest value in making or confirming a diagnosis. And in many other diseases, as in arteriosclerosis, the findings of the ophthalmoscope are of the greatest help in arriving at a correct diagnosis. So in every sense of the word the invention of the ophthal-

*Cited by Roosa, from the writings of John Bigelow: The Works of Benjamin Franklin, New York, 1888, p. 55.

moscope can be truly said to be one of the greatest benefactions to mankind.

Ophthalmometry.—Another instrument of the greatest practical importance in fitting glasses is the ophthalmometer. To the same savant, Helmholtz, who invented the ophthalmoscope, we are also indebted for the invention of this instrument, which in importance ranks next to that of the discovery of the ophthalmoscope itself. Helmholtz, as early as 1854, published a description of the ophthalmometer, together with his conclusions as to the exact form of the cornea as measured by this instrument. Donders and Knapp also made careful measurements of the cornea with the instrument. Dr. Swan N. Burnett of Washington was the first American to use the Javal ophthalmometer. As early as 1885 he published a paper in the *Archives of Ophthalmology*, Vol. 14, under the title of "Ophthalmometry with the Ophthalmometer of Javal and Schiotz, with an Account of a Case of Keratoconus." Dr. Henry D. Noyes of New York began using the instrument at about the same time. Both of these instruments were old models. In 1887, Dr. Burnett gave a description of the old model instrument in his "Treatise on Astigmatism," and in the same year, 1887, in the "Reference Hand-Book of the Medical Sciences," Dr. John Green of St. Louis gave a description of the instrument, with a cut. The instrument remained comparatively unknown, however, in this country until 1889.

When the new or "1889 model" came out, it found among its advocates Dr. D. B. St. John Roosa of New York, who was taught its use by Javal himself and George J. Bull of Paris, and who, by his earnest and persistent advocacy of the instrument, especially in the classroom and in the hospital, where practical demonstrations of its use and value were given, did much to bring it into general favor. Other writers in America who have helped to bring the ophthalmometer into esteem are: Speakman, Koller, Ring, Weiland, Van Fleet, Wurdeman, Swasey, Woodward, Valk, de Schweinitz, Norris, myself, and many others. Although very accurate in its measurements, the instrument, as constructed by Helmholtz, was not a practical one. In order to use it the patient was placed six feet in front of it, and from fifteen to twenty readings made; then, before the astigmatism was ascertained, mathematical calculations had to be made. As such, it was used in the laboratories of only a few men, and for strictly scientific purposes. The late E. Dyer of Philadelphia demonstrated the original instrument in America.

It was not until 1880, when Javal and Schiotz made alterations and improvements in the instrument, that it became practical for office use, and it was not until 1889 that they perfected the instrument into its present model. It is an instrument designed to measure the radius of curvature of the cornea in its various meridians. By its use the presence or absence of corneal astigmatism is ascertained; and, if present, it gives the amount and axis of the astigmatism. While it is true that the ophthalmometer measures only the corneal astigmatism and not the total, yet those of us who are most familiar with the use of the instrument have found out by actual, everyday experience in our offices that the corneal astigmatism comprises almost the total amount of the astigmatic error present in the eyes. We know by experience in thousands of cases that the amount of corneal astigmatism corresponds, as a rule, to within .50D of the total astigmatism, and this difference can be found out with the subjective tests, that is, with the test letters and trial lenses, and with the objective tests, with the ophthalmoscope, and without the use of a cyclopegic, except in the very rare cases in which there is spasm of accommodation and in children under ten years of age. And this is one of the greatest virtues of the ophthalmometer, in that it enables us to fit glasses in the great majority of cases without the use of cyclopegics of any kind. Furthermore, ophthalmometry is the most accurate method yet devised for determining the exact axis at which cylindrical glasses shall be worn, which, in my opinion, is one of the most, if not the most, important factor in the art of fitting glasses.

Retinoscopy.—Bowman (Ophthalmological Hospital Reports, 1859-60, page 157) was the first to use the retinoscope for diagnostic purposes, which he did in 1859, in cases of astigmatism and keratoconus. But to Cuiguet of Lille belongs the credit of introducing this method of determining refraction into practice, and without being acquainted with Bowman's observations on this subject. Mengin, Parent, Forbes, Morton, Loisseau, Chernly, were early writers and advocates of this method. This method of determining the errors of refraction was, and is now, extensively employed in England and to a great extent on the Continent, but has not been used in America extensively until within the last few years. The simplicity and cheapness of the instrument are in its favor, also the fact that the total refractive error is measured by its use. Nevertheless, because of the difficulty of acquiring the method of accurately using the instrument, the time it requires to determine each case of refractive error by placing the lenses in front of the patient's eyes to arrive at the correct diagnosis, and, above all, because it requires the eye to be under the influence of a mydriatic before it can be used to the best advantage, it has not met with the widest favor.

Muscle Insufficiencies and Functional Neuroses.—To a thorough study of the ocular muscles and their insufficiencies we are indebted, first, to von Graefe, and after him to Wecker, Javal, Knapp, Maddox, Noyes, Landolt, Roosa, Stevens, Ranney, Worth, Howe, Priestley Smith, Gould, and Savage, together with many other notable workers. Some of these, it is true, especially in this country, made extravagant and unconfirmed claims in reference to the importance of muscular insufficiencies in the production of asthenopia, functional neuroses, and even to constitutional diseases. Of these functional neuroses and other ailments supposed to be due to errors of refraction and insufficiencies of the ocular muscles, a brief notice by way of the history of the subject is necessary here.

Dr. George M. Gould of Philadelphia (*Journal American Medical Association*, January 16, 1904) gives the credit to Savage as being probably the first to call attention to ocular headaches. Following Savage, Heberden (1803) speaks of ocular headaches in connection with overwork with the eyes. Priorry, in 1831, came nearer to describing the true nature of headaches originating from use of the eyes. Many writers after Priorry, as Lawrence, Mackenzie, etc., described the true clinical picture of migrainic headaches, following the use of the eye, but did not recognize them as the true and underlying cause of it, as that of hypermetropia and astigmatism. Donders was the first to recognize the causative relation of hypermetropia and hypermetropic astigmatism to headaches, and to prescribe glasses accordingly, and he cites such cases in his book, "Accommodation and Refraction of the Eye," page 233. Dobrowlsky (*Archiv für Ophthalmologie*, 1868) reported like results, and this same author was the first to call at-

tention to dynamic astigmatism, caused by irregular contraction of the ciliary muscle. In 1869, in this country, Carleton, in an article on the "Use and Abuse of Spectacles" (*Proceedings Connecticut Medical Society*, 1869) cites such cases, and the possibility of cure with correcting glasses. Dr. S. Weir Mitchell of Philadelphia (*Medical and Surgical Reporter*) called attention to ocular headaches which came from some intraocular disorder, or disorder in the motor muscles of the eyeball, and cites cases from the Case Book of Dr. Wm. Thompson, one of hypermetropia and one of myopic astigmatism, in both of which headaches were prominent symptoms, and in each instance relief came with the proper glasses. In the case of hypermetropia the headaches were migrainic in character, beginning with blindness over one-half of the field of vision and ending in nausea and vomiting. In 1868, in the *Journal of Medical Science*, Mitchell again forcibly called attention to the fact that headaches migrainic in character, nausea, vomiting, and vertigo were due to errors of refraction and accommodation, and also that muscle insufficiencies might cause headaches. He says in this article: "What I desire, therefore, to make clear to the profession at large is: (1) That there are many headaches which are due indirectly to disorders of the refractive or accommodative apparatus of the eye. (2) That in these instances the brain symptoms are often the most prominent and sometimes the sole prominent symptom of the eye trouble, so that while there may be no pain or sense of fatigue in the eye, the strain with which it is used may be interpreted solely by occipital or frontal headache. (3) That the long continuance of eye trouble may be the unsuspected source of insomnia, vertigo, nausea, and general failure of health." In 1879, Dr. Wm. Thompson of Philadelphia reports cases in which headaches, nausea, vomiting, and twitching of the muscles of the face were due to errors of refraction, and which symptoms were cured by proper correcting glasses. Many other writers have reported such cases, and emphasized the importance of refractive errors in the production of the same.

It remained for Dr. George T. Stevens of Albany, now of New York, to make the claim that chorea, epilepsy, etc., and functional nervous diseases were due to anomalies of refraction and accommodation, and to difficulties in adjusting the eyes in the act of vision. In his earlier writings (*Transactions New York Academy of Medicine*, Vol. II, page 440) he claimed that it was hypermetropia chiefly that was responsible for these functional nervous troubles; but later ("Functional Nervous Diseases," George T. Stevens, M.D., 1887; also *New York Medical Journal*, page 428) he shifted to muscle insufficiencies as the chief cause, and advised prism exercises, the wearing of prisms, and graduated tenotomies, with which methods of treatment he claimed to cure such functional neuroses. Some of his pupils and others have claimed to cure not only functional nervous diseases, but even grave constitutional diseases. Dr. St. John Roosa and Charles Stedman Bull of New York were the earliest writers to combat Stevens' views. Bull (MEDICAL RECORD, Vol. 12, page 239) as early as 1877 read a paper before the New York Medical Journal Association, entitled "The Connection Between Chorea and Errors of Refraction." In this paper he reports thirty-one cases of chorea, and is unable to trace the causative relations between the errors of refraction or muscle insufficiencies and the disease. Roosa made observations along this line in the same year, and in 1880, in a paper entitled "The Cure of Constitutional Diseases by the Use of Glasses," repudiates the claims made by Stevens. Roosa's views on this subject are so well known it is necessary for me to make but a brief quotation from him, giving his past and present position on this subject: "The belief in any morbid constitutional condition of more than passing nature, being dependent upon an error of refraction or a latent insufficiency of an external muscle of the eye, I could never accept, and my views upon this subject were placed before the profession at a very early date. Time and added experience have deepened my conviction that the cures accomplished by tenotomies and prisms in such cases were mainly suggestive and many of them were illusory, occurring in neurotics who came into the world with an abnormal nervous system, and in whom symptoms are as variable as the changing of the wind." ("Treatise on Diseases of the Eye," page 520.)

In a recent article upon "The Symptoms of Ammetropia,"* Dr. H. F. Hansell of Philadelphia has this to say: "Perhaps the strongest argument that can be brought to weaken the claims of ophthalmologists that many of the functional nervous diseases are due to errors of refraction and muscular anomalies is that the ophthalmologists do not see their failures as often as nerologists see them, and the failures are never published. We read of cures of all kinds of reflexes by glasses, but we do not see records of failures to cure." And again: "We read that 80 percent. of all headaches are ocular. This means presumably that 80 per cent. of the cases of headache applying at the oculist's office are relieved by ocular treatment, and 20 per cent. are not benefited. Of the other cases of headache, those that do not seek ocular treatment, no account is taken."

Another recent writer (Max Talmey, *New York Medical Journal* and *Philadelphia Medical Journal*, December 2, 1905) says: "Certain devotees of ophthalmology surpass those of any other specialty with their wonderful therapeutic achievements by the most simple means. Severe diseases that have persisted for years have been cured by a little operation lasting about fifteen minutes. Cutting of the external eye muscles has removed many ailments. In some instances the simplicity of the remedy for the cure of obstinate diseases that have baffled the skill of the internist and neurologist is nothing short of marvelous. The patient does not even need to undergo the discomfort of swallowing an unpalatable medicine. One prescription for glasses after a short examination suffices to cure a wide variety of grave symptoms, of such diseases even that formerly nobody would have considered as having any relation to a defect of the eyes." And this same author quotes three eminent neurologists to the following effect: "Not less marvelous is the report of the cure of general paresis obtained by the correction of errors of refraction." Dr. Edward D. Fisher, in his illuminating article on "The Value of the Recognition of Errors of Refraction in Functional Diseases of the Nervous System," says: "General paresis is a disease with a known pathological history, inflammatory in character . . . ; and yet cases are recorded of cures of this disease by correction of errors of refraction."

Dr. Charles L. Dana concludes his article on "Eye Strain and the Psychoses" with the following words: "Perhaps, after all, the most real psychosis connected with eyestrain is that shown by a group of enthusiastic oculists who have become obsessed with the idea that eyestrain forms the background of

*Ophthalmology, January, 1906.

most pathological conditions, and, like Bishop Berkeley and his tar water, think that the whole material universe is nothing and eyestrain is everything. With due respect also to my learned colleagues, I should suggest that 'glassing' has become something of, at any rate, a minor psychosis." Similarly flattering to a sort of oculists is the judgment of Dr. B. Sachs. He says: "The relationship between ocular affections and epilepsy, chorea, and convulsive tic may be a close one in the minds of some 'faddists,' but it must remain a very remote one in the minds of those who have no special axes to grind and no particular therapeutic territory to exploit."

But perhaps the position of American ophthalmologists upon this subject is best presented in a very recent paper by Dr. Howe of Buffalo in *Ophthalmology*, January, 1906. Dr. Howe sent out 198 circular letters, 162 of these to members of the American Ophthalmological Society, 8 to oculists not members, and to 28 others, some of whom did not claim to be ophthalmologists, but whom the writer of the "New Ophthalmology" had named as being advocates of the so-called advanced views. The questions were as follows:

1. How many, or about how many, cases of diseases of the eye have you recorded as seen in private and in hospital or dispensary practice altogether?

2. Among them all, how many have you recorded in which "eyestrain" can justly be considered in any way a cause of any one of the following diseases or conditions? (The diseases are selected from the articles on the New Ophthalmology.) Keratitis? Iritis? Glaucoma? Cataract? Choroidal diseases? Hyperemia of the retina? Diseases of the macula in any form? Pigmented retinitis? Other retinal diseases? Sinus diseases? Pharyngitis? Laryngitis? Aphonia? Common colds? Influenza? Pneumonia? Tuberculosis? Anorexia? Denutrition? Intestinal fermentation? Constipation? Disorder of the liver? Dyspepsia? Loss of appetite? Nephritis? Cardiac palpitation? Chorea? Epilepsy? Insomnia? Scoliosis?

Dr. Howe received 150 replies; 24 of these were complete in every particular, while 47 were fairly complete (enough so to draw conclusions from), while the remainder were so incomplete that they could not be made use of.

Of the 24 who made complete replies, 20 had not seen a single case in which the diseased conditions or reflexes mentioned in the circular letter were apparently due to eyestrain. Four of these observers, however, reported that the following were apparently the result of the eyestrain, namely: Choroidal diseases, 3; diseases of the macula, 1; hysterical laryngitis, 1; chorea, 1; epilepsy, 5; insomnia, 12. That is to say, these are all of the diseases or reflexes which were found by these 24 men among about 350,000 cases of refraction or muscular anomalies. What has been said thus far of the results relates only to twenty-four observers. But there were forty-seven others whose testimony is not to be left out of account. They gave approximately their total experience in figures, but they did not answer the other questions with figures. Instead, they were in doubt as to having seen some of these conditions or reflexes (as can occur to any of us), or they reported simply "a few cases" or "many," etc. Evidently it is impossible to make a statistical classification of these replies. But it is possible to classify the doctors themselves. That is to say, it is possible to state how many of the entire eighty-one saw examples of this or that disease or symptom in the list cited, and also what that experience was. This is shown in the following table. "In this the first column gives the number of observers who have not seen any of the reflexes or conditions mentioned in the list. The second column gives the number of those who were doubtful if they had seen any such. The third column, the number who were quite sure that at some time they had observed some such symptoms or conditions; the fourth column, 'A,' the number who had seen 'a few'; the fifth column, 'B,' the number who had seen 'several' or 'some,; the sixth column, 'C,' the number who had seen 'a number' or more.

	None.	Doubtful.	Yes.	A.	B.	C.
Keratitis	64	4	1	2	..	..
Iritis	66	2	..	3	..	..
Glaucoma	60	7	1	3	..	..
Cataract	60	4	1	5	..	1
Choroidal diseases	58	2	3	8	..	..
Hyperemia of retina	46	4	4	14	..	3
Macular changes	60	3	3	5	..	..
Anorexia	67	1	3	..	..	..
Denutrition	66	..	3	2	..	..
Intestinal fermentation	69	..	1	..	1	..
Constipation	67	..	1	3	..	..
Disordered liver	68	..	1	1	..	1
Dyspepsia	60	..	4	7	..	..
Loss of appetite	60	..	4	7	..	..
Nephritis	69	2	..	..	..	..
Cardiac palpitation	65	..	3	3	..	..
Chorea	46	2	4	18	..	1
Epilepsy	55	2	1	13	..	..
Insomnia	49	2	8	10	..	2
Scoliosis	69	1	..	1	..	..

"These data and a more careful study of the answers show: 1. That the personal equation enters largely into these reports. Only comparatively few individuals have seen many such reflexes, while most have observed only a few or none at all. 2. This large experience shows, beyond question, that in the future it will be impossible for anyone to repeat the claim that these reflexes or conditions, or any of a similar kind, are considered by most American ophthalmologists to be the result of eyestrain. That is simply the assumption of a few enthusiasts. 3. An important cause of our confusion is the lack of definition of the morbid conditions under discussion—such terms as intestinal fermentation, disorders of the liver, nephritis, etc., having no definite meaning. 4. Another cause is the lack of exact diagnosis of the condition or the symptom which is suspected to be the result of the eyestrain. One man may call a hyperemia of the retina what another would call normal eye ground."

I have made these rather long quotations to show just how we in America to-day stand on this important matter of refraction. It shows that, while we have a few altogether over-enthusiastic members in the specialty, the great majority of us are on a sane and safe basis and have the correct understanding of the subject. As Hansell aptly puts it: "We have not yet advanced to that stage when we study diseases of the body in relation to ocular defects, and fail to consider diseases of the eye in relation to general diseases." (*Ophthalmology*, January, 1906, page 210.)

The Present Status of the Science and Art of Fitting Glasses.—It may be said without fear of contradiction, I think, that America to-day stands at the head of the medical profession in the science and art of fitting glasses. Abroad, with a few conspicuous exceptions, the oculist devotes most of his energies to the study of the inflammatory and pathological conditions of the eye, and to the operative procedures on that organ. And oculists have given so much time and endeavor to these studies and to the collec-

tion of microscopic and macroscopic specimens that they have neglected in a great measure to give due attention to this less attractive but equally important and practical branch of ophthalmology—the art of fitting glasses. Javal and Bull of Paris and the two Snellens of Utrecht are among the brilliant exceptions. In America, on the other hand, especially in the last fifteen or twenty years, the closest attention has been given to the study of anomalies of refraction and accommodation. Much consideration has also been given to the subject of muscle insufficiencies, not only relative to the eye symptoms present, but to their bearing on the general health and comfort of the patient. To such men as Knapp, Roosa, Loring, Noyes, Stevens, Bull, Gruening, Agnew, John Greene, H. Derby, William Thompson, Gould, Burnett, Myles Standish, Alt, Jackson, etc., and to many younger men, whom space forbids to mention, though they have done much good and conscientious work in this line, we owe the present advanced and perfected state of this branch of ophthalmology.

To the neurologists we are indebted, too, especially to S. Weir Mitchell of Philadelphia, who, though not an oculist, was one of the very earliest observers to call attention to the fact that in many instances headache, insomnia, vertigo, nausea, and other nervous symptoms were caused either by refractive errors or ocular insufficiencies. It is true that in some instances a great deal too much has been claimed for the rôle played by the so-called eyestrain as a cause of functional nervous troubles and of other ailments of the human body. But these extravagant claims are soon shown not to be based on fact, and although temporary harm may result, in the end it is only the truth which prevails.

In America we are divided as to the importance of the rôle which muscular insufficiencies play in the production of asthenopia and functional neuroses. Individually, after giving it thorough study and trial, I place but little importance to the insufficiencies of the ocular muscles in the production of asthenopia, and for that reason shall give it but little space in this paper, but shall direct my efforts to the proper technique in the correction of errors of refraction and accommodation.

In this country, too, it may be stated that there is a division of opinion as to the necessity of the use of cyclopegics in testing for errors of refraction. I am one of that number who believe their use is seldom called for in patients over ten years of age. I have come to this conclusion after thoroughly testing both methods, that is, with and without cyclopegics. In children under ten years of age, the mentally deficient, and in rare cases in which spasm of the accommodation is present, I use a strong cyclopegic, but in no other cases. I have better results and change fewer glasses when following this method than when I used cyclopegics as a routine practice. And we must be guided by our experiences and results, for it is results after all that we are looking for. If we are to arrive at a proper conclusion as to which is the best method, we should report our failures as well as our successes for the different methods, which I propose to do in this paper. Furthermore, I shall try to tell the truth, that my confreres may compare these results with their own, to the end that the most direct method may finally be adopted.

The Different Tests Usually Employed in Fitting Glasses.—These are twofold: Objective and subjective. The objective tests are, first, the use of the ophthalmoscope; second, the use of the ophthalmometer; third, the use of the retinoscope. The subjective tests are made by means of test letters and test types (Snellen's and Jaeger's are standard), astigmatic charts and letters, with the assistance of trial lenses and prisms, kinescopy, and tests based on Schreiner's experiment.

After the refractive error has been corrected, and with the trial lenses in position in the trial frames, tests for insufficiencies of the ocular muscles are made by means of a candle for the distance, or a dot on a sheet of white paper for the near point, and with the aid of prisms, the phorometer, or tropometer. My own method of procedure in the ordinary refractive cases is as follows: First, use the ophthalmometer; second, use the trial lenses and test cards; third, use the ophthalmoscope; fourth, if after two tests on different days the result is still unsatisfactory, employ a cyclopegic and use the retinoscope in addition to the other tests. The reason that I do not, as a rule, use the ophthalmoscope before testing with the trial lenses is that if light is thrown into the eye for a prolonged time, it dazzles the sight and impairs the value of an immediate test with the trial lenses. If I have much trouble, however, in finding the proper glass, I do not hesitate to use the ophthalmoscope to find the nature of the error of refraction, or if any pathological condition of the eye exists; then let the patient wait a short while before the subjective test with the trial lenses is again undertaken.

Simple cases of hypermetropia and myopia are usually easily fitted with glasses; but a certain definite method should be followed even in these cases. It is the astigmatic cases that give most trouble, and among these, as is well known, the compound hypermetropic and mixed astigmatisms are the most difficult to fit. Astigmatism is the thing of most importance in the correction of errors of refraction, and I invariably correct the astigmatism first, unless there is a large amount of spherical error present, with only a small amount of astigmatism. In such cases, part of the spherical error is first to be corrected, in order, if possible, to bring up the vision sufficiently, so that the eye will appreciate any further change in acuity of vision when a weak cylindrical glass is placed in front of it.

I always begin my test by putting on plus glasses; plus cylindrical glasses if astigmatism is present, plus spherical glasses if astigmatism is absent, and for the following reasons: first, because we do not know if the patient is hypermetropic or myopic. If the patient happens to be hypermetropic, and minus glasses are first tried, the patient many times accepts them, especially if the error is of low amount, though the patient is really hypermetropic. The eye instinctively makes an effort to overcome minus glasses when placed in front of it, the ciliary muscle is thrown into a spasm of accommodation, producing an artificial myopia, which the minus glass partly or wholly corrects, and in this way apparently improves vision. The mere fact that a patient accepts minus glasses is no indication whatever that he has myopia. Furthermore, minus glasses should never be tried until plus glasses have been tried, unless we know beforehand that the patient is really myopic, for they tend to incite a spasm of accommodation, which is the very thing we wish to avoid.

The thing of next importance to plus glasses in beginning a test is that we shall begin with the weakest lenses in the trial case, and go up gradually. I do this also to avoid spasm of accommodation, for by adding a quarter of a diopter at a time the eye accustoms itself to it, and the ciliary muscle relaxes gradually, if it is only given a chance. Should all, or almost all, of the correction be put on at once, however, the change for the eye is so sudden and marked that it will not adjust itself to it;

whereas, had the glasses been gradually increased in power, the ciliary muscle would have relaxed. This is my experience, and I believe it accords with that of the great majority of observers. By following this plan, spasm of accommodation, if present, can, in the great majority of cases, be overcome, and, if not present, the liability of causing it be avoided.

After using the trial lenses, I next take the patient into the dark room and examine with the ophthalmoscope. If this test confirms approximately the test with the ophthalmometer and trial lenses, I then, with the glasses in position, test for muscle insufficiencies, by the simple prism test—that is, for adduction, abduction, circumduction. In this way the relative strength of the muscles is shown, and if insufficiencies are present the indication for treatment is suggested. If the simple prism test is not satisfactory, I find the amplitude of convergence, after Landolt's method. For functional insufficiencies of the ocular muscles I rely wholly on correcting refractive errors properly, general tonics, and rest, for a cure. If not relieved in this way, and the insufficiency progresses into a strabismus, I perform a complete tenotomy of the opposing muscle. I have long since given up graduated tenotomies, prism exercises, or even the prescribing of prisms in these cases. As a matter of fact, I remove almost daily glasses with prism combinations in them prescribed by other oculists, and place in their stead simply the correction of the refractive error; and these glasses, with the proper constitutional treatment, give relief in the great majority of cases. Prisms do not afford, but for a brief space of time, relief in functional ocular insufficiencies. On the contrary, they only make matters worse. In my experience, in those cases in which prisms have been of benefit—and the number is exceedingly few—the insufficiencies were not functional, but, in my opinion, were due to anatomical anomalies, or to a true paresis of the muscle. The anatomical anomalies were an actual shortening of a muscle or a faulty attachment.

If, after two tests for glasses without the use of cyclopegics, the tests are unsatisfactory and do not correspond—that is, if there are evidences of spasm of the accommodation—manifested subjectively by the patient first accepting a certain glass and then rejecting it, by the patient being able to read certain letters at one time, and in a few minutes having them fade from vision; or, objectively, when the ophthalmoscope shows a large amount of latent hypermetropia, which was not manifested by the subjective test, I use a cyclopegic, a strong one, and employ retinoscopy in addition to the other tests. Retinoscopy is a thoroughly reliable test after a cyclopegic has been used, but not before. As I now seldom use cyclopegics, for that very reason I rarely employ the retinoscopic test. Formerly, when I used mydriatics in all cases under 40 years of age, I made use of this valuable test. It can be practised with a concave or a plane mirror. The plane mirror with a small sight-hole, two millimeters in diameter, not cut through the glass, is the best one to employ. One meter distance should separate the observer and the patient, and the light should be as near the observer as possible (4 or 5 inches). The whole test depends on finding the point of reversal of the fundus reflex or illumination. If this point of reversal is not within the meter distance separating the patient and the observer it should be brought there by placing convex glasses in the trial frames which are on the patient's face. The glass required to just reverse the motion of the shadow expresses the nature and degree of the error of refraction, after adding one diopter negative glass to the findings. For example, if it takes a + 4 D. to reverse the image in a certain case we have but three diopters of hypermetropia, as minus 1 D. added to + 4 D. gives + 3 D. On the other hand, if it requires a minus 4 D. to reverse the image we really have a myopia of 5 D. present, as minus 1 D. must be added to the glass already found. A good plan, as Dr. Thorington suggests, is always to add minus 1 D. to the neutralizing glass found in the dark room. When the concave mirror is used in retinoscopy, the light must be placed beyond the patient's head; and in this instance the motions of the shadow in the different refractive errors are just the reverse to those observed when the plane mirror is used. The advantages of retinoscopy as an objective test are: First, cheapness of equipment; second, it measures the total refractive error; third, in common with the other objective tests, in the mentally defective, illiterates, etc., we do not have to depend on the answers of the patient. Its disadvantages are, first, a mydriatic must be used in most cases in order that the average observer may use the test correctly; second, uncertainty of finding the exact axis of the cylinder to be worn, which is a very serious objection. Dr. Thorington's axonometer does away with this objection to a certain extent; but in this respect—that is, finding the axis at which cylinders are to be worn—the retinoscope is far inferior to the ophthalmometer. I have found the most important thing in correcting astigmatic errors is to find the correct axis at which the cylinder should be worn. The amount of astigmatism, as a rule, can be found out without the use of a cyclopegic. The ophthalmometer is superior to the retinoscope in these two important respects: First, in finding the correct axis at which the cylindrical glass is to be worn; second, in that it enables us to fit glasses without the use of a mydriatic or a cyclopegic in the great majority of cases; third, in a minor respect that the test for glasses can be made much more rapidly with the use of the ophthalometer than with the retinoscope. A no inconsiderable advantage, however, when we remember the value of time to the busy practitioner.

The ophthalmometer is inferior to the retinoscope: First, in respect to cost, it being an expensive instrument; second, in not indicating the total refractive error present. Relative to the last disadvantage, in my experience, it is only in exceptional cases that we need to take into account the total refractive error in order to give the correct glasses. These are cases of spasm of accommodations, mentally deficients, and amblyopics, and in these exceptional cases the retinoscope is of the greatest advantage, and it is in just these cases that I make use of it; because here we must use a cyclopegic. But in the great majority of cases it is necessary to correct only the astigmatism and the manifest spherical error, in order to obtain relief from asthenopic symptoms. Astigmatism is the most important factor in the causation of asthenopia, and with this properly corrected, together with the manifest spherical error, the latent error may be neglected without harm, and to my mind with benefit. All the tests must be used in such cases, especially the objective tests. And this brings me to a consideration of the use of mydriatics, and cyclopegics in fitting glasses.

Shall We, or Shall We Not, Use Cyclopegics as a Routine Practice in Fitting Glasses?—In answer to this question, my reply is emphatically in the negative. It is neither necessary or desirable to use cyclopegics as a routine practice; they should be

used only exceptionally. I have come to this conclusion after having thoroughly tried both methods. As I have already said earlier in this paper, we must judge of the efficacy of any method by the results obtained, and my results have been better without the routine use of cyclopegics than with them. That is, I have changed fewer glasses and given better satisfaction to my patients without than with the use of cyclopegics. If I am compelled to change a pair of glasses within six months after having prescribed them, I count it as a mistake made by myself. When using cyclopegics, the tendency was always to overcorrect the spherical error of refraction, that is, to give too strong plus glasses in hypermetropia, with the result that the glasses at times had to be weakened, at least the spherical part of the glass. And this same error or mistake is now being made by my confrères who use cyclopegics as a matter of routine, if I may judge of cases that come to me with unsatisfactory glasses. Nine-tenths of these cases have too full a correction. Perhaps my patients, whom I now fit without the use of cyclopegics, and who go to someone else, must have their glasses increased in strength. All I can say is, the unsatisfied ones of my own fitting, who come back to me, even where I fit without the use of a cyclopegic, have been over-corrected, as a rule, and not under-corrected. I have taken the trouble to inquire of a few of the leading opticians in New York City what was the nature of the change most frequently made in the glasses when they were not satisfactory to the patients. Not in the patients of any one oculist, but of them all, just as they were sent to the stores. The answers of these men were to the effect, to use the words of one of them, "Almost invariably we have to reduce the strength of the glasses." Especially in this so with plus glasses. In other words, when a mistake is made in fitting glasses it is usually by ordering too strong a glass.

Then we must consider the danger of using cyclopegics, even the milder ones, in people over forty years of age, as is recommended by many oculists. Now and then the use of a cyclopegic brings on an attack of glaucoma, rarely, of course, but nevertheless it does. Why, therefore, should we unnecessarily sacrifice vision, even in a single instance? The use of cyclopegics for refractive purposes, in people over forty years of age, is not only absolutely unnecessary, but is not without danger. Furthermore, consider the inconvenience to the patient with his eyes disabled from three to ten days. Picture the clerk, the seamstress, the business man, the professional man, disabled this length of time. Then we wonder why patients go to opticians, not poor patients alone, but people who do not have to consider the oculist's fee, but who *will not* submit to the discomforts of cyclopegics. Perhaps one-half of all patients with refractive errors go to opticians to be fitted for glasses; and cyclopegics, unnecessarily used, in my opinion, more than all other factors combined, are the cause of this anomalous state of affairs.

The Adjustment of Glasses.—All the good work of a carefully conducted examination may be brought to naught by having the glasses poorly or improperly adjusted on the patient's face. The prime considerations in the adjustment of glasses are: First, that the lenses should be properly centered in front of the eyes, the center of the glasses corresponding with the visual line (the center of the pupils will do), if the glasses are to be worn for distance; or with the centers of the glasses slightly to the nasal side of the center of the pupil (one to two millimeters) if for reading or near work. A compromise between these two positions should be made if the glasses are to be worn all the time; second, the plane or face of the glass should be perpendicular to the visual line. In distance glasses the face of the glass should be perpendicular, while in reading glasses it should be tilted forward from the perpendicular from five to ten, or even fifteen, degrees; third, the nearness of the glass to the eye must be considered. Glasses should be worn as close to the eye as possible, not to touch the eyelashes. A wider field of vision is obtained in this way. The diameter of the glass should be large enough so that the patient does not see through the edge of the glasses. Spectacles are usually to be preferred to nose glasses, if the patient can be induced to wear them.

Bifocal lenses require a special care in their adjustment, and often then patients are unable to wear them. Of late years invisible bifocals have been introduced. These are made by grinding out of the distance lens a certain amount of glass near its lower border, and in setting into this space a glass of higher index of refraction. In this way a greater refractive power is obtained, which serves for reading purposes. I may say that the cosmetic effects of these invisible bifocals are very good indeed, but the price of the glass is greatly increased.

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WHAT HAS SURGERY LEFT TO MEDICINE IN THE TREATMENT OF PERITONITIS IN ADULTS AND CHILDREN?*

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Those who have practised medicine for the past score of years have seen the domain of surgical therapy constantly enlarging, with a corresponding restriction of the field of purely medical treatment. In most cases, however, it will appear on investigation that surgery has not supplanted medicine in cases in which the latter was therapeutically effective, but in only those diseases in which it offered but faint hope of a cure. In no condition has this been more marked than in the treatment of peritonitis. The hesitancy with which the surgeon invaded the peritoneal cavity twenty years ago is more than equaled by the readiness with which he explores, repairs, and removes therefrom diseased and offending structures at the present time. The peritoneum is no longer "forbidden ground." Aseptic surgery and improvements of surgical technique have done so much in the successful prevention and treatment of peritonitis that a discussion of the medical treatment of peritonitis should properly be limited to a discussion of such treatment as applied to non-surgical forms of peritonitis and such types of peritonitis as, while amenable to surgical measures in their inception, have progressed beyond the aid of surgery.

But even in these cases so little does medicine offer, in effective therapy, that the physician frequently permits the surgical exploration of a given case of peritonitis in the hope that it may after all be a type of peritonitis amenable to surgical measures. To-day the physician keeps from the surgeon cases of peritonitis with far more hesitancy than was shown in the invasion of the peritoneum by the surgeon twenty years ago.

What, then, are the types of peritonitis which are

*Read before the Medical Association of the Greater City of New York, April 10, 1906.

not amenable to surgical treatment and what can we do for these medically?

In this connection it will be profitable to classify the various forms of peritonitis occurring clinically into diffuse and circumscribed, acute and chronic. To these most obvious factors in the clinical recognition of a peritonitis it is of importance from a therapeutic standpoint to recognize in a given case whether the pathological process is aseptic or nonpurulent, otherwise known as a fibrinous or serous peritonitis, or whether the process is a septic peritonitis with the presence of pathogenic bacteria as more than an active factor in the inflammation. Finally, belonging to a class by itself and especially interesting from a medical standpoint, the peritonitis due to a specific organism—tuberculous peritonitis. But even when a peritonitis has been classified in accordance with these factors there remains still to determine the point of origin of the peritonitis. From a therapeutic standpoint this factor is perhaps the most important, for its solution, when practicable, carries with it the determination as to whether the case be one in which surgical and operative procedures are the only logical therapeutic measures, at least at the beginning of the peritonitis or even as a prophylactic measure to prevent a peritonitis, or whether the case is properly a medical one, the inflammation to be combated by medical means, surgery in such case offering nothing in prevention or cure of the inflammatory process. Such an etiological classification, if I may call it so, would include:

1. Peritonitis due to rupture or perforation of the hollow viscera—stomach, intestines, appendix, bladder and gall-bladder. This includes gunshot and other wounds as well as autochthonic perforation.

2. Peritonitis due to the spreading of an inflammation by contiguity from localized inflammations of the hollow viscera. A prominent example is the peritonitis accompanying non-suppurative and nonperforative appendicitis, and non-suppurative disease of the gall-bladder.

3. Peritonitis due to (a) suppurative disease of the liver, including echinococcus, cysts, (b) nonsuppurative disease of the liver, such as malignant liver, etc.; (c) subphrenic abscess.

4. Peritonitis due to suppurative or nonsuppurative disease of the kidney and ureters.

5. Peritonitis due to suppurative and nonsuppurative diseases of the pancreas and its ducts.

6. Peritonitis originating in septic or nonseptic diseases of the uterus, Fallopian tubes, ovaries, and vagina, including pelvic peritonitis as far as it affects the peritoneum.

7. Peritonitis due to neoplasms, aneurysms, and ruptured blood-vessels.

8. Peritonitis secondary to surgical operations in which the peritoneal cavity has been invaded.

9. General peritonitis, primary or complicative, of hematogenous origin, *e.g.*, the peritonitis of scarlet fever, pneumonia, rheumatism, gonorrheal peritonitis, etc.

10. The chronic peritonitis due to a specific organism, of which the chief example is tuberculous peritonitis originating in the lymphatic glands and vessels of the abdomen, or at some local site.

It will be seen that in by far the largest portion of these kinds of peritonitis, the mere recognition of the point of origin of the peritonitis at its inception necessitates surgical intervention, and even at any stage, provided the condition of the patient is such that surgical interference still offers a faint hope of success. Thus I believe that a peritonitis due to a perforation of a hollow viscus, provided the diagnosis be beyond question, is to be treated surgically. Of this there is no question, and reports of an occasional case of recovery from such perforation, under medical treatment, as for instance in the case of a peritonitis following a typhoid perforation, should not serve as an excuse for advising or keeping such patient under medical treatment.

But medicine has a legitimate and important function even in these typically surgical types of peritonitis, and that is the prophylactic one—the prevention of the perforation.

It has frequently been a source of surprise to me that perforations of typhoid ulcers are so much rarer in private practice than in hospital work. In a large private practice extending over almost twenty years, in which I treated at least the average number of typhoids, peritonitis due to the rupture of a typhoid ulcer has occurred very rarely. Indeed I can recall it only in about five cases. On the other hand, some years ago out of about 36 typhoid cases seen in hospital practice in a period of two months, four cases of perforation occurred. I suspected that possibly there might be a physical reason for this. I wondered how important an etiological factor in the rupture of these ulcers the examination of the abdomen of a typhoid by the many physicians connected with the house might be. I hinted at such a suspicion to some of the house officers; it was scouted. I was reminded that these perforations were occurring all over the world; that all institutions were reporting large numbers of them; that the reason they were recognized in hospitals was because the means of accurate hourly observations were at hand; that the rise in the leucocyte count so characteristic of a perforation was there readily appreciated even when pain and severe shock were absent; that the frequent examinations and charting of the area of liver dullness in a hospital record enabled us to appreciate the diminution of the liver and splenic dullness long before they had entirely disappeared, as would be the case in private practice. All this and more. But, nevertheless, keeping in mind the thinness of the floor of some typhoid ulcers which I have seen at autopsy, I have steadfastly and firmly interdicted the indiscriminate palpation of the abdomen in typhoid cases. The spleen once palpated and recognized by the fingers of the attending and house physicians, no others should be permitted to palpate the abdomen of a typhoid case, which needs but infrequent and then only the most expert percussion and palpation. The recognition of other abdominal conditions in these cases is best accomplished by the sensitive tactus of the experienced physician, and even this only when absolutely necessary. Typhoid patients as far as their abdomens at least are concerned, are not to be exploited for the furtherance of medical education. I think it will be found that hospitals connected with teaching institutions both at home and abroad, are apt to encounter this complication far more frequently than others not so favored and very much more than patients treated in private practice.

While we are upon this subject of prophylaxis it is well to remember that in this, medical means play an important part in the timely recognition and cure of conditions which would ultimately lead to virulent types of peritonitis if allowed to develop and go untreated. Thus the recognition and cure of ulcers of the stomach, duodenum, colon, and rectum, the early recognition of an appendicitis and the submission of it to a surgical operation before a suppurative peritonitis has developed; the recognition of cholecystitis in its early stages, of impacted calculi, of hepatic abscess—of all these when recognized by medical diagnosis and sent to the surgeon

in time are operated without the likelihood of the development of peritonitis. Prophylaxis in obstetric practice in accordance with the principles of asepsis has made puerperal peritonitis an exceptional instead of a frequent disease. The medical means used in the prevention of general toxemia and sepsis in acute types of pneumonia, scarlet fever, diphtheria, and rheumatism, and other infectious diseases, are prophylactic as well as curative in the prevention of septic and toxic peritonitis as a complication of these diseases. A great factor in such prophylaxis lies in the conservative use of saline cathartics, such as the sulphate of magnesia. The intestines are emptied, meteorism is to that extent prevented, autointoxication does not so readily occur, the pressure of tympanitic intestines against the diaphragm with the interference in the functions of the lungs and heart is obviated, and the return circulation through the veins to the right heart is not impeded—all of these benefits, with many others, accomplished by such simple means as catharsis.

The types of peritonitis included under the second group—those due to the spreading of a peritonitis by contiguity from more or less general or localized inflammations of the hollow viscera, such as for instance the peritonitis common in infants and children, complicating gastroenteritis or enterocolitis—are, as a rule, examples of acute diffuse peritonitis of a nonpurulent type, and such cases are to be treated by the medical means of which I shall speak later, and are in no sense a field for surgical interference. Nonsuppurative local peritonitis complicating nonsuppurative chlelithiasis, and nonsuppurative hepatitis are not necessarily surgical types of peritonitis, although many surgeons believe that every case of cholecystitis due to cholelithiasis should be treated by removing the calculi. And yet this practice has only developed in the last decade; before that we constantly saw such nonsuppurative inflammations subside under the influence of local and general medical measures. And even to-day it occasionally happens to me to see appropriate cases in which I have advised a cholecystotomy or cystectomy refuse to submit to such operation and recover under the medical means that I apply under protest, or some colleague applies with or without protest. They get well of the peritonitis and the cholecystitis and retain their lithiasis. Indeed peritonitis due to nonsuppurative disease of the liver, kidneys, spleen, and even pancreas, subsides under appropriate medical measures if the inflammatory disturbance in the originating viscus is amenable to such measures. Suppurative diseases of these viscera, however, require surgical interference.

I believe that puerperal peritonitis should not be treated by laparotomy. I am sure from a large experience in the medical treatment of such cases that the results even in very severe cases are better than the results reported by laparotomists. The disease is eminently a general septic disease with a local origin. When peritonitis has developed, the removal of the uterus does not diminish the general septicemia. I think the consensus of opinion is in favor of treating puerperal peritonitis with or without septicemia by medical means. I would not exclude from such measures the medication and curetting of the endometrium. By purely surgical measures I mean laparotomy and removal of the uterus or uterus and adnexa.

Peritonitis secondary to surgical operations, as well as peritonitis which has not been relieved by surgical operations looks to medicine as its *dernier resort*. However hopeless the outlook, measures of a medical nature can be applied for alleviation and sometimes an unlooked-for cure. Peritonitis hematogenous in its origin, generally nonsuppurative, complicating infectious diseases, must be treated medically. And finally, tuberculous peritonitis is by many considered a surgical affection; by others of equally competent authority it is claimed that results are better from nonsurgical interference. When we have arrived at a specific for tuberculosis I think that there is no question that this type of peritonitis will be purely medical. At the present time even those who laparotomize cases of tuberculous peritonitis do not recognize in this operation *per se* any curative effect such as that readily appreciated in the purulent peritonitis complicating purulent appendicitis for instance. The surgeon simply finds empirically that cases thus laparotomized, at first under a mistaken diagnosis, mysteriously improve and some get well. I believe that the best explanation of such surgical cures of tuberculous peritonitis is on the basis of Metchnikoff's theory of immunity and cure in infectious disease processes. The incision through the abdominal parietal peritoneum in these cases brings to the field of operation a large excess of leucocytes, which exercise their phagocytic activity, destroying the tubercles and bacilli and setting up a reparative process.

Now as to the question of what medicine can do for the nonsurgical types of peritonitis.

First of all, as to serum therapy in these hopeless cases of peritonitis. In this connection it will be interesting to remember that the bacterial organisms found in various types of peritonitis are very numerous. In some cases and stages of the process the bacteria are found in almost pure culture, but in by far the larger majority they are present as examples of mixed infection. The most frequent bacteria found in peritonitis, whether of the adhesive or of the purulent type, are the *Streptococcus pyogenes*, the *Bacillus coli communis* and the *Diplococcus pneumoniæ;* in chronic peritonitis the tubercle bacillus. In very young children there is an extremely fatal type of peritonitis in which immediately after death the *Diplococcus pneumoniæ* can be isolated from the peritoneum in almost pure culture. This is a type of peritonitis which does very badly when submitted to surgical interference. Such cases when operated under a mistaken diagnosis of appendictis generally die. I have no doubt that many of the cases of peritonitis in infants that recover under medical treatment are of this type in which the bacteriological diagnosis has not been made. This form of peritonitis often occurs in such children independently of pneumonia, is more frequent in girls than in boys, and this is accounted for by the ease of entrance of the organism into the peritoneum through the vaginal-uterine-Fallopian route. The cases are frequently mistaken for appendicitis because this type of peritonitis is generally limited to the lower regions of the abdomen. *Streptococcus pyogenes* is found in almost every kind of acute purulent peritonitis and is especially of importance in puerperal peritonitis; while *Bacillus coli communis* is almost omnipresent in the peritonitis of intestinal origin, including appendicitis, the peritonitis accompanying wounds and ruptures of the intestines, volvulus, intraabdominal and hernial intestinal strangulation, etc.

The types of the peritonitis due to the streptococcus, especially puerperal peritonitis, have been treated in recent years quite generally with an antistreptococcus serum together with other means. Some authorities believe there is some efficacy in such treatment. I do not think that we have any

reason logically to expect that any of the bacteriolytic sera have much curative power, depending as do they for their action not only upon the antibodies which they contain but also on the presence of the unstable alexin or complement present in limited amounts in the body of the patient. The bacteriolysis is therefore so limited that but small amounts of bacteria are destroyed by even the largest possible doses of such sera, which are insufficient to cure the bacterial infection. Nevertheless such antistreptococcus serum in the treatment of general peritonitis of the puerperal variety I have used, and have seen cases recover. I am disposed to think that they would have recovered from the other means instituted as well. I generally inject this serum (Marmorek) in doses of 20 c.c. twice a day until I have injected 150 to 200 c.c. As far as the other two bacteriological types of acute peritonitis are concerned, the coli and the pneumococcus type, I know of no cases having been treated by serum therapy. The tubercular peritonitis might logically be treated by the modified tuberculin of Koch. I have seen no cases thus treated. For diagnosis the Koch tuberculin can be used in doubtful cases with no temperature or very slight temperature. An acute rise in temperature after the injection would speak in a diagnostic way in favor of tubercular peritonitis.

The purely medical treatment of peritonitis is best considered from the standpoint of the treatment of acute general peritonitis. First then in a given case is the diagnosis. By that I do not mean the recognition of the fact that a peritonitis exists, but as far as possible the cause in the given case of the peritonitis that is present. In what organ or at what site did it originate? The patient's history will frequently be of but little assistance. In infants the complicating type, and the independent pneumococcus type are frequent. In young women peritonitis from the internal sexual organs is not rare, and some of them carefully conceal this etiological factor. A general inquiry as to the causation of every case is absolutely essential, for upon this determination depends to a great extent the important fact as to whether the case should be treated surgically or by medical means. Having determined that the case is a proper one for medical treatment, we are immediately confronted with the prime necessity, as far as the patient is concerned, of relieving pain. For this purpose I use morphine by hypodermatic injection. I give sufficient to control the pain, but no more than this. I am cognizant of the fact that this by no means answers the requirements of the old-fashioned opium treatment of peritonitis, with which the name of Clark was identified, in this city, more than a score of years ago.

My admiration for Alonzo Clark does not blind me to the fact that the treatment of peritonitis in the presurgical days included the treatment of a vast number of cases of perforative peritonitis complicating the unrecognized suppurative appendicitis, and that in such cases the pushing of opium to the point at which all peristalsis ceased was all-important. It prevented the further soiling of the peritoneal cavity by the pouring out through the perforation of intraintestinal contents and pus, and the breaking of the adhesions by which nature attempted to close such perforations. But at the present time such perforative cases are treated surgically, and for the medical cases of acute general peritonitis the absolute cessation of *all* peristalsis to the point of paralysis is not of unmixed advantage. It increases the constipation, intensifies the paralytic condition of the bowels, aggravates the meteorism, encourages the vomiting, and it paralyzes by the pressure of the inflated intestine the diaphragmatic movements. Absorption of pathological products from the peritoneum depends upon the capillaries, lymphatics, cellular activity of the peritoneal endothelium, and pneumatically upon the excursions of the diaphragm. So that the absolute paralysis of peristalsis and great diminution of the extent and frequency of the diaphragmatic movements discourage the absorption of pathological products from the peritoneum.

I would not, however, be understood as claiming that it is desirable in peritonitis to increase peristalsis. Far from this. But we must face the problem, weigh the dangers and the advantages of the effects which we desire to produce in a given case and employ the means capable of accomplishing them. I feel, however, that the opium treatment as pushed to the extreme has no place in the modern therapy of peritonitis. Nevertheless the intestines must be kept quiet, for increased peristalsis due to catharsis spreads the pathological process through unaffected areas of peritoneum, breaks up adhesions and does infinite harm. So that cathartics, except in the first and incipient stage of the peritonitis, are contraindicated. In this respect my experience has shown a decided improvement following the use of a brisk cathartic in the threatening peritonitis complicating any ileocollitis. I have already referred to the admirable effect of cathartics at the incipience of a pelvic peritonitis and sometimes of a puerperal peritonitis. I repeat, however, that such measures are to be used only at the very beginning of the peritonitis. The best cathartics for this purpose are the saline cathartics—Epsom and Rochelle salts, in divided doses. In adults 1 dr. every 15 minutes in hot water until 4 to 6 doses have been taken, or a calomel series of ½ gr. every quarter hour until 5 grs. have been taken. This method of treatment of incipient peritonitis has many advocates in this country and England.

In cases of peritonitis which I have believed rheumatic in their origin and also in other cases of acute, general nonsuppurative peritonitis in adults and children, I have used in the past few years rectal injections of sodium salicylate; in adults 1 dr. once a day in a half pint of warm water injected high up in the rectum; in children a year old, 3 to 5 grs. in one ounce of water. I have seen cases of this type improve remarkably under these injections, and while in rheumatic peritonitis the etiological connection between the remedy and the beneficial result is evident, the well known antiseptic powers of the salicylate salts might explain the beneficial effects in the other cases.

As far as the general septicemia and toxemia are concerned we can do as little here as we can do for these conditions in other diseases. My friend, Dr. Alfred Meyer, is fond of using the unguentum Credé in septic diseases of various nature—pneumonia, cerebrospinal meningitis, etc. In two cases of peritonitis (puerperal) recently seen by me daily inunctions of appropriate doses (ʒss. twice a day for four days in thighs and buttocks) were ordered as part of the treatment. One of the patients recovered. It is a remedy easily applied and surely does no harm. On the other hand I am disposed to be more enthusiastic concerning hypodermoclysis with physiological salt solution into the breasts and thighs, especially in septic peritonitis, and more especially when it complicates the infectious diseases such as scarlet fever, pneumonia, etc. As to the modus operandi of this remedial measure let us not inquire on this occasion too closely. Does it dilute the poisons in the blood? Does it enable the kidney by diuresis to excrete more of the toxic materials from

the body? Does it act as a heart stimulant? All of these suppositions might explain the undoubted beneficial effects of the measure. Such hypodermoclysis, or venous infusions are also frequently made use of by the surgeons in the treatment of their cases of suppurative general peritonitis before or after operation, with markedly beneficial results, and some surgeons recommend the performance of such transfusions immediately before operating for peritonitis.

I need scarcely mention that patients with peritonitis are treated by absolute rest in bed and are to be kept on fluid diet. Indeed if there is much vomiting they are best maintained by rectal feeding. I have been in the habit of further alleviating the pain of peritonitis by the application of the Leiter Coil with ice water. The ice bag is absolutely contraindicated on account of its weight and bulkiness. I have tried in former years hot applications and poultices over the abdomen, and find that they make most patients uncomfortable besides weakening them by the perspiration which they encourage. I do not, however, think that the cold coil has any antipyretic effect, and I am sure it has no prophylactic action in the prevention of a peritonitis. Blistering the surface of the peritoneum is of doubtful efficiency. Although where the area affected is limited, as in pelvic peritonitis (lower abdomen) I use blisters I believe with benefit. The theory of phagocytic action explains the undoubtedly beneficial effects which they exert upon inflammatory processes.

The measures I have mentioned are intended to antagonize this disease as a disease. But certain of the individual symptoms through their urgency require especial attention. First of these is vomiting. If the vomitus is alkaline in reaction I give minute doses of morphine with a drop of aromatic sulphuric acid in a little chopped ice. If the vomitus be acid in reaction I give small doses of the carbonate of magnesia combined with minute doses of morphine frequently repeated. In adults this is given in pill form: in children as small powders in chopped ice. The most valuable agent, however, for excessive vomiting in peritonitis is lavage of the stomach, the quantity of water and the duration of the process depending upon the strength of the patient. So also tympanitis and meteorism which cannot be relieved by the passage and keeping *in situ* for a half hour of a high rectal tube, is best treated by lavage of the bowels with warm water to which some salt or sodium salicylate has been added. Owing to the fact that the phrenic nerve distributes sensitive fibers to the peritoneum, hiccough is a frequent and distressing symptom of this disease, for which we have no really effective remedy. Of occasional efficacy is Siberian musk in small doses, gr. ¼ hourly, or this drug combined with small doses of morphine given by the needle. For the fever, limited hydrotherapy, applied in such a way that the patient is not disturbed, is most desirable. Antipyretic drugs are absolutely contraindicated. Hypodermatic medication should be used wherever practicable. Digitalis (strychnine is to be avoided because it stimulates peristalsis), adrenalin, chloride, whiskey, and caffeine are the appropriate cardiac stimulants.

Although I fear that the preponderance of opinion is in favor of the treatment of tuberculous peritonitis by surgical measures, some cases certainly improve under ordinary medical régime suitable for tuberculous patients. This includes the usual dietetic, hygienic, and climatic recommendations. Added to this, tonics such as iron, arsenic, etc., iodine applied to the abdomen and the inunction of the abdomen over the tumor masses with mercurial ointment. These methods should certainly be used in cases of advanced pulmonary tuberculosis to the exclusion of surgical methods. When, however, tubercular peritonitis is the prominent lesion, with or without fever, especially if there be a fluid or semi-fluid effusion or if the tumor masses are seriously incommoding the patient, laparotomy with removal of the tubercular focus, whether it be in the peritoneal glands, ovaries, or where it may, is the proper method of treatment. I have seen no cases treated by radiotherapy, but the accessibility of the lesion in tuberculous peritonitis would encourage the trial of this mode of treatment.

The title of this paper obviates the necessity of an apology for its discursive character. Its object has been to show that while surgery is the stronghold in the therapy of peritonitis, medicine with the basic knowledge as to diagnosis, pathogenesis, and etiology which it has developed in the past few years concerning this affection, has laid the ground work for the successful surgical therapy and has amplified the purely medical curative resources to an appreciable if more limited extent.

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THE EXAMINATION OF THE SPINAL FLUID IN DEMENTIA PARALYTICA.

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A great deal has been written of late relative to the cytological and chemical examination of the cerebrospinal fluid as an aid to diagnosis in various diseases of the cerebrospinal system. There seems still to be ground, however, for question as to its actual value. The following is a résumé of work done during the past winter, in the wards and laboratory of the Buffalo State Hospital, by Dr. Alfred H. Clark of this city and the writer.

Our efforts have been directed principally to the cytological examination of the fluid as a diagnostic measure in dementia paralytica. We have in each case made the usual tests for seralbumin and for a copper reducing substance said by certain writers to be present in the normal fluid; but have gone no further into the chemical characteristics. At the outset we met with numerous difficulties arising both from our own inexperience in the technique and from the fact that the methods of procedure are still unsettled, each worker modifying the technique to make it conform to his own ideas. We have followed in the footsteps of our predecessors and established our own method of procedure.

The method first recommended to us, and which is still in vogue to some extent, was as follows: 5 c.c. of fluid, having been secured, is placed in the centrifuge for a given time, varying from ten to forty-five minutes. The fluid is then carefully withdrawn and the tube inverted to drain off any that may remain. With the tube still inverted, a capillary pipette is introduced and any sediment and fluid adhering to the bottom of the tube are allowed to run up into the pipette, which is then withdrawn and the contained mixture divided as equally as possible among three cover-glasses. The drops are allowed to dry and are stained for counting.

After having tried this method in three or four examinations we concluded, as we were prone to feel before undertaking it, that the method was crude and unreliable. With the cells unevenly distributed by the centrifuge over the bottom of the test-tube, the thinness of the layer depended largely on the caliber

of the tube, and after scraping the bottom it did not seem reasonable to us to suppose that there could still be any uniformity despite the attempted equal distribution of the material thus collected upon the cover-slips.

In our own work we have devised a method of procedure, which follows. While it is still crude, it seems to us to be a step toward greater accuracy. It differs from the method above described in that we used graduated tubes, and after centrifuging for twenty-five minutes, withdrew all the fluid excepting 0.2 c.c. This fluid, with the sediment, was then stirred thoroughly with a platinum loop, and drops of the mixture placed on slides. Then, always with the same pipette, all excess of fluid was withdrawn from the drops by capillary attraction. The advantage was gained by having a uniform dilution and drops of practically equal thickness. We found that different drops, made from the same specimen, showed essentially the same number and distribution of cells, thus differing from those with the method first described.

After drying, the drop was stained and always examined with the same objective and eye-piece, in order that the fields should be of uniform size. Various stains are recommended, but we have found the Jenner very satisfactory, the entire staining process requiring only two or three minutes.

In our later examinations we have resorted also to the use of the Thoma-Zeiss blood-counting chamber, using uncentrifuged fluid, in conjunction with the other method. We have thus been afforded absolute accuracy, with the additional demonstration of the character of the cells by means of the staining process. In comparing the results obtained by the two methods, in the same cases, we have found them always uniform in their relation to each other.

We have found it quite difficult to compare our results with those of others, on account of the lack of uniformity of technique, but have finally reduced them as nearly as possible to the same terms, and feel that we can safely compare them.

When using the centrifuging and staining process, with the dilution recommended, we have counted from 30 to 50 fields in each case and have looked upon the presence of one or more lymphocytes to a field as indicating a lymphocystosis, while the normal fluids have usually presented one lymphocyte to from 5 to 20 fields. With the counting chamber we have considered anything over 14 or 15 to a c.mm. as an increase, while the normal fluids presented from 1 to 4, or less, to the c.mm.

We have made satisfactory examinations of fluid in 29 cases, 13 of which have been typical paretics, 3 probable paretics, and 13 suffering from other conditions, from which paresis could be absolutely excluded.

Of the 13 typical paretics we found an abnormal increase in the number of lymphocytes in 8, or practically 61½ per cent. If to these we add the three probable paretics, in all of whom there was a lymphocytosis, the result is 68¾ per cent. increased.

Of the 13 cases other than paretics, 11, or practically 84 2-3 per cent., presented a normal lymphocyte count. Of the other two, one gave a history of syphilis, some twenty years before, and the other was evidently suffering from a syphilitic and inflammatory condition of the meninges, which condition was cured by treatment with potassium iodide. To recapitulate: 68¾ per cent. of our paretics showed an abnormal lymphocytosis, while in 84 2-3 per cent. of the cases other than paresis the lymphocytes were normal in number.

The seralbumin present in the fluid we found to be a variable quantity, and, so far as we were able to determine, bore no particular relation to the number of lymphocytes present or to the presence or absence of dementia paralytica. It was markedly increased, in two cases giving evidence of meningeal inflammation (showing polynuclear leucocytes in the fluid) and in a case of dementia paralytica associated with tabes.

Quincke, Farrar, and others state that sugar is present in the normal fluid. Certain other writers mention the presence of a substance, probably not sugar, which reduces copper from Fehling's solution. Deroubais reports a constant sugar reaction in normal fluid, but was unable to get a reduction in cases of dementia præcox. In spite of our careful and persistent efforts we have been able to get a reduction of Fehling's solution in but one case, and that one of the catatonic form of dementia præcox.

To conclude, while it does not seem to us, judging from our own observation and from a review of the literature, that it is yet possible to make a positive diagnosis of dementia paralytica from the cytological examination of the spinal fluid, as a few writers have asserted, we feel that it bids fair to become a valuable aid to diagnosis in some doubtful cases of this condition.

Aside from its value in paresis, it is not infrequently of service in other conditions. In the case of meningeal syphilis, associated with meningitis, referred to above, the character of the cells in the spinal fluid (an increase both of lymphocytes and polynuclear leucocytes) established a diagnosis which had been undetermined for weeks, previous to admission. Proper medication, administered on the strength of this examination, resulted in early and complete recovery, whereas, before this time, the patient had been failing gradually, but surely.

The fact that in the hands of the inexperienced the operation necessary for the withdrawal of fluid is attended with some difficulty, would probably limit its use to institutions, or to those who had acquired some experience in the operation and technique. Our experience has led us to believe that with reasonable asepsis the withdrawal of not more than 5 c.c. of fluid, which is all that is necessary in any case, and the detention of the patient in bed for three or four days, the operation is attended with no danger. We are not prepared to discuss the dangers said to exist in brain tumor, having had no experience with this condition. In 38 punctures (9 beside the 29 satisfactory for cytological examination) we have had no mishap, and apparently the operation has been without ill effect of any kind. By taking the necessary precautions it may also be made nearly, if not quite, painless.

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PRECISE DEFINITIONS FOR MANY DISEASES.

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While engaged recently in reference work at the Library of the Surgeon General's Office in Washington I had occasion to compare the definitions of infectious diseases given by various writers of dictionaries, text-books, and works of reference, and was struck with the vagueness and verbosity which characterize nearly all of them.

Thirty years ago it was not possible to give an exact definition to any disease, and in the case of most diseases it is still impossible. Diseases, the essential natures of which are unknown, because

their causes are unknown, cannot be defined, and in lieu of a definition it is customary to give a brief and imperfect description. In our imperfect knowledge of any disease in question we content ourselves with an enumeration of its most prominent characteristics and symptoms. Such substitution of description for definition is not only unobjectionable, not only desirable as representing the best we can do in the circumstances; it is of positive value to the student, who needs, at the outset, a few pegs on which to hang the more extended knowledge which he is about to acquire by further study of the subject.

Concerning many diseases we may labor yet for a long time, perhaps always, under this disadvantage of not being able to define them exactly. In the production of medical literature, as in the practice of the medical art, we are to some extent condemned to inexactness. The incompleteness of our knowledge in many matters of theory and practice, fully realized by ourselves, is often more painfully evident to the laity than to us. Our inability to give exact and satisfying answers to physiological, etiological, and therapeutic questions, which are put to us in an intelligent and sincere desire for enlightenment, often causes us to be regarded by laymen as a profession hopelessly condemned to inexactness and empiricism. Even in anatomy, which is, of all the vital sciences on which our art rests, the one made up entirely of fact to the exclusion of theory, there is so much variation in the size and form of bones, in the branching and distribution of arteries, nerves, etc., that we cannot avoid an elastic form of description and the admission of many exceptions. As a first-year student I remember well how this impressed a classmate who had been a mechanical engineer before taking up the study of medicine, how unsatisfactory he found the study of the human machine and its functions at first, and with what difficulty he was obliged to change his whole habit of thought and study and content himself with indefinite and elastic statements where he had been accustomed to exactness.

Because at many points we have recourse to speculative opinion in the absence of knowledge, because we know that many of our statements which are now accepted as founded on reasonable probability are open to refutation in the light of new discoveries, and because we have to deal so much with variable quantities, the profession has formed a habit of stating facts in a manner elastic and approximate rather than precise.

No profession welcomes discoveries of truth more gladly than ours, or labors harder to make plain by such discoveries what has been obscure. Nor are we usually slow in making use of newly discovered truth to revise and simplify our teaching, and substitute precision for vagueness of statement. Yet we have been very slow to do this in the definition of the infectious diseases. We have been more than slow, we have not even begun. It is thirty years since Robert Koch, in 1876, demonstrated the precise nature of anthrax, identifying in the diseased tissue the bacillus which is its cause, growing the bacillus in pure culture outside the body, after several removes of such pure cultures producing the disease by inoculation of a healthy animal with them, and demonstrating the proliferating bacilli again in the diseased tissue of the inoculated animal; thus satisfying all four of the postulates laid down by him and accepted by the entire profession as necessary to establish proof of the causative relation of a bacterium to a disease. For thirty years, then, it has been possible to give a precise and accurate definition of anthrax within a dozen words, and no other definition is exact or admissible.

Yet it is doubtful if this exact definition can be found in any dictionary or text-book. Most writers seem still to prefer a vague description by no means calculated for the accurate instruction of the student, and incomprehensible to the layman.

The following so-called definition of anthrax is taken from an exhaustive and much-consulted work of reference, recently published: "Anthrax is an acute, exogenous, facultative, parasitic, infectious disease, which is never general in its extension, but invariably finds its locus of primary origin in telluric and caloric conditions of certain localities which supply the pathobiological necessities of its specific cause—bacillus anthracis; and which is extended from such primarily infested localities by animals infected thereon to other localities, either by means of their natural excretions or by materials derived from such animals when dead—wool, hair, hides; and occasionally by floods."

A student or layman, desirous of knowing what anthrax *is*, might plunge into this collection of words, flounder through it to the end, and be excusable if he emerged with a vague idea that anthrax is a ghost which walks in certain haunted places.

We do not question the general truthfulness of this statement, but we must object to its being called a definition. It strikes us as an *indefinition*, a thing in every way the contrary of a *definition*. We venture to suggest here that the word *anthrax* can be defined with the same exactness as the words *iron, water, quinine*, and *triangle*, and that the following statement which defines it precisely is the only one admissible as a definition. To define the name of any thing is to tell as precisely as possible what the thing *is*. Anthrax is *the disease caused by an invasion of Bacillus anthracis*.

We will ask the reader to scan this definition deliberately, before we proceed to support our contention that it cannot be varied in a single word without destroying its precision. For we hold that each one of the words of which it is composed is necessary to make it correct and complete, and that no other word can be substituted.

To begin, the definite article must be used if we would define *the* thing. The so-called definitions of our text-books are apt to begin with a statement that anthrax is "*a* disease," or "*an infectious disease, caused by, etc.*" The indefinite article *a* or *an* means, *any, any one of many*. Anthrax is not any one of several diseases caused by the invasion of *Bacillus anthracis*. It is *the* one single definite disease caused by the invasion of that bacillus.

Anthrax is the *disease*. *Disease* is, according to Webster, "a derangement of any of the vital functions in which their natural action is interrupted or disturbed; morbid or unhealthy condition; sickness." The word is essential to our definition. Anthrax is not the organism itself, nor is it the invasion of the organism. It is the derangement, the morbid or unhealthy condition of the body, the *disease*, therefore, which is *caused by* such an invasion. And let us remark here, in passing, the superfluity of any adjectives inserted before the word *disease* in a definition. Apart from the confusion involved in the application of such terms as *infectious, contagious, communicable, inoculable*, etc., the impossibility of clear distinction between *acute* and *chronic*, and the superfluity in any case of the word *specific*, it is well enough understood now, not only by the profession, but by the intelligent laity who care enough for accurate knowledge of these matters to consult a dictionary or any other work of reference for information concerning a dis-

ease, that every bacterial or other parasitic disease is specific and infectious. To state that the disease is caused by an invasion of a certain bacterium is to say that it is specific and infectious and to insert those words in the definition conveys no additional information.

And before the word invasion we require the indefinite article: we must say *an* invasion, for that is just what we mean; *any* invasion of any part of the living body; skin, lung, or intestine; of man or any other animal. Further than that, if it should ever be proven by botanists that *Bacillus anthracis* invaded, lived, and multiplied upon, or in, any form of plant life, causing a blight or disease of the plant, the vegetable disease so demonstrated would be anthrax; we should not require any new name for it. If anyone is still inclined to say that anthrax is caused by *the* invasion of *Bacillus anthracis*, let him ask himself to what particular invasion he refers.

Invasion is, according to Webster, "a warlike or hostile entrance into the possessions or domains of another; the incursion of an army for conquest or plunder; a raid; the approach of any foe, or anything hurtful or pernicious; as, the *invasion* of a disease." The fathers of medicine who chose this word *invasion*, applying it in a figurative sense to the stage at which there was the first tangible evidence of the onset of an infectious disease, chose better than they knew. Its literal application in diseases now known to be caused by the entrance and spread of bacteria in the body is so appropriate and exact that we cannot improve upon it.

Lastly, as to the insertion or omission of the definite article before the name of the organism, it is better usage to omit it. Careful writers who once used it have since dropped it. It is not some one particular bacillus of the species to which we refer as the invading organism, but to the species, as a species, collectively. Thus man, as an animal, is *Homo sapiens*, not *the* Homo sapiens; quassia is the wood of *Simaruba excelsa*—that is to say, the wood of the species as a whole, not of some individual tree of the species. The article being omitted, the generic name should always be begun with a capital and the specific one with a small letter.

Let us now scan the definition again. To the question, *"What is anthrax?"* our definition makes answer: *"Anthrax is the disease caused by an invasion of Bacillus anthracis."*

Not only is there no other way to give a satisfactory answer to the question, not only will any enumeration of the signs and symptoms of anthrax fail to answer it, but our definition gives the only answer that dictates the question. Question and answer can be transposed. *"What is the disease caused by an invasion of Bacillus anthracis?" "Anthrax"* is the only answer possible.

Since a precise knowledge of the nature of anthrax was gained in 1876, bacteriological discovery has constantly enlarged the list of diseases which can be defined with a similar precision, thus:

Actinomycosis is the disease caused by an invasion of *Actinomyces bovis.*

Tuberculosis is the disease caused by an invasion of *Bacillus tuberculosis.*

Diphtheria is the disease caused by an invasion of *Bacillus diphtheriæ.*

Malleus (*Glanders*) is the disease caused by an invasion of *Bacillus mallei.*

And so on.

Including the various forms of malarial fevers, the invasions of the blood by many other animal parasites now clearly identified, the animal parasites for which the intestine is the usual site of invasion, and the skin diseases caused by invasions of the true fungi, the method of precise definition here suggested is already applicable to a large number of diseases. Nor is it necessary to distinguish in the definition itself between local and general invasion. The invading germs may remain as strictly localized in *diphtheria* or *anthrax*, with grave constitutional symptoms, as is the case in *favus*, with local manifestations only. These distinctions should be left for the subsequent description of the disease.

This manner of concise and exact definition can be "understanded of the people," and is as fit for any general dictionary as for the exclusively medical one. As it is desirable to give, in general dictionaries, as much descriptive information as limited space will admit, and to make it as simple and clear as possible, such information may be added after the definition itself without interfering with its unity.

Styles of definition suitable for general dictionaries would be the following:

Anthrax.—The disease caused by an invasion of *Bacillus anthracis.* One of the infectious diseases. Epidemics of it are frequent among sheep and kine, and man is occasionally inoculated. The disease is also called Siberian cattle plague, splenic fever, malignant pustule, or wool-sorters' disease.

Malleus.—The disease caused by an invasion of *Bacillus mallei.* One of the infectious diseases; chiefly affecting the horse and other solipeds, but occasionally communicated to man. The lungs, nasal passages and skin are chiefly affected. The disease is often called *glanders* when the nasal lesions are prominent, and *farcy* when the lesions are chiefly in the skin.

Glanders.—See *Malleus.*

Farcy.—See *Malleus.*

For medical dictionaries and for text-books on human pathology and practice, in which, in addition to a strict definition, a brief description is desirable, to give the student his bearings for further study, such forms as the following are suggested:

Anthrax.—The disease caused by an invasion of *Bacillus anthracis.* It is characterized by a specific lesion at the site of inoculation in the skin, with local edema and lymphatic inflammation; or by intestinal or pulmonary lesions with general infection; splenic enlargement, grave constitutional symptoms, and high mortality.

Malleus.—The disease caused by an invasion of *Bacillus mallei.* It is characterized by nodular, pustular, or ulcerative lesions in the lungs, nasal mucous membrane, or skin; with secondary lymphatic involvement, deep abscesses, fever, grave constitutional disturbance, and a high mortality.

It has been the purpose of this article to point out to medical lexicographers and writers of text-books the desirability of substituting precision, where precision is possible, for a wandering and floundering verbosity in defining the names of infectious diseases. Let our profession be exact so far as discovery has made exactness possible for us. Let us be done with *indefinition* where *definition* is as easy as it is desirable. Where this precision is possible, as it has been for a long time in many bacterial and other parasitic diseases, nothing should be allowed to intervene between the definition and the word defined; and no statement should enter into the definition itself which is indefinite or which requires subsequent modification. Additions of synonyms, descriptions of signs and symptoms, and details of zoological or geographical prevalence, are often desirable and proper, but this additional information should not be confounded with *definition*, or so inserted as to obscure the definition itself.

Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

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PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, June 30, 1906.

THE FINANCES OF THE A. M. A.

IN many respects the recent meeting of the American Medical Association in Boston was the most remarkable in the history of this body—remarkable not only in size (over 4,500 registered members were present), but also in the perfection of the local organization (due to the remarkable executive ability of Dr. Burrell and his efficient aids on the Committee of Arrangements), in the enthusiasm felt and expressed by all present, and, finally, in the bitter condemnation by some of the most prominent men in the Association of the arbitrary methods of the Secretary-Editor. Never has the Association been so prosperous as it is to-day; it has a membership of over 20,000—one-sixth of the estimated number of physicians in the country; it has a surplus of over a quarter of a million dollars, and this surplus is increasing at the rate of more than $25,000 a year. All loyal members of the Association, *quorum pars sumus*, must rejoice in those signs of prosperity and must give due credit for the same to the Secretary-Editor, to whose genius for organization this increase is largely owing. Since he assumed control of the Association, the membership has increased, in round numbers, from 8,000 to 20,000 and the outside subscribers to the *Journal* from 2,500 to 17,500, which should have brought an increase of $140,000 per annum to the treasury of the Association. Credit must also be given to the Treasurer of the Association, a practical financier and a bank director as well as a popular physician, whose wise investments of the surplus funds have apparently added not a little to the balance in the treasury. To the salaried organizer of the Association, sometimes dubbed the "walking delegate" by the disaffected, praise is also due from those who approve of the present system of organization of the American Medical Association. It is true the methods which he has thought wise, or has temperamentally been compelled, to adopt have made many bitter enemies of himself and of the body which he is assumed to represent; yet the fact remains that he has succeeded in the creation of many county societies and has thereby increased the potential membership in the Association.

So far, so good. The American Medical Association to-day is larger and richer and *quoad hoc* more powerful than ever before. But is it stronger in itself, and assured of continued progress? "Let him who standeth take heed lest he fall." This saying applies to organizations as well as to those who rule the organizations. Less than two years ago there were three enormously rich and powerful life insurance companies in the United States; their surpluses were in the neighborhood of $100,000,000; the men in control of them were among the financial magnates of the country, respected and envied, and anyone who had ventured the suggestion that there was danger to the companies in this prosperity would have been scouted. To-day these same companies are putting forth every effort to regain the confidence of the public by instituting investigations, suing their former chiefs to enforce restitution, and reducing salaries (including those of the medical examiners), and the pitiable condition of those who brought them to this state of seeming prosperity by their deceitful methods is known to all. The cause of the spectacular *débacle* is also known. The fall was the logical and inevitable consequence of the policy of concealment so long followed by those in control. The published reports dealt in generalities and studiously avoided details. The members of the mutual companies, who were theoretically part owners with a right to know how their money was being spent, were kept in ignorance of the facts and "jollied" by the magnificent totals into believing that they were coining money by living and would make more by dying.

The financial reports of the American Medical Association are disquietingly analogous to those of the insurance corporations. They deal in glittering generalities—and the surplus increases at the rate of $25,000 annually. But what are the items of expenditure? In the report for 1905 the expenses of "organization" are set down as $7,797.04; organization of what? The sum given away in salaries and wages was $78,874.79; whose salaries? For "medical legislation" there was spent $1,234.90. Under the item "Association" we find $10,062.30 expended. The average circulation of the *Journal* was 38,006, and the income therefrom should have been in the neighborhood of $192,000: but the total amount received from dues and subscriptions was only $147,651.61, leaving over $44,000 unaccounted for. And so on. What the members of the Association want is frank publicity in the financial reports—not indefinite items which defy analysis. Herein lies danger to the Association. Such a report as that published in the *Journal* of June 16 is worthless and worse—it is not frank. What the members have a right to know is what "organization" means, what "salaries and pay roll" means, what "association" means, why more than 23 per cent. of what should have been received in dues and subscriptions remains unaccounted for, and so on. Every member of the Association is the owner of an undivided fraction of the property of the Association, and he should be told how this property is being managed; he wants something more than the assurance of a retiring president, in virtue of his office a mere figure-head, that everything is all right and that the rulers are honorable men. There may be no "ring" or "clique," in the evil acceptation of the terms, but there is want of frankness on the part of those who control the Association which is disquieting and tends in these days of "graft" to arouse grave suspicions. These may be, and we believe are, unjust. They are, however, bound to grow so long as those who have charge of the money of the Association make unsatisfactory reports which suggest a desire for concealment. The only way for them to purge themselves

of suspicion is to take all the members into their confidence and to publish a clear and definite itemized report of receipts and expenditures, and then have the report audited by a committee of members, not by a local firm of expert accountants.

THE PATHOLOGY OF BURNS.

There are apparently two leading factors concerned with primary death from burns. When this follows immediately upon the reception of the injury, shock is probably the only factor with which we have to deal, but when the fatal issue does not come on at once and is preceded by focal hemorrhages and necroses in one or more organs, by hematuria, hemaglobinuria, and other evidences of violent intoxication, it seems likely that we are dealing with something essentially different from shock. Among the explanations which have been offered to account for these phenomena the most prominent have been the following: suppression of the cutaneous functions in the involved areas, changes in the nervous system due to reflex disturbances, the formation of toxic substances in the blood, the destruction of the blood elements, and the absorption of toxic materials from the injured area. Experimental evidence has been adduced to show that poisonous substances are circulating in the blood after the infliction of extensive burns, and it may be reasonably assumed that these are directly concerned with the fatal issue. But their exact origin and character are by no means certain.

The degenerative and necrotic changes which have been described in various organs, particularly in the liver, the kidneys, and the lymphatic system are strikingly similar to the effects of some of the infectious diseases such as diphtheria. There are changes in the blood which also seem to be due to the action of some toxic material, and both the urine and the blood serum have been shown to be poisonous. It has been found in addition that if the flow of blood to the affected region can be temporarily prevented, a prophylactic effect is secured and the immediate removal of the burned tissues also seems to prevent a fatal issue. The facts just noted have been quite conclusively demonstrated, but we are still very much in the dark regarding the production and action of this toxic substance if such it be, and considerable interest attaches therefore to any new communication on this subject. Herman Pfeiffer has made some careful experiments in animals in an attempt to solve this problem and his findings, detailed in an article in *Virchow's Archiv*, Vol. 180, No. 1, are very instructive. After anesthetization he scalded various portions of the body and then collected and studied samples of the blood and urine. It was found that the pathological changes increased in intensity the longer the time which had elapsed between the injury and death. The urine was at first hemorrhagic and later albuminous in the burned animals, and if introduced into normal animals by subcutaneous injections, either death or extensive necrosis and ulceration resulted. A like effect was obtained with the blood serum. The toxicity of these body fluids increased until about the fifty-sixth hour, when it began to grow less. It seemed to be entirely independent of the amount of hemoglobin dissolved, and the poisonous principles appeared earlier in the urine than in the blood serum. An intense paralytic action on the central nervous system was usually noted, but in some cases a local necrotic effect was more prominent. Sometimes the intestinal canal was particularly affected. The toxic substance was destroyed by exposure to sunlight or ordinary daylight and disintegrated by heat. It also seemed to have no effect on the unbroken skin.

Pfeiffer does not believe that there is any agglutinin or hemolysin present in this body, neither is it a ptomain or one of the pyridin bases. In some respects it resembles the snake poisons and the nucleoproteids, but as to its exact composition he is ignorant. Where the poison originates he is unable to state, as he failed to recover any from the immediate vicinity of the burn or from the tissues. These experiments, although not by any means conclusive, are in thorough accord with the modern ideas as to the pathology of burns. Whether further research along this line will result in any new ideas as to the treatment of the condition remains to be seen. It seems reasonable to suppose that in addition to local and general supportive measures as hitherto employed we may expect the treatment to be developed along the lines indicated by the trend of the experiments of this and other recent observers.

THE ALLEGED EPIDEMICITY OF APPENDICITIS.

Theories innumerable and of various degrees of complexity have been adduced to account for the pathogenesis of this disease, and among them the idea that appendicitis was possibly of an infectious origin has become especially prominent. A closer anatomical study of the vermiform appendix has shown that in its structure lymphoid tissues constitute an important element, and this feature, together with its topographical relations, offers a most favorable condition for an invasion by infectious processes. It is quite natural that the development of this idea would soon lead to the thought that appendicitis might also prove to be epidemic in character, and the adherents of this theory call attention to the fact that during the past fifteen years the disease has become particularly frequent. It has been claimed moreover that the greater frequency of the complaint has been coincident with that of influenza and that both of these conditions could be traced to an increased consumption of meat.

A more reasonable view of this question, according to Cheinisse (*La Semaine Médicale* 1906, No. 10), would take cognizance of the fact that perhaps improved methods of diagnosis and a more complete knowledge of the clinical history of the disease during recent years have tended to define many cases as appendicitis which formerly went unrecognized or were called by some other name. This applies particularly to the early diagnosis and undoubtedly in many instances the

symptoms of beginning appendicitis were attributed to disturbances in the stomach, intestines, or liver, and the acute cases were formerly commonly designated as peritonitis of unknown origin. This point is well illustrated in the statistics presented by Villaret dealing with the situation in the French army, to which Cheinisse calls attention. Here the number of appendicitis cases was found to have increased about 70 per cent. in recent years, but in contrast to this the affections of the liver and the peritoneum, as well as chronic gastric complaints underwent a corresponding decrease. This demonstrates that the increase in the former is only apparent, and other carefully compiled statistics will no doubt bear out this statement. It is evident therefore that the theories dealing with the epidemic nature of the disease do not receive very much support from a study of these figures, and the relation between appendicitis and influenza has likewise never been confirmed by facts. The statistics upon which the latter assertion is based do not comprise an amount of material sufficiently large to exclude the possibility that the connection between the two diseases was anything more than accidental; this lack of evidence invalidates also the claim that the complaint is more prevalent during certain seasons than during others. A natural sequel to the assumption that appendicitis occurs in epidemics is the fact that the disease is apt to be diagnosed as being present without sufficient cause for such a claim. Thus it has been shown that in certain cases of pneumonia the pain may be entirely localized in the right iliac fossa, and during an attack of influenza a similar clinical picture may be due to a neuralgia or a neuritis. Certain forms of intestinal spasm may closely simulate the clinical features of appendicitis and unfortunately continue after the organ has been removed by operation; and the same is true of colitis.

Anesthesia for the Wounded.

It has been claimed that the introduction of the small caliber weapon has diminished to a large extent the horrors of the battlefield, but the experience gained in the South African and the Russo-Japanese wars has afforded ample confirmation of the fact that the term "humane" as applied to these instruments of death is a misnomer. The unfortunates who may have been hit by the projectiles from these weapons are known to have been subjected to great suffering, as great as in the days when bullets were not made with humanitarian intentions. There is one circumstance which largely increases the suffering which the wounded are compelled to endure, and that is the long time which must necessarily elapse in many instances before proper surgical aid can be extended to the unfortunate victims. This is an aspect of the question which has not apparently been thought of very often, but its importance is nevertheless quite evident and we must therefore regard with some interest the suggestion for relief advanced by Prof. Schleich, whose name is so closely associated with the subject of infiltration anesthesia. In a recent pamphlet (Berlin, Julius Springer) Schleich proposes that every soldier in the field be provided with a means by which, in case he is wounded, it may be possible to produce a narcotic sleep which would alleviate his sufferings until other help arrived. The remedy most suitable for this purpose is believed to be a mixture of chloroform, ether, and ethyl chloride with a boiling point closely approximating that of the temperature of the body. This combination has been used as a general anesthetic by Schleich and others in all classes of cases with good results. It is claimed to possess an anodyne action and the power of producing sleep without inducing a true narcosis, and therefore seems particularly adapted to the purpose for which it has been recommended. For practical use the remedy is to be carried about in small aluminum capsules containing absorbent cotton which has been saturated with the narcotic mixture. Each soldier is to be provided with three capsules, and when wounded he is directed to withdraw the cork from one of these small receptacles and simply inhale the narcotizing vapor. Or he may act as the ministering angel to some other unfortunate who may be unable to perform this feat himself. We have seen how efficacious the first-aid packages supplied to the Japanese soldiers could be made, how hemorrhages, suppuration, and other wound complications could be controlled to an extent in many cases sufficient to save life. This personal anesthetic scheme is even a step further, but a step which will certainly seem to many fraught with considerable danger, and we may expect to hear comments, both acrid and otherwise. To a limited extent the procedure may perhaps be applied with success, but practical experience will afford the only means by which we can hope to gain any knowledge as to the real value of Schleich's suggestions. There is, of course, no suggestion of "euthanasia" in this scheme. The life of the soldier is too valuable to be thrown away prematurely. It is intended that the dose of the anesthetic shall be narcotic only, not lethal.

A New Method of Diagnosis in Tuberculosis.

Among the various methods employed for the purpose of confirming or of making a diagnosis of tuberculosis, the most constant and reliable has been found to consist of the inoculation of certain animals with the suspected morbid material and then to await the production of a similar pathological process in their tissues. Guinea pigs are usually chosen for this purpose because the lesions of experimental tuberculosis as they occur in these animals are well known and spontaneous cases of the disease are very rare. One of the disadvantages connected with these methods of subcutaneous or intraperitoneal inoculation is the fact that a definite result cannot be expected in a period of less than eight weeks. This objection is apparently overcome in the procedure recommended by Larier and Ronzoni (*Gazzetta medica Italiana*, 1906, No. 4), in which it is proposed that the suspected morbid material be injected directly into the mammary glands of guinea pigs which are still suckling their young. The method referred to is based on the fact that experiments made in cows have demonstrated that the mamma provides an excellent medium for the growth of the tubercle bacillus. The writers injected specimens of sputum in cases of doubtful tuberculosis into the mammary glands of guinea pigs who had given birth to young from twenty to twenty-five days previously, and in all cases which were later proved to be positive by other means, the bacilli were found

in the milk of the animals in from five to ten days after inoculation. In order to eliminate any possibility of abscess formation, the sputum was exposed to a temperature of 54° C. for an hour, and then on the following day again for another twenty minutes before being injected into the animal's glands. As a result the virulence of all the other germs was practically destroyed; that of the tubercle bacillus was inhibited, but not to a sufficient degree to prevent the production of both splenic and hepatic tuberculous foci. The advantage of such a method as that here referred to is obvious, for above all other things it will effect a great saving of time, and in certain cases this may be a factor greatly to be desired. The mammary gland of the guinea pig is particularly well adapted for this purpose because it does not harbor any acid-fast bacteria and does not afford a favorable soil for the growth of other organisms.

A Salt-free Diet in Scarlatina.

There has been considerable discussion lately regarding the advantages of a diet free from salt during scarlet fever, and interest attaches to certain comparative tests made by Pater (*Wiener klinische Wochenschrift*, No. 13, 1906). The patients in one group were kept on an absolute milk diet, the others were given bread, rice, potatoes, eggs, butter, sugar, and milk, all without any trace of salt. It was found that the latter course was entirely free from danger and seemed to constitute a better prophylactic measure against nephritis than the exclusive milk diet. The initial febrile albuminuria which is often present rapidly disappeared under this régime. An increase in body weight was also observed and the variety of food presented was greatly appreciated by the patients. Convalescence was invariably more rapid and immediately succeeded the period of defervescence. The improved condition of the patient also favored resistance against secondary infections. This is evidently but another step in the more liberal dieting of certain classes of patients which has lately been adopted and an exclusive milk diet is no longer considered by many to be the *sine qua non* of medical treatment in many of the febrile diseases, of which typhoid fever is another example.

News of the Week.

California Legislation.—A special session of the California Legislature, made necessary by the catastrophe at San Francisco, enacted these laws of interest to the profession: A bill appropriating $25,000 for the building of temporary houses for the insane while permanent buildings can be put up to replace those of the Agnew State Insane Asylum at San José, destroyed by the earthquake; three bills providing for the reproduction of the registers of the State Boards of Examiners in Medicine, Pharmacy, and Dentistry; a bill providing for the issuing of duplicate certificates to physicians, pharmacists, and dentists who lost the original papers in the fire at San Francisco; a bill appropriating $83,800 for the University of California, about $8,500 of which is to restore buildings and apparatus damaged in the Medical and Veterinary departments; a bill appropriating $2,500 for the restoration of the property of the State Board of Pharmacy, and a bill of equal amount to restore the property of the State Board of Medical Examiners.

Contract Practice.—The referendum on the protest raised by the Douglas Branch of the Chicago Medical Society against the practice of physicians "contracting" their services showed that 358 members were against such a practice, and that 201 thought it should not be interfered with. The vote was not decisive, inasmuch as the bylaws require that 50 per cent. of the members must engage in a referendum in order to make it imperative. With a total membership of 1,928, the referendum fell considerably short.

Degrees Conferred on Drs. Moyer, Allport, and Steele.—Drs. Frank Allport and Harold N. Moyer of Chicago received the degree of LL.D. at the annual commencement of Notre Dame (Indiana) University, on June 14. Dr. D. A. K. Steele likewise received the degree of LL.D. at the commencement exercises of the University of Illinois, Champaign, June 13. Dr. Steele is President of the College of Physicians and Surgeons of Chicago.

Fruit and Candy as Fomites.—A recent investigation of the fruit and candy in the shops by the Bacteriological Department of the Board of Health at Los Angeles, Cal., revealed the presence of so many bacteria conveyed to them by the wind that legislation has been asked for requiring of dealers that such articles be exhibited for sale under glass.

Medical Department of the University of California.—The regents of the University of California, at a meeting held in the Cooper Medical College, San Francisco, June 12, decided to transfer the work of the first two years of the Department of Medicine and Dentistry to the university buildings at Berkeley, in order to give more room in the college building for clinical work.

International Congress for the Promotion of Hygiene and Salubrity in Dwellings.—The second annual conference of this association is to be held in Geneva, Switzerland, on September 4 to 10, 1906. The purpose the promoters of the congress have in view is to appeal to the most competent professional men of all countries—to doctors, hygienists, and architects—to deliberate in common on the problem of how best to ameliorate the salubrity of dwellings. The general secretary is M. Albert Wuarin, 1 Rue des Moulins, Geneva, Switzerland.

Swedish Hospital in Brooklyn.—The new Swedish Hospital, at Sterling place and Rogers avenue, Brooklyn, was dedicated and opened on June 24. The hospital is a large brick building, which has been remodeled to suit the purpose at a cost of about $65,000. It is equipped to accommodate seventy-five patients, and, while specially intended for Swedes who speak only their own tongue, it is also free to all without distinction of race. It will be ready to receive patients July 15.

The New Homeopathic Medical and Surgical Hospital and Dispensary of Pittsburg, Pa.—This institution, after forty years of existence in the business district of Pittsburg, has bought a site for a new building in the residence section. The plans, which are the work of Mr. C. Emil Müller of Pittsburg, include many original features in hospital construction whereby a maximum of light and air is secured to each ward and the expenses of maintenance are greatly reduced. The building is to provide for two hundred and fifty patients and will cost about $1,000,000.

Faculty of the University of Chicago.—Dr. Valdemar Koch has been appointed to the chair of Physiological Chemistry in the University of Chicago. Prof. Alexis Carrell has resigned and will go to the Rockefeller Institute in New York. Prof. G.

C. Muthrie has also resigned and will go to St. Louis University.

Ordinance Relating to Hospital Removals.—An amended form of ordinance relative to the transfer of patients from one hospital to another has been passed by the Board of Aldermen. As amended, it provides that patients shall not be transferred from one hospital to another unless suffering from an infectious disease or requiring treatment specifically out of the range of the hospital in question. Hospital superintendents violating the ordinance are to be subject to a penalty not exceeding $100 for each offense.

Illegal Practitioners Convicted. — The Medical Society of the County of New York on June 23 secured the conviction of three persons for practising medicine illegally. One was an alleged osteopath; another, a man of seventy-six years, was fined for practising the "cup treatment," and the third was a "hypnotic healer."

New Nurses' Training School for Bellevue.—The Board of Estimate has authorized an appropriation of $628,000 for the erection of a building for the training of nurses for Bellevue Hospital. The building is to be part of the new Bellevue Hospital and will stand between Twenty-fifth and Twenty-sixth streets, facing the East river. The cost will be borne in part by subscriptions from the patrons of the now existing training school. The trustees of the new institution will comprise the twenty directors of the present school and ten others to be appointed by the Mayor.

Contribution for St. Mary's Hospital.—The sum of $6,000, the largest in sixteen years, was secured at the annual garden party in Brooklyn for this hospital.

Free Outings for the Sick Poor.—The New York Association for Improving the Condition of the Poor will send this notice to the physicians in the city: When your patient needs a fresh-air outing, special institutional care, extra nourishment, or other material relief, we may be able to help, if you will send (by 'phone, 348 Gramercy, or by post card or letter addressed A. I. C. P., 105 East Twenty-second street) the name and address, with a simple diagnosis and statement of need. Similar notices were sent to the teachers of the public schools some time ago—with excellent results, it is said.

Smallpox at Catskill.—The Secretary of the State Board of Health has informed the City Health Department that there have been between forty and fifty mild cases of smallpox at Catskill-on-the-Hudson, and that of this number fourteen or fifteen cases are still remaining. Dr. Darlington believes that the public should be advised of the conditions, so that all persons who intend going into that region for their summer vacations may be revaccinated. If that precaution is taken there will, of course, be no danger.

Dr. Woodbury Sustained.—The counsel for the aldermanic street cleaning investigating committee submitted his report and findings, including a recommendation for the dismissal of Commissioner Woodbury, to the committee on Tuesday morning. After some discussion his recommendations were rejected by the majority of the committee.

The Yellow Fever Situation.—One case of yellow fever and one suspected case have been reported from Havana, and another patient, ill with the disease, has been detained at the Mississippi River Quarantine Station, ninety-seven miles below New Orleans. This is the first case of yellow fever reported in Louisiana this year. The patient is a Cuban sailor who arrived on the steamer *Holstein* from Havana.

Deaths from Wood Alcohol.—Two deaths occurring in Brooklyn last week are attributed to cocktails adulterated with wood alcohol. The saloon keeper who sold the compound has been arrested on a charge of homicide. A ten-gallon keg of wood alcohol was found in his place of business.

Commission to Investigate Harbor Pollution.—A commission to devise means for keeping the waters of New York harbor from becoming polluted has been appointed by Mayor McClellan. It will consist of Dr. Daniel Lewis, ex-president of the State Board of Health; Prof. Olin H. Landreth of Union College, Dr. George H. Soper, A. J. Provost, and Matthew C. Fleming. The commission is directed to invite the cooperation of the State authorities of New Jersey and must make its report within two years.

Pure Food Bill.—The House of Representatives on June 23 passed the Pure Food bill by a vote of 240 to 17. In its present form the bill differs in many respects from the original measure proposed by the Senate. Several amendments were adopted, but one designed to prevent the blending of whiskey was rejected.

Reception Hospital for the Insane.—The Board of Estimate and the Aldermen have authorized the purchase of the property between Seventy-third and Seventy-fourth streets, with a frontage of a block on Exterior street overlooking the East River, as a site for a State Reception Hospital and Dispensary for the Insane. The land will cost $146,000 and the plot will be 200 x 250 feet. It will be leased to the State, and the State Commission in Lunacy will erect the necessary buildings at a cost of $300,000.

Oklahoma State Medical Association. — The new organization resulting from the amalgamation of the medical associations of Oklahoma and Indian Territory will be known as the Oklahoma State Medical Association. The list of officers of the new society may be found on page 841 of this volume of the MEDICAL RECORD.

Officers of the Chicago Medical Society. — At the annual meeting of this society, held June 20, the following officers were elected: *President*, Dr. George W. Webster; *Secretary*, Dr. Robert T. Gillmore; *Councilors*, Drs. W. A. Evans, C. S. Bacon, Frank Billings, L. L. McArthur, and F. Henrotin; *Alternates*, Drs. William E. Quine, Henry F. Lewis, W. S. Harpole, Brown Pusey, and Theodore Tieken.

Harlem Medical Association.—The list of the newly elected officers of this society is as follows: *President*, Dr. W. H. Stewart; *Vice-President*, Dr. Charles Clinton; *Secretary*, Dr. Martin Cohen; *Treasurer*, Dr. John Remer; *Trustees*, Drs. Henry Heiman, E. L. Cocks, and P. Fridenberg.

Obituary Notes.—Dr. KARL EDUARD BEHN, surgeon of the Hamburg-American liner *Graf Waldersee*, died suddenly on June 16 and was buried at sea. Dr. Behn had been a surgeon with the Hamburg-American for eight years. Prior to that he had been with the North German Lloyd Line for two years. He was single and he lived in Bremen.

Dr. WILLIAM DUFF BULLARD of this city is dead, at the age of thirty-four years. He was graduated from Amherst College in 1892 and from the College of Physicians and Surgeons three years later. Dr. Bullard served as interne in the Post-Graduate Hospital and was an adjunct Professor of Surgery there until 1900.

Dr. Herbert James Liddle of this city died at his residence, 63 West Thirty-seventh street, on June 25, after a short illness. He was born thirty-two years ago and was graduated from the Long Island College Hospital Medical School in 1896. He was a member of the Medical Society of the County of New York, of the Society of Dermatology and Genito-Urinary Surgery, of the American Urological Association, and of the Polyclinic Clinical Society.

Dr. David Clark Strachan, an interne in the Flower Hospital, New York, died on June 23, at the residence of his father in East Orange, N. J., of sarcoma. He was born in Chicago in 1882.

Dr. Charles S. McKnight of New York City died suddenly at his summer home in Saratoga on May 21, at the age of fifty-three years, after a long illness.

Dr. Charles F. Faber died at Philadelphia on June 23, at the age of forty-one years. He was graduated from the Medical department of the University of Pennsylvania in the class of 1866. He had for ten years pursued the practice of his profession in Cairo, Egypt.

Dr. J. F. Scoresby Eastgate of Ellenville, N. Y., died on June 2, at the age of forty-nine years. He was graduated from the College of Physicians and Surgeons in New York and had practised in Ellenville ever since.

Dr. Tighlman Hunt of Plainfield, Ind., died on June 12, at the age of sixty-eight years. He was born in Friendship, N. C., and was graduated in 1866 from what is now the Medical Department of Purdue University at Indianapolis. He had practised in Coatsville and Greencastle until twelve years ago, when he removed to Plainfield.

Dr. Oscar L. Dales of Grand Rapids, Mich., died on June 11, at the age of fifty years. He was born in Uhrichsville, O., and received his medical education at the Western Reserve University at Cleveland, O.

Dr. Alexander R. Shaw of Philadelphia died on June 13, at the age of seventy-one years. He was graduated from the Hahnemann Medical College in 1856 and began the practice of medicine in Chambersburg. He then moved to Newark, Del., and from there to Philadelphia.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

METCHNIKOFF ON HYGIENE—THE "CHRISTIAN SCIENCE" CASE—ILLEGAL PRACTITIONER CONVICTED—CHICAGO MEAT—THE LATE SIR WILLOUGHBY WADE.

London, June 5, 1906.

Professor Metchnikoff has been here and delivered the Harben lectures. I congratulate the Royal Institute of Public Health on having secured his services and on the success of the reception held to meet him. The first lecture was on "The Hygiene of the Tissues," and of course referred to the very latest researches. On the strength of these he postulated that the phagocytes were able to elaborate and excrete into the blood substances which attached themselves to microbes and made them more easily destroyed by the body. Acquired immunity is due to an extra activity of the phagocytes, giving rise to increase of immunizing substances and increased capacity for enveloping microbes and destroying them intercellularly. Immunity being then the result of phagocytic action, that is to say, a function of cells, leads to the conclusion that to fight the germs of infection we should stimulate the action of the cells, and that is the way in which vaccination against infectious diseases is effectual. Anything likely to weaken phagocytic action must be avoided. Opium and other poisons do this even in small doses. Alcohol also, as shown by the slighter resistance to infectious diseases, particularly pneumonia, exhibited by those who indulge in it freely. Quinine, so valuable as a prophylactic against malaria, is also a poison to the white cells. As a rule drugs were best avoided and hygienic measures trusted to check the outbreak of infectious diseases.

More than ten years ago it was proved that the resistance of guinea-pigs to pathogenic microbes could be increased by injections of certain liquids, and this plan has been tried in practice. Mikulicz injected subcutaneously a solution of nucleinic acid twelve hours before operations. Petit used heated horse serum in abdominal and pleural operations, and the lecturer thought this preferable. To increase the phagocytic reaction in the protection of tissues subjected to operations is the first step in the hygiene of the tissues of which the foundation stone has now been laid. This is that the phagocytes are the defence against infective germs.

Prof. Metchnikoff devoted his second lecture to the "Hygiene of the Alimentary Canal," his main point being the necessity of preventing the consumption of foods that have been contaminated with microbes or entozoa. In regard to this he offered suggestions which to many will appear to be counsels of perfection, *e.g.* the proposal to eat strawberries only after boiling, which reminds me of another eminent bacteriologist, who, when questioned about the best way to secure the purity of ice-water to drink, replied, "Boil the ice." But, to return to the lecture, it was pointed out that leucocytosis may occur as a normal process. After a meal microbes pass through the intestinal wall and are found in the blood. It may be that the wall has been injured by the passage of hard particles, for which reason when an animal is to be used for providing serum it should fast before being bled. Probably in conditions referred to intestinal intoxication, the blood has already been invaded, so that the intestinal wall demands further attention as to its hygiene. Intestinal worms are known to be often present without causing inconvenience to their hosts, but it is just as certain that their bites might give rise to mischief. The lecturer cited the fact that entozoa had often been recorded as present in appendicitis, and referred to the success which had attended the use of vermifuges in the intervals of acute attacks. It had been suggested the entozoa might carry the typhoid bacillus to the mucous membrane, and the suggestion deserved investigation. Worms believed to be of intestinal origin have been found in the center of tumors in mice. All these data, the lecturer held, go to show that it is time to begin a campaign against entozoa such as is being waged against mosquitoes. Naturally, the first preventive is to secure that no contaminated food or drink should be consumed, and to this end the lecturer said all should be boiled, for, although a temperature equal to boiling water is not sufficient for sterilization (spores of *Bacillus subtilis* and others resisting it), yet it would kill the ova of parasites and almost all pathogenic microbes. Salads and raw vegetables are dangerous from this point of view. They are so likely to carry entozoa or microbes they should always be scalded with boiling water, or, better still, be themselves boiled. The same precaution applies to fruits. Strawberries, as I have already mentioned, the lecturer said, should be boiled. They grow so near the ground the berries are contaminated by the soil, except perhaps the fine variety caprouel, which grows higher. It would be safer to eat such fruits in jam. But assuredly those who like them fresh will pronounce jam a mawkish substitute. The lecturer said that until hygiene becomes generally understood it is necessary to insist on people boiling whatever they drink and adequately cooking their solid foods, for thus they might secure themselves against many diseases of the digestive system. Perhaps they might also by that means escape some diseases for which we have at present no remedy. It had long been held the use of raw food should not be permitted in infancy, but the direction was equally suitable for all ages.

Another method of meeting the danger was mentioned by Prof. Metchnikoff, viz., the attempt to acclimatize useful microbes in the alimentary canal. Lactic bacilli have been proved to serve this purpose. They produce lactic acid and prevent butyric and putrefactive ferments developing. They seem to assist in regulating the functions of the bowels and kidneys. Intestinal putrefaction, being a cause of general wear and tear in the body, its prevention must be beneficial.

In the "Christian Science" case the magistrate has committed Adcock for trial for manslaughter by neglect, and accepted bail, defendant in £1,000 and two others in £500 each. As the coroner's jury found the same verdict, it may seem to you that some of the proceedings are rather unnecessary, these preliminary ones having no effect until the full trial. But that is the way of the law.

The Defence Union on Tuesday obtained a conviction for illegal practice against a man calling himself Mr. Le Grand Denslow. An advertisement stated that a gentleman had been cured of locomotor ataxia after fifteen years' suffering, and offered to send the address of the doctor.

It was obtained for the union and the defendant was seen, who said English methods were too slow and old-fashioned. The defence was that Denslow was an American doctor. The magistrate fined him £30 and costs.

Our newspapers are inculcating some very horrible accounts of the Chicago meat scandal. Some doctors have a special interest in the revelations, as they have often advised their patients to buy the preserved foods. But there is no novelty about the alleged misdoings, for more than a year ago some most unsavory details were published in the *Lancet*, but its readers do not seem to have been alive to the importance of the matter, or perhaps they fancied their leading authority was slightly exaggerating. A similar story was given last year about the method of picking strawberries, etc., but it did not seem to trouble the consumers, who for the most part would know nothing of the contents of medical journals until the general newspapers quote them—and then, well, not a few doctors will be blamed by patients for not telling them.

Sir Willoughby Wade, M.D., Consulting Physician to the General Hospital, Birmingham, died on the 28th ult. in Rome, aged 79. He had lived in Italy for some years. He took his B.A., Dub., in 1849; his M.B., 1851, and in 1896 was made M.D. Hon. Causa, in which year also he received the honor of knighthood. He wrote "Observations on Diphtheritis" (1858) and a further work on the subject, "Clinical Notes on the Pathology and Treatment of Diphtheria," in 1863; next year "Notes on Rheumatic Fever," followed in 1893 by "Gout as a Peripheral Neurosis."

THE ETIOLOGY OF RICKETS.

To the Editor of the Medical Record:

Sir:—In your issue of March 31, 1906, on page 518, in the paragraph on Rachitis, Hansemann is stated to believe that "the chief factors involved are the absence of a sufficiency of fresh air and freedom of motion for the young, and the validity of this argument is attested by the fact that rachitis is practically unknown in Japan, where babies are exposed to the fresh air to a much greater degree than is the case in other countries, and where their clothing is such as to permit of the greatest possible freedom of movement." Living here under much the same conditions as would prevail in Japan as noted above, I can testify to the fact that these surroundings alone do not prevent rachitis, of which we see a fair amount. Children here go practically naked for the first year or eighteen months of their life. They are also reared in bamboo houses, the sides being made of loosely woven matting and the floors of split bamboos, so that on every side air can and does enter. Added to this, the life is essentially an open-air one. Yet many children from the age of two to three years suffer from rickets. I ascribe it to the diet of the Shans. The staple is rice, with almost every kind of thing, from the grubs of insects and many kinds of young leaves up the scale to beef and pork, used as a relish. The poorer classes live very largely on rice and green stuff of one sort or another. Children too are nursed all through pregnancy and after the second child has arrived, so that there is every chance for them to suffer from a lack of fats in their food. That they respond very readily to an emulsion of cod-liver oil and lime-water, seems to bear out my theory of the cause here.

A. H. Henderson.

Mongnai, S. Shan States.

CAUSATION OF THE STIMULUS OF THE HEART—A SUGGESTION.

To the Editor of the Medical Record:

Sir:—In his article in the *Journal of the American Medical Association*, June 2 and 9, 1906, W. H. Howell carefully weighs the pros and contras for the myogenic or neurogenic origin of this stimulus, basing his conclusions upon the results of evidently very careful and new observations. As important factors in the causation are demonstrated calcium chloride and potassium salts, the latter being one of the constituents of an unstable, probably organic, compound that easily disassociating should thus supply the stimulus. But, considering the well-known chemical properties of calcium chloride, may not this alone constitute the important factor? Some of it upon or within the endothelium would come in contact with a blood stream heavily laden with carbon dioxide. As result insoluble calcium carbonate would form first, rapidly changing under the influence of more carbon dioxide into easy soluble calcium bicarbonate, this then being carried away. The other component, chlorine, *in statu nascenti* would at once appropriate sufficient hydrogen for becoming, as hydrochloric acid, the irritant or stimulus. The latter in turn would unite with the potassium salt. This, when remaining *in situ*, would delay the next beat, as described, but when carried off would open the way for a renewed supply of the calcium chloride. In a well equipped laboratory proof of this theory by color reaction would not seem impossible. But the writer is in no way situated to do this, nor can he look up the literature upon the subject.

C. Am Ende, M.D.

New York.

Progress of Medical Science.

Boston Medical and Surgical Journal, June 21, 1906.

Multiple Ulcers of the Gall-Bladder.—E. A. Locke and S. B. Wolbach report the case of a woman of fifty-six years suffering from varicose ulcers of the leg. There was a sudden onset of severe abdominal symptoms suggestive of appendicitis. Operation was finally deemed advisable, but nothing was found. Later an abscess formed in the wound and was followed by peritonitis. Twenty-three days after operation a terminal pneumonia supervened. Autopsy showed the entire gall-bladder lined with chronic ulcers, two of which had apparently penetrated, causing a general peritonitis. The general condition of the patient was not at all good at any time, there being arteriosclerosis, myocarditis, chronic bronchitis, and emphysema. According to the authors this case of ulcerative cholecystitis not occurring in association with gallstones and leading to a perforation and peritonitis is unique in literature. The cause of the sudden onset of abdominal symptoms they are unable to determine. Two possible explanations are suggested for the post-operative peritonitis: first that a local sepsis at the wound may have been the point of origin, and second (more probable), the perforations in the gall-bladder. Perforation occurred probably spontaneously, although it is evident from the extremely thin floor of many of the ulcers found at autopsy that the emptying of the gall-bladder by pressure at the operation might have caused them to give way.

New York Medical Journal, June 16, 1906.

The D'Arsonval and Other High Frequency Currents; What They Are and What They Will Do.—H. G. Piffard describes the physics of these currents, which are three in number (D'Arsonval), the derived or shunt current, the autoconduction and the autocondensation current, the essential feature connected with their conduction being (1) a suitable capacity, such as Leyden jars, or a flat condenser and (2) a solenoid or a spiral. The general effects of these currents on the human organism are described. The author considers the high frequency currents more efficient owing to their higher amperage. The general indications for their employment are conditions characterized by impaired metabolism. Contraindications are acute visceral inflammations, eruptive and continued fevers, marked cardiac or vascular disorders, and advanced pulmonary tuberculosis. A limitation to their use is that the patient must be able to attend on the physician as the apparatus is not easily transported. In early tuberculosis these currents have proved to be extremely useful. Weight increases, appetite improves, cough lessens, and night sweats cease. Other diseases in which beneficial results have been obtained are gastric dilatation and locomotor ataxia. Locally obstinate acnes, localized eczemas, genital pruritus, lichen planus, hemorrhoids, and fissures have all been markedly relieved. Malignant or semimalignant lesions of the skin, such as epithelioma, lupus, and sarcoma have, in many instances, been destroyed by the caustic sparks from a metallic electrode connected to one terminal of a coil transformer, the other terminal being grounded or connected with the patient. As a means of aborting furuncles, the author knows of nothing better than the plan just referred to.

Treatment of Acute Otitis Media Purulenta and Mastoiditis by Means of an Artificially Induced Hyperemia (Bier's Method).—After allusions to the general development of Bier's ideas, S. J. Kopetzky gives the result of his personal experience in six cases of acute purulent otitis media with mastoid involvement. Duration of treatment varied from one to eleven days. All but one case were relieved without operation, the ear becoming normal in about a week. The author does not believe in the application of the Bier principle by means of suction cups, but prefers the use of the bandage in the conditions named in his title. The mode of application is thus described: The patients are put to bed after the performance of a paracentesis, and receive about their neck the application of a rubber slightly elastic bandage, one to one-half inches in width (children one-half inch), and suitably long to fit snugly around the neck. This is fastened at the ends by hook and eye. The pressure maintained must be sufficient to cause only a slight cyanosis of the

face, but not so tight that pain is felt in the congested region, which should be warm to the touch. The regulation of this pressure is soon learnt by experience. During the course of treatment, the rubber stretches and therefore the bandage must be frequently inspected, and if necessary tightened. The bandage is placed in position in the morning and remains in place twenty-two hours; after a pause of two hours it is again replaced. The induction of hyperemia of the head is facilitated by raising the foot of the bed so that the patient's head shall be lower than his feet. The author finds that this aids considerably, and the bandage need not be applied as tightly as when this procedure is omitted. Where pus is evidenced superficially over the mastoid region, Bier's method demands incision into the suppurating mass only large enough to afford egress to the purulent contents of the abscess; no packing is introduced into the cavity.

Value of the Blood Count in Sepsis.—Observations in nearly two thousand surgical cases have convinced F. E. Sondern of the value of the blood count in sepsis. The usual findings are, an increase in the relative proportion of polynuclear cells on differential count above 85 per cent., and the higher the proportion, the more virulent is the pyogenic process. This is associated with a greater or lesser degree of leucocytosis; and the higher the leucocytosis with a given percentage of polynuclear cells, the better ordinarily is the body resistance toward the infection at the time the blood examination was made. A slight polynuclear increase with pronounced leucocyte increase indicates slight infection and well-marked body resistance. A pronounced polynuclear increase associated with a pronounced leucocytosis indicates a severe infection and good body resistance. A pronounced polynuclear increase and little or no leucocytosis indicates a severe infection and little or no body resistance. The observation is not recent that an absence of leucocytosis in severe inflammatory lesions is a bad prognostic sign. If a differential count is made the high relative polynuclear percentage will also be found. An increasing polynuclear percentage and stationary or decreasing leucocytosis indicates an increasing degree of infection and decreasing body resistance. A decrease both in the polynuclear percentage and in the leucocytosis denotes improvement. If pus is confined by dense pyogenic or fibrous membranes, there is no absorption of toxins, and consequently no leucocytosis or polynuclear increase. These may occur in pneumonia, erysipelas, scarlatina, and occasionally in malignant disease, and here the blood count would be of little value in differential diagnosis. Experience also teaches that a septic condition occurring as a secondary or mixed infection with tubercle bacilli, typhoid bacilli, and possibly a few others, presents a lower relative polynuclear percentage than we would obtain if the staphylococcus or streptococcus infection was a primary one

Journal of the American Medical Association, June 23, 1906.

A New Supplementary Color Vision Test.—N. M. Black remarks on the defects of the color vision tests usually employed, the inability of the Holmgren test to detect all forms of color defects, the failures of the lantern tests, especially in color myopia, etc., and describes a device of his own in which are utilized the optical laws that reduce the apparent size of an object when looking through the wrong end of a telescope. The apparatus consists of a tube with a dead black lining mounting a combination of biconcave lenses and fixed in a screen so as to prevent the subject of the test from seeing the source of the illumination, which consists of three standard semaphore lanterns arranged in a right-angled triangle at a given distance from the tube. These are fitted with frames in which the various colored glasses used for the tests can be placed. An attempt to produce the effects of fog, smoke, steam, rain and lowered intensity due to different atmospheric conditions, is made by interposing ground glass, smoked glass, etc. The person examined sits behind the screen and looking through the tube is asked to say what the different signals indicate, according as the lenses are adjusted to produce the effects of distance and the various conditions met with in actual railroad practice. The test, he says, "fits exactly the conditions found in practice. The objects used in testing are the same used in actual practice, the person tested is required to designate what he sees, either by name or to indicate its meaning, which he does in practice. The fault of all lantern tests is overcome by simulating distance by a relative reduction of the size of the image. The factor which gives the success to the Holmgren worsted test, that of comparison, is followed, the impression of distance is maintained, and the test may be used as an office test. The only thing we cannot do is to produce a gale of wind or a rain storm or the roar and noise of the engine for the benefit of the candidate while being examined." Formulas are given for the lens adjustments for apparent distance, also figures of the apparatus.

Meningitis in Infancy.—In the forty cases analyzed by J. L Morse, the diagnosis was made in every case by autopsy or lumbar puncture. A marked predominance of mononuclear cells in the spinal fluid was considered diagnostic of the tuberculous form, and of polynuclear cells of the cerebrospinal form. The meningococcus was found in all but three of the cerebrospinal cases. His careful analysis of the symptoms shows quite a different picture from the usual one given in the text-books; in only four of the cerebrospinal type was there the usually looked for sudden onset, and in seven of them there were no symptoms pointing directly to the nervous system until after several days or two weeks. On the other hand, the onset was sudden, with convulsions or stupor in four of the tuberculous cases. The short duration in many of the tuberculous cases and the long duration of many of the cerebrospinal cases was also very striking. The tuberculous form has a more sudden onset and a shorter course than in the adult, and the symptomatology of the two types is essentially the same, there being only a slight predominance of signs of spinal and to a less extent of cerebral irritation, in the cerebrospinal form, but not enough to justify a differential diagnosis. A positive diagnosis between the two forms is impossible by the symptoms alone, and can be made only by examination of the cerebrospinal fluid obtained by lumbar puncture. A high leucocytosis may be present in tuberculous meningitis, as well as in the other form, though not so characteristic. The history of the case is of value in making the diagnosis, but it is often wanting. Lumbar puncture has no curative value in cerebrospinal meningitis, but is very useful for the relief of symptoms in both forms. Twenty cases of each form, all in patients in the Infant's Hospital, Boston, furnished the material for the study.

Joint Manifestations in Hemophilia.—E. W. Ryerson says the possibility of hemophilia should be kept in mind in doubtful joint affections, and a thorough study of the case will then lead to a correct diagnosis. In the first stage aspiration of some of the fluid may be necesssary, and the procedure is harmless if done with a very small needle and with all proper precautions. The principal conditions likely to cause confusion in this stage are acute synovitis and intermittent hydrops or hydrarthrosis. In the former there is usually a history of more severe injury, more local pain and tenderness, and the effusion disappears more slowly. Intermittent hydrops is a very rare disease, characterized by intermittent mild joint effusions occurring without antecedent traumatism, and each attack followed by complete recovery. The various infectious forms of arthritis are much more painful and persistent and attended with more constitutional disturbance; the antecedent disease also suggests the diagnosis. In the hemarthroses of the hemorrhagic diseases, such as purpura, etc., the accompanying petechiæ are indicative of the cause. In the second stage of hemophilic hemarthrosis, with its thickened capsule, limited motion and beginning flexion, tuberculosis is suggested, but the absence of true spasticity, of free fluid in the joint and of local tenderness, together with the lack of temperature, help to exclude that disease. Arthritis deformans is distinguished by its slow onset, multiple involvement of joints, and the presence of bony or cartilaginous exostoses. In the third stage the clinical picture may be exactly that of an old tuberculous joint, with complete ankylosis and without evidence of suppuration and a complete history of the case may be required. Before operating on any old ankylosis in which hemophilia cannot be positively excluded, a test of the coagulability of the blood should be made. For treatment of the first stage, Ryerson advises aspiration with a fine needle, followed by injection of adrenalin solution and a bandage for six hours. Use of the joint and massage are advised if aspiration cannot be done. No fixation should be used after the first day. In the later stages, with a tendency to flexion, traction, followed by a splint or cast is advised. Ankylosis in flexion might be corrected by forcible measures, but any cutting operation must be sedulously avoided.

The Lancet, June 9, 1906.

Cannabis Indica in Tetanus After Childbirth.—Two cases successfully treated are reported by A. M. Smith. A third case similarly treated died. Of the two former, Case 1 was not seen until ten days after labor. The woman, a Mohamedan, was thirty years old. She was put on tincture of cannabis indica, 15 minims of the tincture q. 3 h. for twelve hours, and then the same dose, q. 4 h. for three days. The dosage was gradually reduced, until the ninth day, when she was taking 6 minims t. i. d. Tetanus was well marked when the treatment

began, but the latter at once alleviated the spasm, and by the fourteenth day the patient was practically well. Case 2 occurred in a Hindoo woman of twenty-five years, in whom tetanic symptoms first appeared sixteen days after delivery. Cannabis was given freely, as in Case 1, and on the sixth day the patient was up and able to walk. The uterus was not curetted in Case 1, but was so treated in Case 2, though not till the fifth day (twenty-fourth after delivery), after admission to the hospital. In both cases the child did well.

Deep Alcohol Injections in Facial and Other Neuralgias and in Histrionic Spasm.—From this method, F. Ostevath claims entirely satisfactory results in more than 90 per cent. of all cases. He employs about a dram of 80 per cent. alcohol containing a sixth of a grain of cocaine or stovaine. He is able to reach, by injections, not only the third, but also the second and first branches of the fifth cranial pair at the very points where they emerge from the apertures at the base of the skull. Full anatomical directions are given in regard to these matters and must be consulted in the original paper. The effect of the injections is felt not only in anesthesia, but there is also a paralysis in which the masticatory muscles incompletely share. This is temporary, however, though it may last two or three months. These results show that the alcohol produces an actual nerve degeneration, which is recovered from, though fortunately the condition of pathological irritability which produced the neuralgia rarely returns with the recovery of nerve function. Relapses are apt to occur in about one-third of the cases, and then, as a rule, about five months after the first treatment. The author has observed no accidents from his several hundred injections. The same plan of treatmet has been applied to cases of histrionic spasm and sciatica.

Pneumococci Peritonitis in Children.—Summarized histories of sixteen fatal cases are given by W. F. Annand and W. H. Bowen. They say that prognosis depends on the following factors: (1) Whether the peritonitis is local or diffuse; (2) whether an operation is or is not performed and, if performed, whether or not at a suitable time; (3) the previous presence or the onset of a severe complication. Whether the peritonitis is primary or secondary, providing there is no other complication, does not appear to affect the prognosis to any material extent, according to the results in 91 cases tabulated. Of this number 45 had encysted peritonitis, of which 44 were operated on, and of these 37 recovered and six died; in two the result is uncertain. The other 46 cases were of the diffuse variety, of which 18 underwent operation. Of the 18 cases operated on, 6, or 33.3 per cent., recovered, whereas all those not operated on died. The one case of the local variety not operated on recovered by spontaneous evacuation of the pus. The above table shows that recovery occurred in 86 per cent. of those with the encysted form, while only 14 per cent. of the cases with the diffuse variety survived. The authors present the following summary of their views: (1) Pneumococcic peritonitis is a comparatively rare disease in children, but in the past many cases have not been recognized; (2) it is in about a third of the cases secondary to some remote pneumococcal lesion; of these affections of the lungs and pleuræ are by far the commonest, the middle ear being the next most common site. The infection is carried to the peritoneum in the blood stream. (3) In the remaining two-thirds the peritoneum is probably infected from the bowel in the vast majority. No microscopic lesion is, as a rule, found. (4) In half the cases the pus is encysted; in these the diagnosis is fairly easy, the prognosis is good, and the treatment is laparotomy and drainage. (5) In the other half of the cases the peritonitis is diffuse, the diagnosis is very difficult, and the prognosis very gloomy. The treatment is laparotomy. (6) The pathological appearances are characteristic.

British Medical Journal, June 9, 1906.

Successful Amputation of the Leg at 94 Years With an Account of a New Operation.—In a West Indian woman of the age stated, who had been knocked down with the result that the lower third of the leg sustained a compound fracture, C. W. Branch did a successful amputation, the patient being discharged well at the end of five weeks without any special complications during healing. The mode of operating is thus described: The left hand seizes the outer side of the leg at the point of section of bone, thumb to the front. The skin over the tibial surface is drawn forcibly outwards, the point of the knife is made to enter at the edge of the tibia, graze the fibula, and emerge as far inwards as possible on the back of the leg, and a flap is then cut downwards. On releasing the leg the front of the incision flies inwards, so that it is now possible to enter the knife and clear the tibia to reach the point of exit behind, and cut the internal flap, which should equal the external. With the catlin a semilunar periosteal flap is cut from the front of the tibia, and quickly stripped upwards, the bones cleared, and the saw entered first obliquely, then straight, in the usual way, so as to take off the front corner of the tibia. This point of bone is in the anterior angle of the wound, but being covered by the periosteal flap, never becomes adherent. Two acupressure pins are inserted between the bones crosswise, so that the anterior and posterior tibial arteries lie in the opposite angles. A stout silk is now wound by figures-of-8 so as to close the pins together and compress the arteries. The pins are slightly withdrawn from their cannulæ, so that the points are hidden, and the tourniquet removed. Two sural vessels in the heads of the gastrocnemius usually require ligature, and nothing remains but to suture, leaving the heads of the pins and the end of their silk protruding from the anterior angle of the wound. The pins are removed about three or four days after, and the silk, then loose, easily comes away.

The Infectivity of Enteric Fever.—W. Wright and W. Archibald relate the histories of a small epidemic of seven cases. The first case seems to have infected the other six. All occurred in the same tenement (Glasgow), all were under ten years of age and were playmates in the lobbies and on the stairs of the building. The view that the water-closets may have served as a source of infection is negatived by the fact that none of the adults (twenty-eight in number) resident in those three flats were attacked, and it is not thought that the situation of the houses in respect of their water supply, some being placed on different sides of the stair, was a factor in the causation. The evidence points strongly to personal infection during play, and, this method of spread of enteric fever being comparatively rare, it was deemed worthy to place these cases on record.

General Convulsions in Early Infancy Induced by the Taking of Food.—Eustace Smith discusses this question in its relation to pyloric obstruction in the infant. He has seen certain cases in which a healthy infant has been thrown into violent convulsions a few minutes after some simple meal without any preceding vomiting or other evidence that the food did not completely agree. All the cases have been in bottle-fed babies. The author brings the matter up because in his view such cases throw a strong light on the mechanism of pyloric obstruction in the newly-born. He believes this condition due, in the beginning, to a reflex spasm of the pyloric wall, caused by the taking of food, and that a continued repetition of the contraction determines a hypertrophy of the muscular layers surrounding the opening. He calls attention to the tendency to local spasm in infants. It may be said that if pyloric obstruction were due to local spasm induced by gastric irritation, the cases of general convulsions here described should all of them have been complicated by spasm of the pylorus, but he declares that such a conclusion does not necessarily follow, and he sees nothing unreasonable in believing that gastric irritation may set up general convulsions without pyloric spasm or pyloric spasm without general convulsions or both together.

Clinical Features of the Several Types of Colitis.—H. A. Caley makes the following decisions of colitis cases: (1) Catarrhal (acute, primary and secondary and chronic, irritative, or atonic and spastic); (2) membranous, (3) parietal colitis and pericolitis, and (4) ulcerative (endemic, epimedic, or sporadic), and his paper is an elaboration along these lines. The various symptoms of each form are taken up in turn and an endeavor made to present contrasting clinical pictures. Of special interest are his observations in regard to the causative relation of influenza to colitis. This relationship may be traced in the following ways: (1) Influenza of the gastro-intestinal type may present symptoms of acute or subacute colitis, though a general enteritis is more common; the colitis may rapidly subside or it may pass into a chronic phase; (2) chronic colitis, catarrhal or membranous, may be much aggravated by an attack of influenza: indeed, the latter is a fruitful cause of relapse in cases of colitis otherwise doing well; (3) colitis may apparently originate in an attack of influenza, the bowel symptoms dating from that time, and in such cases it is highly probable that the lowered nervous tone so conspicuous an after-effect of influenza plays an important part.

Berliner klinische Wochenschrift, June 4, 1906.

The Nasal Treatment of Epiphora.—Meyer states that in many cases of this affection the fault lies with the conformation of the lower turbinated body. This hugs the outer wall of the nasal passage more closely than it should, and obstructs the lower opening of the tear duct. It is undesirable, however, to cut away entirely the turbinated body, as this leads to respiratory difficulties brought on

by the removal of so large a proportion of the mucous surface of the nasal passage. The author's operation, which has been found very effective, consists in forcibly twisting the obstructing ledge toward the septum through an angle of thirty to forty-five degrees by means of a suitable forceps. The bone is fractured in doing this, so that there is no tendency to a return to the original condition, and in proper cases the effect in checking the overflow of tears is very marked.

Observations on the Formation of Leucotoxin Through the Action of the Röntgen Rays.—Milchner and Wolff describe experiments on animals and on exudates which cause them to maintain a conservative attitude in regard to the prevailing view that through the action of the Röntgen rays a toxic substance or leucotoxin is derived from the leucocytes. While they admit that great destruction of the leucocytes is caused in this way, they are not willing to concede that the toxic substance is the result of the breaking down of the leucocytes. The polynuclear cells appear to be more resistant to the action of the rays than the others, and on subjecting living excised spleens to the rays great destruction of tissue was caused and the extract from the organ gave rise to leucopenia when injected into animals.

Münchener medizinische Wochenschrift, June 5, 1906.

A Case of Unexplained Fever With the Highest Recorded Temperatures.—Heller describes the case of a fifteen-year-old girl, who went through an illness of about a week's duration, of which the only objective symptoms of note, in addition to the fever, were moderate swelling of the spleen and a soft systolic murmur. The temperature was remarkable, however, in that on one occasion it reached 44° C. and on several others 45° C., the upper of which limits has, according to the author, never before been reported. In taking the temperature four different thermometers of tested accuracy were used and the readings were checked by three other persons in addition to the author. All of the manifestations usually attending high fever were absent in this case. The tongue was moist and not coated, the sensorium was not affected, the heart was comparatively quiet, and there were no urinary changes.

A Case of Permanent Spinal Paralysis Following Spinal Anesthesia.—Kōnig's patient was a man of thirty-five years, who fell while drunk and fractured his left patella. A week later the fragments were united by suture under spinal anesthesia. The patient did not regain either motion or sensation below the level of the umbilicus; that is, including the bladder and rectum. Death followed three months later, attended by the usual complications of cystitis and bed sores. At the autopsy there was found evidence of a serofibrinous inflammation of the spinal membranes, but there was no meningitis, and cultures made from the spinal liquid, obtained on two occasions by lumbar puncture, remained sterile. The spinal cord itself was found softened in the lumbar and dorsal regions. The author thinks that the possibility of infection can be excluded, and ascribes the unfortunate result to toxic action. At the lumbar puncture, made for the purpose of the original injection, the spinal fluid was slightly pink, and it is suggested that perhaps this indicated some already existing abnormality of the cord, which rendered it more susceptible to damage by the anesthetic agent injected. The author cautions against using the method unnecessarily, or if the spinal fluid is in any way abnormal.

Blood-Pressure Determinations.—Schilling reports clinical observations and experiments on calves made in order to determine the part played in blood-pressure determinations by the width of the armlet used. Most modern authors, including v. Recklinghausen and Janeway, are in favor of the 12 cm. armlet, although Sahli considers that the narrow band gives a more accurate criterion, his point being that the lower pressures obtained with the wide armlet depend on the fact that the pulse wave is forced to perform work in passing under the constriction and therefore becomes extinguished at the periphery before the pressure under the armlet has quite reached the true arterial pressure. The authors, however, agree with those observers who prefer the wide armlet, and state that the 12 cm. armlet is the most accurate one for clinical use. They found that the arterial pressure of the normal male adult lies between 110 and 125 mm.

Deutsche medizinische Wochenschrift, June 7, 1906.

The Treatment of Black Water Fever.—Dammermann considers that the malarial infection is the underlying cause of the development of this complication, which is evoked, however, by the administration of quinine. He describes one case in which three different attacks of hemoglobinuria were caused in the course of a protracted malaria by the administration of even very small amounts of quinine, and others in which death was caused in this way. Contrary to the statements of some observers, he does not believe that the subcutaneous administration of quinine lessens the risk of the development of the renal lesion which consists in the plugging of the tubules with damaged red blood cells. The author's treatment consists in the administration of large amounts of milk and a tablespoonful of two-per cent. potassium acetate solution every hour or two in order to excite diuresis. If milk cannot be obtained or is not retained by the patient, water or large saline rectal injections are to be substituted. Patients with malaria who have already suffered from black water fever after taking quinine should be treated by means of an infusion of the leaves of *Combretus raimbauthii*, a native fever remedy in use on the west coast of Africa, which, in the author's opinion, should be imported into Europe.

The Treatment of Leprosy with Iodoform.—Diesing has treated five patients with leprosy by means of subcutaneous injections of large quantities of iodoform, and considers that a permanent cure has been effected in these cases. The remedy was used in the form of a 30-per-cent. emulsion in olive oil, of which from 2 to 8 c.c. were injected daily under the skin in the neighborhood of the affected areas, and later, when these had become normal, in the subcutaneous tissues of the back, chest, and flexor surfaces of the extremities. He explains the superiority of this form of iodine medication by assuming that on coming in contact with the tissues, the air being excluded, nascent iodine is set free and attacks the leprosy bacilli. He also suggests that the remedy be tried in tuberculosis; the good results obtained in its use locally for joint affections indicating that when employed in more courageous doses it would produce equally satisfactory effects in pulmonary tuberculosis. The large doses employed by the author never gave rise to symptoms of intoxication.

Antiperistalsis in the Stomach.—Jonas says that reverse peristalsis or antiperistalsis of the stomach is not so rare as is supposed, and that if carefully looked for it can often be detected. He describes six cases in which it was clearly demonstrated by direct observation with the fluoroscope after having the patients swallow a mixture of gruel, bismuth subnitrate, and sugar of milk. In five of these cases pyloric stenosis was present, and in the sixth it appeared that pylorus was not normal and was probably responsible for the reversal of motion in the organ. It therefore appears that a connection exists between pyloric stenosis and antiperistalsis, but in view of the many cases of the former condition unaccompanied by the latter it is evident that some further element must also be involved.

French and Italian Journals.

Perforations of the Interauricular Septum.—Bériel divides interauricular communications into two groups: the persistent foramen ovale and perforations proper. It is impossible to say at exactly what time the foramen ovale closes, since its persistence has been noted by different authorities in children of various ages. The perforations proper may consist of a cribriform condition of the septum; simple perforations; or the more or less complete absence of the septum. The sieve-like septum is observed generally in young patients with other cardiac malformations. Cases of simple perforation are more frequent. In extreme cases of absence of the septum there exists only one auricle. In these cases there are generally various other deformities of the different parts of the heart and the blood-vessels. As to the etiology of these formations it is impossible to establish a rigorous classification. It must be admitted, however, that there exist perforations both congenital and acquired. The writer intersperses a number of interesting observations, which, together with cuts, illustrate his statements.—*Revue de Médecine*, May 10, 1906.

A Case of Calculus of the Submaxillary Gland.—G. Alexandre states that cases of this nature are not common. The patient whose history is given here was a woman fifty years old. Her family history was negative. There was little of interest in the personal history. When first seen by the writer she stated that for the last thirteen or fourteen years she had had an enlargement under the left side of the lower jaw. The size of this tumor had gradually increased, although it varied from time to time. There was no discoloration of the tissues. Palpation discovered an indurated and resistant mass movable under the skin and having the form of the submaxillary gland. For years the patient had no pain, but for the last six months she had suffered from this growth. Eating, however, was very easy. Nothing abnormal was noted on examination of the mouth. The gland was removed successfully. On transverse section a calculus as large as a big pea was found. Chem

ical examination showed it to be composed of water, carbonate of lime, phosphate of lime, and organic matter. Bacteriological examination resulted in growth of a pure culture of leptothrix. This microorganism is always found in the mouth.—*Revue de Chirurgie*, May 10, 1906.

Muciparous Epithelial Cancer of the Lung.—Sabrazés and Muratet report the history of a woman fifty-one years old who had all of the physical signs of a large right-sided pleural effusion together with extreme pain, intense dyspnea, and rapid emaciation. A wooden dullness was noted at the summit. There was prosternal edema with distention of the right jugular. Puncture with a fine needle was negative. Death occurred in asystole. The liquid of the effusion was pale yellow and thick, giving the chemical reactions of mucin. The mucus originated in the right lung, which was invaded by a primary malignant tumor, a muciparous epithelial cancer. This tumor was polymorphous. The hypersecretion of mucus was a very striking feature.—*Le Progrès Médical*, May 12, 1906.

Treatment of Tardy Diphtheritic Paralysis.—Comby calls attention to the fact that the successful outcome of the treatment of diphtheritic paralysis by antidiphtheritic serum has been doubted. The writer reports another case as a proof that the results of this treatment are very encouraging. The patient was a girl fourteen years old. An attack of diphtheritic angina which was not recognized at the time was followed by paralysis of the soft palate, strabismus with diplopia, paralysis of the lower extremities with paresis of the muscles of the trunk, nape of the neck, and upper extremities. For two months the only treatment consisted of injections of cacodylate of soda, but the paralysis was only accentuated. After the entrance of the patient into the hospital, however, the writer treated her with injection of Roux's serum. In forty-eight hours the condition began to improve and within a few days recovery was complete.—*Le Bulletin Médical*, May 19, 1906.

Hot Baths in Bronchopulmonary Diseases of an Acute Nature in Infants.—Gaetano Finzil finds great difference of opinion among authorities with reference to the use of hot baths in acute bronchopulmonary lesions in infants. He submits the results obtained by him in the treatment of such cases. Hot baths are more easily permitted by the parents, who fear the action of cold on the lungs. The author uses the bath at a temperature of 37° to 39°, that is, a few degrees less than the temperature of the child treated. If the child is depressed he precedes the bath by a stimulant and adds mustard to the water. After the bath the child is at once wrapped in flannel and is allowed to rest a half hour covered up in bed. The author has treated thirty-two children under one year in this way. The results have been excellent and he refers the benefit to these factors: 1. The increased inspiration during the bath, and the hot vapor which is inspired. This favors elimination of the mucus which lines the bronchi and increases expectoration by lessening the thickness of the mucus. 2. The surface of the skin, after a short period of contraction of the capillaries, presents dilatation of these and the skin becomes very red and covered with sweat. The determination of blood to the surface relieves the bronchial congestion. 3. The profuse sweat favors the elimination of the poisons produced in the system by the disease.—*Annali di Elettricità Medica e Terapia Fisica*, March, 1906.

Injections of Biniodide of Mercury in Syphilis.—Eugenio Sipari records his observations of twenty cases of syphilis treated by hypodermic injections of biniodide of mercury in aqueous solution combined with iodide of sodium. His conclusions are these: The solution acts very favorably on all syphilitic lesions, especially those of the tertiary stage; the rapidity of action is marked; the efficiency is marked, greater in some instances than that of calomel or corrosive sublimate; the injections are not painful; they do not produce nodules of infiltration, or such as are produced are indolent; they are always well borne; they do not produce mercurial stomatitis under the usual conditions. For all these reasons biniodide of mercury in solution with sodium iodide used by hypodermic injection may be regarded as one of the best preparations for the treatment of syphilis, especially in the tertiary stage.—*Giornale Internazionale delle Scienze Mediche*, April 30, 1906.

Prophylaxis and Treatment of Vulvoperineal Lacerations.—C. Morletti discusses the best method of delivery of the head to prevent laceration of the perineum. He considers that the best method which accomplishes the delivery of the head in two separate acts, extracting first the maximum transverse diameter and then the maximum anteroposterior diameter. This is best theoretically and gives the best results practically as well. He discusses the convenience of episiotomy and estimates its advantages and disadvantages, condemning the technique usually made use of in incision of the vulva; he would substitute for the cutaneous incision one on the surface of the mucous membrane, since he believes that the resistance is usually in a situation corresponding with the level of the remains of the hymen. For repair of the perineum he makes use of the method of Bumm, the sutures being horizontal through the entire thickness of the perineum, three or four in number, since it permits of the repair of lacerations of the third grade and gives a fair resistance to the infiltration of the lochia.—*La Riforma Medica*, May 5, 1906.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

THE PRACTICE OF GYNECOLOGY. By Eminent Authorities. Edited by J. WESLEY BOVÉE, M.D. 8vo, 836 pages, illustrated, muslin. Lea Brothers & Co., Philadelphia. Price, cloth, $6.00, net; leather, $7.00, net; half morocco, $8.00, net.

UBER DAS WESEN UND DIE VERBREITUNG DER WURMKRANKHEIT (ANKYLOSTOMIASIS). Von Dr. LÖBKER und Dr. HAYO BRUNS. Sonderabdruck aus "Arbeiten aus dem Kaiserlichen Gesundheitsamte." Twenty-third Year, Vol. II. 4to, 102 pages, illustrated, paper. Julius Springer, Berlin.

THE SUBCONSCIOUS. By JOSEPH JASTROW, Professor of Psychology, University of Wisconsin. 8vo, 549 pages, muslin. Houghton, Mifflin & Co., New York. Price, $2.50, net.

MANUAL OF DISEASES OF THE EAR, NOSE, AND THROAT. By JOHN JOHNSON KYLE, B.S., M.D. 12mo, 595 pages, illustrated. Flexible leather. P. Blakiston's Son & Co., Philadelphia, Pa. Price, $3.00.

THE AUTOTOXICOSES, THEIR THEORY, PATHOLOGY, AND TREATMENT. By HEINRICH STERN, Ph.D., M.D., etc. 12mo, 222 pages, muslin. G. P. Engelhard & Co., Chicago. Price, $1.00, postpaid.

THE MORPHOLOGY OF NORMAL AND PATHOLOGICAL BLOOD. By GEORGE A. BUCKMASTER, D.M. (Oxon.). 8vo, 244 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $3.00.

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ON LEPROSY AND FISH EATING. By JONATHAN HUTCHINSON, F.R.S., F.R.C.S., LL.D., D.Sc., M.D. 8vo, 420 pages, illustrated, muslin. W. T. Keener & Co., Chicago. Price, $3.25, net.

TRANSACTIONS OF THE NATIONAL ASSOCIATION OF UNITED STATES PENSION EXAMINING SURGEONS. Vol. III. Fourth annual meeting, Chicago, July 7 and 8, 1905. 8vo, 93 pages, muslin. Published by the Association at Rochester, N. Y.

ENIGMAS OF PSYCHICAL RESEARCH. By JAMES H. HYSLOP, Ph.D., LL.D. 12mo, 427 pages, muslin. Herbert B. B. Turner & Co., Boston. Price, $1.50, net.

OUTLINES OF APPLIED ANATOMY WITH SPECIAL REFERENCE TO SURFACE LANDMARKS. By RICHARD J. A. BERRY, M.D., F.R.C.S.E., F.R.S.E. 8vo, 244 pages, illustrated, muslin. J. B. Lippincott Company, Philadelphia.

TWENTY-NINTH ANNUAL REPORT OF THE BOARD OF HEALTH OF THE STATE OF NEW JERSEY FOR 1905 AND ANNUAL REPORT OF THE BUREAU OF VITAL STATISTICS. 8vo, 396 pages, muslin. J. L. Murphy Publishing Company, Trenton.

INTERNATIONAL CLINICS. Edited by A. O. J. KELLY, A.M., M.D. Vol. I, Sixteenth Series, 1906. 8vo, 309 pages, illustrated, muslin. J. B. Lippincott Company, Philadelphia.

GENERAL MEDICINE. (The Practical Medicine Series, Vol. I.) Edited by FRANK BILLINGS, M.S., M.D., and J. H. SALISBURY, A.M., M.D. Series 1906. 12mo, 369 pages, muslin. The Year Book Publishers, Chicago. Price, $1.25.

GENERAL SURGERY. (The Practical Medicine Series, Vol. II.) Edited by JOHN B. MURPHY, A.M., M.D., LL.D. Series 1906. 12mo, 583 pages, illustrated, muslin. The Year Book Publishers, Chicago. Price, $2.00.

PRAESCRIPTIONES. Rezept-Taschenbuch für die Praxis. Von Dr. EMIL KANTOROWICZ. 12mo, 190 pages, paper. August Hirschwald, Berlin. Preis M. 2.

ON CARBOHYDRATE METABOLISM. By F. W. PAVY, M.D., LL.D., F.R.S. 8vo, 138 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $2.40.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-seventh Annual Meeting, Held in Boston, June 5, 6, 7, and 8, 1906.

(Special Report to the MEDICAL RECORD.)

(*Continued from page* 1036.)

SECTION ON MEDICINE.

Fourth Day—Friday, June 8.

Value of Tests for Invisible Hemorrhage in Diagnosis and Treatment of Diseases of the Digestive Organs.—Dr. FRANKLIN W. WHITE of Boston said that the methods which till recently had been most used by clinicians were Teichmann's test for hemin crystals, and the spectroscope, but they both must yield in simplicity and delicacy to the recent guaiac and aloin tests, which could easily be carried out by the practicing physician without other apparatus than a test-tube and a few simple drugs. The technique was as follows: 10 c.c. of feces was rubbed up with a little water, or 10 c.c. of gastric contents was shaken with 2 c.c. of glacial acetic acid and then extracted in a test-tube with an equal volume of ether by gently shaking back and forth. The test-tube was allowed to stand until a clear layer of ether separated; the latter was poured off and tested for blood by the addition of 10 drops of freshly prepared tincture of guaiac or aloin, and 30 drops of hydrogen peroxide or well ozonized turpentine. In the presence of blood the guaiac gave a clear blue color and the aloin a clear cherry red. In conclusion he said that (1) the guaiac or aloin test for invisible blood was, in spite of exceptions, the most valuable single clinical method recently developed for the recognition of latent cancer and ulcer; (2) the method was very delicate and yet so simple it could be easily carried out by the practicing physician; (3) the value of the test depended upon the care with which other sources of bleeding were excluded; (4) the test in the stools had greater value; both positive and negative results were significant; positive results in gastric contents were often misleading; (5) never be content with one examination; (6) in ulcer the chief value of the test was to distinguish it from a neurosis, as a premonitory symptom, as a measure of the result of treatment, in prognosis; (7) in cancer, in diagnosis from an acid gastritis, achylia, pernicious anemia, and similar conditions; (8) in general, it had great value in ruling out hemorrhage in a suspected case.

Studies on Cardiospasm.—Dr. BERTRAM W. SIPPY of Chicago reported the history of one case of cardiospasm in detail, and said that he had seen altogether fourteen cases. He showed his dilatating instrument, and demonstrated its use. He also showed a specimen of esophageal dilatation.

Non-Calculous Cholecystitis.—Dr. A. O. J. KELLY of Philadelphia considered the causes of cholecystitis, the infectious agents, and modes of infection, and reported cases illustrative of the different types of the affection. He made an analysis of the symptomatology, based on a study of thirty-five cases operated on by Dr. Deaver at the German Hospital, Philadelphia; he made a contrast of the symptomatology of these cases as compared with one hundred and eighty-one patients exhibiting gallstones at operation. He spoke of the remote consequences of cholecystitis, and made suggestions as to its treatment and the indications for operative interference.

Differential Diagnosis Between Duodenal Ulcer and Gallstone Disease.—Dr. CHRISTOPHER GRAHAM of Rochester, Minn., in summing up his paper, said that pain in cholecystitis was sudden and severe, usually had a wide field of radiation, came with no regularity as to time, was rarely caused by food and as rarely eased by it, nor did the patient often trace his distress to it. There was no stomach history between the short, sharp attacks; spasm of the diaphragm, with dyspnea, was common, vomiting and gas, if present, were so only during the colic, and the relief from eructation and vomiting was not so marked as in ulcer. Nausea and intense retching might be followed by vomiting of a small amount of thin yellowish liquid, mixed with mucus. In duodenal ulcer, the pain came in periods of attack lasting for days or weeks, often were sudden, might be severe, but usually not that intense type of pain met with in gallstones, but rather gnawing and burning in character. It might be irregular as to the time of the separate attacks, but quite regular during the period of the stomach disturbance. The pain was clearly related to food, the intensity often modified by kind and quantity taken; the food eased for a time, but the pain returned two to four hours later. Drinks (hot), soda, and irrigation gave relief. Spasm of the diaphragm was rarely seen except in some cases of perforation. The chronic gallstone case, with impacted stone, ulceration, and adhesions, where no jaundice appeared and where the stomach symptoms, as gas, vomiting, burning distress, sour eructations, impaired appetite, and dilatation, predominated, and where the pain was moderate and followed the taking of food, would too often be diagnosticated ulcer; while the duodenal case, in whose history we could elicit only irregular attacks of sudden, sharp, intense pain of peritonitis or acute spasm (and with no obstruction or hyperacidity, no gas, vomiting, or sour eructations), would be as surely mistaken for gallstones.

Dr. S. J. MELTZER of New York, in discussing Dr. Sippy's paper, said that so far as his knowledge of the literature went Dr. Sippy had seen the greatest number of cases of cardiospasm; no one man had seen so many as fourteen. Out of justice to himself, Dr. Meltzer wished to have it known that the first case of this condition was described by him in 1888, and until that time no one had published any case.

Dr. GARRY DE N. HOUGH of Massachusetts spoke of the abnormal sites of the pain in gallstone disease and said he had seen three cases in which this pain was referred to the left side, a kind of local colic, and in three other cases the pain was in a situation hitherto not described, *i.e.* at the left sacroiliac synchondrosis, one inch below the umbilicus and a little to the right of the median line, but associated with tenderness in the gall-bladder region.

Dr. GEORGE W. MCCASKEY of Fort Wayne, Ind., said that all knew there was no tendency in malignant disease to ulcerative processes in the earlier stages, but this was not so true in ulcer. Dr. McCaskey then referred to the changes and grave anemias that followed minute hemorrhages covering a period of time as from the ankylostomiasis and bothriocephalus. Small quantities of blood removed each day finally would produce a very grave type of anemia.

Dr. Sippy said that in his paper now ready for publication on this subject he had devoted at least two pages to Dr. Meltzer, and gave him credit for having seen and published the earliest case.

The Opsonic Index in Medicine.—Drs. NATHANIEL BOWDITCH POTTER, NORMAN E. DITMAN, and ERNEST B. BRADLEY of New York presented this paper. They said that Denys and Leclef first called attention in 1895 to the effect of blood serum on phagocytosis by leucocytes. They were the first to produce reliable experimental evidence that there existed in the blood serum of immunized rabbits substances which altered microbes in such a way as to permit their being ingested by the leucocytes. From careful experiments *in vitro* they concluded that in an immunized rabbit the leucocytes obtained their power of engulfing the bacteria from some property of the serum. The immunized animal fought the bacteria, first, by the direct action of the serum; second, by its leucocytes. The latter always owed to the serum the commencement of their power. Wright and Douglas in 1903 introduced the word "opsonic" (from the Greek word, meaning, "I prepare the food for") to characterize the substance in normal blood which they believed prepared the microbes for

ingestion by the leucocytes. They were able to show that this substance existed in the serum, that it was partly thermolabile, being largely destroyed at 60° C. in ten minutes, and that it acted upon the bacteria and not upon the leucocytes. An extensive review of the literature here followed. To illustrate the method, if it was desired to obtain the opsonic index to staphylococci of a patient suffering, say from acne, equal parts of washed corpuscles, bacterial suspension, and patient's serum were mixed in the pipette and placed in the incubator. In another pipette equal parts of washed corpuscles, bacterial suspension, and normal serum were likewise mixed and incubated. At the end of fifteen minutes smears were made from each specimen, fixed, and stained. The number of staphylococci per leucocyte was obtained in each case by counting the cocci in the first fifty polymorphonuclear neutrophiles encountered and making an average. If the average for the patient's blood was 6 cocci and that for the normal was 8, the opsonic index to staphylococci would be 6-8 or 0.75. The nature of opsonins was then considered and their relation to amboceptors, to toxins and complements, to "stimulins," to leucocytosis, to virulence of bacteria, etc. A table showing their results in a series of patients with various infectious diseases, the experiments being prepared in the Pathological Laboratory of the College of Physicians and Surgeons, Columbia University, was presented. In thirty-six cases of tuberculosis the tuberculo-opsonic index was below normal (0.73) in 25 per cent. of the cases, and above normal (1.2) in 8 per cent. of the cases; in other words, it was abnormal in 33 per cent. of the cases. Of twenty-three cases with infectious diseases other than with the tubercle bacillus, the tuberculo-opsonic index was below normal in 26 per cent. and above normal in 4 per cent. of the cases. The influence of antitoxins on opsonins and vaccines was then considered as well as the clinical application of inoculation of vaccines controlled by estimation of the opsonic index. To show the diagnostic value of the opsonic index three methods had been devised, obtaining the opsonic index in blood serum, comparing the opsonic index of heated with unheated blood serum, and comparing the opsonic index of blood serum with the index of exudate or transudate from the same case. In reviewing the work that had already been done on opsonins the question of what practical use they might have was one of great interest. The great difficulty would arise from the fact that changes more or less profound were indicated at times by but slight variations of the indices, and that the variation was frequently not far beyond the limits of error in a method where opportunities for small errors in technique were numerous. Some aid in diagnosis might already be had by determining a single index; but before this could be considered a reliable method considerable work must be done to determine the degree of specificity of opsonins. A wider field of application would probably be in the control of inoculation of vaccines to determine the optimum dosage and regulation of the same, but this would be somewhat limited by the clinical difficulties of the method. A field as yet but little exploited which might prove of use was in the determination of susceptibility to infection, especially in the inherited susceptibility to tuberculosis. Perhaps its greatest usefulness would be found in the laboratory, where it might prove to be a convenient and rapid method of testing the virulence of organisms and the strength of sera which were dependent upon opsonins for their beneficial effects.

Discussion on the Causes and Treatment of Chronic Headaches.—A series of discussions took place on this topic.

Affections of the Nose and Adjacent Sinuses as a Cause of Headache.—Dr. Cornelius G. Coakley of New York said that the etiology of these headaches was comparatively simple. In the nasal cavities headaches might be caused from spurs, new growths, deviations, the contact of two mucous surfaces causing pressure upon the terminal filaments of the sensitive fifth nerve. In the sinuses headaches might be caused by retention within those cavities of fluids, possibly gas, causing pressure. It should not be forgotten that other things than those found within the nasal cavity might cause headache. Two patients might present themselves suffering from deviations or spurs, causing marked pressure upon the mucous surfaces. Operation would relieve one patient, but not the other. The difficulty was in looking into the nose and seeing two surfaces in contact to determine whether that alone was causing the headaches. It was difficult, from the location of the pain, to determine what sinus was involved. The pain was, as a rule, of a neurotic character, more severe in the morning and relieved with the discharge of fluid from the cavities. They came regularly every day, and therefore were often treated as though they were malarial in origin. The importance of drainage of sinuses was entered into; if then the headaches persisted another cause should be sought for.

The Relation of Eyestrain to Chronic Headache.—Dr. George M. Gould of Philadelphia said that a vast majority of all cases of headache, certainly nine-tenths, were due to eyestrain. In thirty-one years the members of the American Ophthalmological Society had contributed three papers suggesting that eyestrain was the cause of some headache, and one member had contended that nasal disease, not eyestrain, was the cause of frontal headache. But there had been 122 papers on ocular tumors and many hundreds on ophthalmic surgical subjects. While the Governor of Massachusetts in his inaugural address said that untold numbers of children were becoming ruined in health because of headaches, due to eyestrain, leading members of the great ophthalmic societies ridiculed such folly. While one great diagnostician said that all sorts of gastric diseases were often due to eyestrain and cured by glasses, all the stomach specialists in the world, and 99-100 of the oculists in the world denied the truth. While medical journals were teeming with reports of the world's greatest scientist as to the sleeping sickness in Africa the appalling sleeping sickness of the ophthalmologists at home did not at all interest. While from 40 to 60 per cent. of school children, by actual examination, were suffering from headaches and other systemic effects of eyestrain, and while great school teachers were trying to get the oculists to stop it, famous ophthalmic specialists were pretending to refract without a mydriatic and with the ophthalmoscope alone, and, of course, the spectacles they prescribed were ludicrous blunders; consequently their pet amusement was to guy the "eyestrain faddist." He asked why we were caught in such a set of contradictions and absurdities. The answers were many, but one he emphasized. The single explanation of all this wrangling and misunderstanding was that refraction was not a science; their refraction work was not well done. The country physician should take up refraction work because the great mass of working people simply could not pay the fee demanded by the oculists and were forced to put up with the indifferent work of the so-called opticians. The Superintendent of Schools of New York City ordered his hundreds of thousands to carry their books upon one side one half the time, and on the other side the other half. In this same city great classes of poor children were formed in lines and taught to bend their bodies at command to one side, and then to the other. Better would it be to hold a black cat over the cross roads at midnight and mumble a charm! Osteopathy was a wretched thing. Eddyism was rampant in the land and professionally he said we were largely responsible for Mrs. Eddy, her foolish children, and her million dollar temples. As medical men he said we had neglected the attitude of mind of the patient to himself, and to his disease—especially *her* disease! Again the quacks had made use of our refused quarryings as cornerstones for their healing temples. It was ridiculous bigotry to make fun of the quacks we ourselves allowed or created. These quackeries

were not made up entirely of errors, follies, greeds, and stupidities. Every text-book, and almost every monograph and medical journal article would be revolutionized when the oculists agreed; the oculists would not agree until the general practitioners secured the establishment of at least one refraction school, with a two-year, or possibly three-year obligatory course of post-graduate study.

Headaches Due to Aural Disease.—Dr. Philip Hammond of Boston said that the intimate connection between the innervation of the ear and the central nervous system was clearly established by Zuckerkandl, and later observation had offered further clinical proof of this relationship. In some cases the mere presence of cerumen in the canal had caused a most intense headache. Cephalalgia was quite commonly caused by aural disease. Gradle had observed that children especially were likely to have an almost continuous headache from slight obstruction of the Eustachian tubes. Complete relief almost immediately followed inflating the middle ear. In the more chronic adhesive processes in the tympanic cavity the subjective symptoms were not always so definitely referred to the ear. A feeling of fullness in the head, or pressure in the brain might be associated with chronic dry catarrh of the ear. Headaches were occasionally caused by acute inflammation of the middle ear and was usually relieved by paracentesis. The enduring forms of headache were caused by old chronic suppuration. The exfoliated epithelium and other products of the long-continued suppuration collected in the cavities of the middle ear and mastoid, often forming masses as large as a peach stone. They might assume such proportions that they not only filled the unoccupied spaces inside the temporal bone, but by pressure necrosis caused absorption of extensive areas of the bone. It was an exceedingly common occurrence for an ear that had suppurated at some former time to remain apparently dry for many years, with perhaps a few occasional crusts. The treatment should aim at a complete removal of all the diseased tissue, and, in the more advanced cases, where the disease had invaded the temporal bone, nothing short of a complete operation, a radical mastoid operation, would be curative. In any event cessation of discharge would probably mean relief from headache.

Constitutional Headaches.— Dr. George L. Walton of Boston said there was probably no sharply dividing line between constitutional and reflex headaches. In many cases of so-called reflex headache the reflex cause, *e.g.* a slight error of refraction, was only the exciting cause, the inherent make-up of the individual, the underlying cause rendering him susceptible. At one end of the scale existed certain headaches which could only fairly be termed constitutional. Ocular, nasal, or uterine defects might be present (as well as various other signs of deviation, especially including an exaggerated self-consciousness), but their treatment was unavailing. This headache was probably largely due to the physiological sensation of mental fatigue, made unduly acute by the oversensitized receptive centers, the fatigue itself being increased by the patient's inability to mentally relax. Concentration of the attention increased the pain, which finally seemed to deserve such terms as agonizing and frightful. When a young woman stated that a headache of this degree of violence had been continuous day and night for many years, notwithstanding the fact that she was out and about and showed none of the natural accompaniments of such pain, constitutional headache should be suspected, and the prognosis should be guarded regarding cure by the removal of reflex causes or other therapeutic measures. It was assumed that organic disease of brain, kidney, and other organs had been excluded, and toxic causes eliminated. Constitutional headache might simulate organic disease, but the reverse possibility must also be borne in mind.

Chronic Headache Associated with Pelvic Disease.— Dr. F. H. Davenport of Boston said that headache was not very common in connection with pelvic disease, and in taking 1,000 cases from his notebook, he found it mentioned 98 times, constituting about 10 per cent. In studying these cases he divided them into two groups, first, those connected with the menstrual function, and, secondly, those which seemed to be not especially due to the particular pelvic disorder found, but an expression of the neurasthenia on which the pelvic lesion was one of the predisposing factors. In the first group there were 30 cases, or about one-third, which were directly associated as regards time with the menstrual disorders, and the one abnormality which was constant was a diminution in the amount of blood lost, either from a scanty flow with the periods regular, or from delayed menstruation, the interval being more than four weeks, or again, from both scanty and irregular menstruation combined. The most common type of headache found in these cases came on a few days before the flow occurred, lasting from one day to several, and ceasing promptly as soon as the flow was established. Headaches occurring during the flow were very rare. The treatment of this form consisted first in general measures to improve the patient's health; any treatment that would make blood, improve its circulation, and steady the nerves, would tend to regulate this function. Local depletion should be tried, and the best, in his opinion, followed the use of wool tampons soaked in glycerine. The result was a profuse, watery discharge of blood serum, which relieved the engorged pelvic blood vessels and equalized the circulation. In the second group there were 22 cases where the headaches seemed to be clearly due to neurasthenic conditions, brought on usually by overfatigue, either mental or physical. He said that headache was not a common symptom of pelvic conditions; it was noted in only 14 cases out of 130 retroflexions and versions. There were 13 cases of anteversion, but the most of these had at the time scanty or irregular menstruation, and were probably of a poorly developed type. Some prolapse or enlargement of the ovary was found in 8 cases. Laceration of the cervix was present in 16 cases, and that was significant as emphasizing the fact that lacerations and irritations of the cervix frequently manifested themselves more by reflex disturbances than by local symptoms. In only four cases of fibroid tumors and none of ovarian, was headache present as a symptom. The conclusions he drew were as follows: (1) Chronic headache associated with pelvic disease was accidental, except where it was the most marked symptom of irregular or scanty menstruation; (2) in other pelvic disorders it was usually an expression of the neurasthenic condition, of which the pelvic lesion was merely one factor or accessory predisposing cause; (3) the treatment of the first class of cases was, first, general building up measures and local depletion; (4) the treatment of the second class was the rectification of the existing local trouble, unless specially contraindicated, but the main reliance was to be placed upon prolonged and systematic treatment of the neurasthenia.

(*To be continued.*)

ASSOCIATION OF AMERICAN PHYSICIANS.

Annual Meeting Held in Washington, May 15 and 16, 1906.

(Special Report to the Medical Record.)

Dr. Frank Billings of Chicago in the Chair.

(*Concluded from page 1030.*)

Second Day—Wednesday, May 16.

A Case of Bacillus Coli Septicemia with Hemolysis.—Drs. P. A. D. Blackader and B. D. Gillies of Montreal reported the case of a woman twenty-seven years old who was suddenly seized during the night with severe pain in the suprapubic region and rigors, followed by pyrexia, vomiting, and a moderately profuse sanguineous vaginal discharge. She had been apparently in good health and spirits the day previous. The following morning a distinct bronzing of the skin was noted and there was marked dyspnea, tenderness in the suprapubic region, a temperature of 102° F., a quick, weak pulse, and a sense of great depression. She entered the Montreal General Hospital

the same evening. Her condition then was one of profound exhaustion; there was delirium, severe frontal headache, and great restlessness; the color of the skin had distinctly deepened. Moderate stimulation was employed. On examination the following morning the skin was everywhere of a light brown tint, resembling that of a mulatto; the conjunctivæ were suffused and much tinted. The thoracic organs appeared normal, and there was no increase in either hepatic or splenic dullness. A moderate degree of tympanites existed. The extremities were cool, and the temperature was 103° F. and very perceptible at the wrist. The respirations were between 40 and 50. The urine contained albumin, a few red blood cells, and numerous bacilli resembling the *Bacillus coli communis*. The blood examination showed 2,704,000 red cells, 79,200 whites, and 48 per cent. hemoglobin. The blood was dark, flowing with difficulty, and the serum was of a yellow tinge; crenation came on rapidly, the fibrin net forming in seven minutes. Under the microscope some fragments of red cells were seen in leucocytes and one fine needle of hemoglobin. Death occurred that same evening. Cultures from the blood ten hours after death gave a pure culture of the *Bacillus coli communis;* cultures from the ventricles of the heart, from spleen and kidney, and from the lining of the mucosa of the uterus, all gave a pure culture of a bacillus presenting the same morphological appearance and staining properties of the *Bacillus coli communis*. Cultures from the liver, gall-bladder, and brain remained sterile. Cultures from the urine before death gave the *Bacillus coli* in pure culture. The blood from the ventricles was of a deep chocolate tint, and gave the spectrum reaction for methemoglobin. The autopsy revealed a septicemia with hemolysis and methemoglobinemia, a subinvolution of the uterus, retained secundines, acute cystitis, hyperplasia of the spleen, healed tuberculous nodule at the apex of the right lung, cloudy swelling of the kidneys and a fatty liver.

Dr. E. G. Janeway of New York reported in this connection four cases of poisoning by bichloride of mercury, in one case by accident after confinement. The symptoms in all simulated those of dysentery—bloody discharges, etc.—and appendicitis was thought of in the first case. In the second case a lady took the drug by accident. In the third case the drug was used as a douche to prevent conception, and gave rise to the same dysenteric phenomena—intense abdominal pain, high temperature, etc.—recovery following. In the fourth case there was no salivation. He believed that poisoning by bichloride of mercury was more common than was generally supposed.

General George M. Sternberg, U. S. A., said that in the experimental injections in animals, as dogs, similar symptoms were obtained as described in the paper, although the blood was not disorganized to the same extent. The condition simulated yellow fever in the fatty changes and the changes in the kidneys. He said that he had obtained a pathogenic variety of colon bacillus from yellow fever patients while making experiments in Havana.

Dr. A. D. Blackader said that one of the most characteristic symptoms met with in poisoning by bichloride of mercury was the inflammation of the colon.

Hemochromatosis and Diabetes Mellitus. — Dr. Thomas B. Futcher of Baltimore read this paper, which dealt with the clinical features of hemochromatosis, and the cases in the literature in which the disease had gone on to the diabetic stage were reviewed to date. He called attention to the triad of symptoms in hemochromatosis, viz., the pigmentation of the skin and viscera, the hypertrophic cirrhosis of the liver, and the persistent diabetes in advanced cases. The first case reported was that of a man, forty-five years old, a heavy drinker, whose brother had died of diabetes. He had a diabetes which had lasted fifteen months. There was pigmentation of the skin, particularly on the exposed parts. The liver was very large. There was no enlargement of the spleen and no ascites. There was an 8 per cent. glycosuria and acidosis. The patient left the hospital and died. The second case reported was that of a man, fifty-three years old, with a striking pigmentation of the skin. He was not an alcoholic. The liver was enormously enlarged, and the spleen was enlarged. The sugar was 11.5 per cent., and there was acidosis. The diabetic symptoms lasted only six weeks previous to admission to hospital. This patient also left the hospital. Examination of the skin gave the characteristic iron reaction in the cells of the sweat glands and their ducts.

Dr. James B. Herrick of Chicago said that two weeks ago he had a patient under observation with the triad of symptoms Dr. Futcher referred to, and also tuberculosis of the lungs. At death, however, the autopsy showed cirrhosis of the liver, with pulmonary tuberculosis, but no pigmentation of the viscera. In looking back over the sequence of events, the history should have pointed against the diagnosis of hemochromatosis.

Universal Pruritus without Skin Lesion, Hematogenous Urobilinuria, Peculiar Erythrocytolysis.—Drs. John K. Mitchell and Alfred R. Allen of Philadelphia reported the case of a nervous individual, a medical student, who had suffered from chronic malaria poisoning. He first had a typical Raynaud's disease, and, four years later, he had an intense itching of the whole body, never wholly absent. With this there was insomnia. At no time was there any skin lesion. When he consulted the authors he had a typical Raynaud's disease neurasthenia, and this intolerable itching. The urinary and blood findings were interesting. There was a faint trace of albumin in the urine, and a few hyaline and granular casts. On standing, the urine became of port wine color. Urobilin was found, but did not come from the bilirubin (hepatic origin), but from the blood. In cases of urobilin being of hepatic origin he said there was always associated indican, and this was not found in this patient. The blood examination showed 58 per cent. hemoglobin, 19,000 leucocytes; lymphocytes, 35 per cent.; large mononuclears, 4 per cent.; transitionals, 4 per cent.; polymorphonuclears, 42 per cent.; and eosinophiles, 13 per cent. After two months of treatment the proportion of eosinophiles remained the same, but the hemoglobin rose as high as 79 per cent. Five months of treatment showed the leucocytes not above the normal, but the eosinophiles were 11.7 per cent. General improvement continued and the patient went to San Francisco, Cal., and reports some itching still. He believed the itching to be due to the presence of urobilin in the blood, caused by an erythrocytolysis resulting from malaria. The treatment was by the hot baths, to which starch water or bran was added, and by the internal use of iodides and mercury.

Dr. W. S. Thayer of Baltimore had seen two cases at the Johns Hopkins Hospital associated with Raynaud's disease.

Essential Pentosuria in Two Brothers.—Dr. Theodore C. Janeway of New York City presented this paper. He said that since Salkowski and Jastrowitz, in 1892, had observed in the urine an optically inactive sugar, which did not ferment with yeast, and identified it as pentose, seventeen undoubted cases of chronic pentosuria had been reported. No instance could be found in American, British, or French journals. He briefly reported two typical cases. The first was in a German Hebrew, twenty-eight years of age; he had three brothers and five sisters, all healthy except one brother. The patient had never been robust, was subject to severe headaches. He had been treated for mild diabetes for a year, and was refused life insurance on account of sugar in his urine. Physical examination was wholly negative. Urine, 1,050 c.c., 1,028 specific gravity, reducing Fehling's solution and giving a questionable bubble in the fermentation tube. After a months' observation the discrepancy between the uniform trace of sugar and the varied diet showed that the case was not one of glycosuria. Pentosuria was at once confirmed by the positive orcin test, and proof of optical inactivity and absence of fermentation, after 100 grams of glucose at a single dose. Preparation of the purified osazon

gave a melting point of 154°-158° C. and decided the diagnosis. The total pentose excretion estimated as dextrose by Pavey's method, varied between 2.5 and 4.2 grams in twenty-four hours. The second patient, brother of the first, aged twenty-seven, was almost the exact counterpart. He excreted the same quantity of pentose. The osazon from his urine had a melting point of 160°-162° C. At present three different types of pentosuria were known; alimentary, analogous to alimentary glycosuria, occurring when large amounts of vegetable pentoses were eaten; pentosuria in some severe diabetics, where the inability to burn sugars extended to the pentatomic ones; and true chronic pentosuria, of the type described, about which few facts were known. (1) The sugar in all cases (with one possible exception) had been inactive r-arabinose. This was the only known occurrence of an optically inactive sugar in nature. It could not therefore come from the vegetable pentose, nor from the l-xylose of the nucleins. (2) The power of burning all the hexoses, l-arabinose, and the pentose-containing nucleoproteids was unaltered. (3) The nuclear metabolism was not increased. (4) Family tendency seemed well marked, the nineteen reported cases containing four family groups. The malady had no connection with the diminished sugar combustion, but was rather an anomaly of intermediate metabolism somewhere, resulting in the synthesis of this abnormal sugar. It was analogous to cystinuria and alkaptonuria, rather than to diabetes. Any urine which reduced Fehling's solution only after a few moments' boiling and then with a sudden change of color to greenish or orange-yellow throughout, might be suspected. If it was optically inactive and non-fermentable, and if it responded well to the phenylhydrazin test, pentose was probably present; the orcin test with spectroscopic examination made the diagnosis almost absolute; a melting point of the osazon of about 160° C. settled the diagnosis definitely. The clinical treatment and the significance were mainly negative—the condition was not to be confused with diabetes. Restriction of the carbohydrate foods was not called for.

Aplastic Anemia, with Report of a Case.—Dr. R. Lavenson of Philadelphia reported the case of a woman, thirty-five years old, who had previously been healthy, and who without apparent cause developed a profound, rapidly fatal anemia. The prominent features of the blood analysis were oligocythemia, oligochromemia, a scarcity of normoblasts, an absence of megaloblasts, and a leucopenia, with relative lymphocytosis. At autopsy there was found an aplasia of the bone marrow. Dr. Lavenson then discussed the relation of aplastic anemia to progressive pernicious anemia, and to simple anemia.

Dr. Richard C. Cabot of Boston said that he had seen two such cases, but had not reported them because of absence as yet of autopsy.

Drs. A. Scott Warthin of Ann Arbor, Mich., Alfred Stengel of Philadelphia, W. S. Thayer of Baltimore, Shattuck of Boston, and Eugene L. Opie of New York discussed the paper.

Multiple Cerebral Hemorrhage in Leukemia.—Dr. James B. Herrick of Chicago reported a case of chronic myelogenous leukemia in which death was due to multiple, discreet, cerebral hemorrhages. The patient died suddenly, with delirium and hemiplegia. The specimen of the cerebrum was shown, and he said that a further study of it might cause him to change his diagnosis.

Exophthalmos in Leukemia.—Dr. Herrick also reported this case of acute leukemia, of mixed lymphatic and myelogenous type, in which bilateral exophthalmos was the striking feature. At autopsy a retrobulbar leukemic infiltration was found to explain the condition. There were no chloromatous masses.

Experiments on the Leucolytic Action of the X-Ray and the Injection of Leucolytic Serum in Leukemia.—Drs. Joseph A. Capps and J. F. Smith of Chicago reported some fruitful experiments they had done upon animals. A chart was shown of the effects of injecting this serum into a patient with leukemia. Before administering it the patient had not been under any treatment for three months. The leucocytes numbered 150,000 to 200,000 when 4 c.c. of the serum was given. Within twenty-four hours the count dropped from 160,000 to 124,000; within forty-eight hours, to 104,000. In other words, there was a fall of about 60,000 in forty-eight hours. In thirteen days the leucocyte count reached the point it was at the time of injection. A second injection of 5 c.c. was then given, and a drop occurred which was not so extensive as before and the recovery was more rapid, reaching the level in nine days. At the time of the third injection the count was 300,000, and he then gave 10 c.c.; in twenty-four hours the count fell to 215,000 and recovery then took but seven days. The leucolytic serum used was produced by the action of the *x*-ray in leukemia.

The Nucleus Test in Pancreatic Disease.—Dr. I. Dutton Steele of Philadelphia said that the nucleus test as suggested by Adolph Schmidt for the diagnosis of pancreatic disease confirmed the work of Wallenfang upon dogs, which showed that in complete lesions of the pancreas the muscle nuclei of ingested meat was not digested. A case of azotorrhea was reported, in which indigestion of muscle fiber was apparently dependent upon chronic appendicitis and not upon disease of the pancreas.

Notes on the Diagnosis of Pancreatic Disease.—Dr. John H. Musser of Philadelphia said that the diagnosis of pancreatic disease must only be suggestive, for there was no finality as to the result of examination of the urine and feces alone, except possibly by the methods Dr. Steele had pointed out, when there was a complete destruction of the organ. He said he was forced to the conclusion that the recognition of pancreatic disease depended not to the same degree upon laboratory methods as upon the study of the clinical course of the disease, and especially the previous history of the case and the objective signs.

Dr. D. L. Edsall of Philadelphia felt as Dr. Musser did, and referred to some work he had done in looking for the fat-splitting ferment in the urine.

Dr. W. S. Thayer of Baltimore referred to the case of a man, thirty years old, who gave indefinite digestive symptoms, and who developed glycosuria and pulmonary tuberculosis. The stools were enormous, sometimes amounting to a quart under an ordinary diet. The stools were followed by a gush of liquid fat that smelled like rancid butter. The diagnosis was made of probably pancreatic calculi, which was confirmed at autopsy, calcareous masses being found in the duct.

Some Experiments Upon the Digestive Activity of Pepsin in the Gastric Contents.—Drs. Joseph Sailer and C. F. Farr of Philadelphia gave a brief description of the methods employed in estimating the peptic activity. They called attention to the advantages and disadvantages of the Metts method and evidence of its accuracy. They called attention, too, to the accuracy of the law of square roots, that the degree of digestion corresponded to the square root of the amount of pepsin present, except in concentrated solutions. The more dilute the gastric juice, the greater became its digestive power. He then considered the effects of the various food preservatives upon peptic digestion. Benzoate of sodium and benzoic acid had strong inhibitory effects. Sodium salicylate was broken up into salicylic acid, the latter being precipitated as fine needles. Sodium sulphate had a strong inhibitory effect, as had sodium chloride in strong solution. Alcohol, on the other hand, in 66 per cent. strength, had but slight effect; when at a strength of 16 per cent., no effect at all was noted. Formalin had a slight inhibitory effect upon peptic digestion.

Report of a Case of Glandular Fever with Dermal Lesions Suggesting Syphilis.—Drs. Alfred Stengel, J. W. White, and J. S. Evans of Philadelphia reported the case of a medical student, twenty-six years old, whose disease suddenly developed with an intense itching of the skin and a tendency to urticaria. He also had at first an

icteroid condition of the skin, sore throat, and pain in the joints and substernum. There was some fever, and then the eruption became more distinct and florid. Enlarged glands, superficially situated, then developed all over the body. He had a gastrointestinal attack, which he attributed to the drinking of ice-water. There developed an atypical erythema multiforme. Photographs were shown, displaying the character of the eruption, some having been taken by Dr. Stellwagon. The juice of the lymphatic glands and the blood serum were examined for *Spirochæta pallida* by Dr. Kelly, but none were found. He had had three injections of bichloride of mercury into the buttocks, but without any effect upon the eruption or symptoms. There was a leucocytosis. Cultures from the blood, glands, and tonsils resulted in finding a streptococcus resembling *Streptococcus equi*, found by veterinary pathologists in the glandular fever and epidemic coryza of horses. There was a gradual improvement in the patient without specific treatment.

An Experimental Study of Cerebrospinal Meningitis.—Drs. Simon Flexner and Henry S. Houghton of New York told of the Commission that had been appointed by the New York Board of Health for the purpose of making certain investigations regarding this epidemic disease. It fell upon Dr. Flexner to experiment with animals to see if they could be immunized, and also to try to produce a serum. The lower animals, he said, were not well adapted for experimental reproduction of the lesions occurring in cerebrospinal meningitis. Thirty or forty monkeys were made use of, and a few facts were learned which had a direct bearing upon the pathology of the disease, and which might have some value in the study of the disase as it occurred in man. These findings would be published later.

Internal Hydrocephalus Complicating and Following Cerebrospinal Meningitis.—Dr. Henry Koplik presenttd this communication. He spoke of the paucity of the literature on this subject, and briefly called attention to the symptoms that marked the three principal types of the disease. He emphasized the importance of the tympanic percussion note in cases of fluid in the ventricles of the brain. He thought they should formulate some form of procedure in cases of cerebrospinal meningitis, crystallizing their views on the therapy of the disease, having some definite procedure. There were cases of cerebrospinal meningitis that recovered without any interference; these were the cases with but little pressure on the brain, a simple infection, and got well because they were self-limited. There were other cases in which there was a marked distention, which must be relieved at once. If the infection was very great, one could not rely very much upon puncture. In the subacute cases puncturing at the right moment could save the cerebral structures from damage.

Experimental Arterial Degeneration.—Dr. Joseph L. Miller of Chicago gave a lantern-slide demonstration of the changes produced chiefly by substances increasing blood pressure, as adrenalin, digitalis, nicotine, physostigmine, barium chloride, etc. Similar changes, however, might be produced by substances that either did not affect or lowered the blood pressure, such as phloridzin and lead carbonate. The causes of the vascular changes after the use of adrenalin, he said, were either increased blood pressure or toxic influences.

Nature of Spirochætæ.—Dr. F. G. Novy of Ann Arbor gave a lantern-slide demonstration in which was well marked the transverse and not the longitudinal division of this organism.

Relapsing Fever.—Dr. F. G. Novy gave a lantern-slide demonstration of the spirillum of Obermeier.

Thrombophlebitis of the Splenic and Portal Veins and Its Relation to Splenic Anemia.—Dr. Alfred Scott Warthin of Ann Arbor said that he and Dr. George Dock had reported three cases of splenic anemia, showing at autopsy splenic fibrosis associated with stenosis or obstruction of the portal or splenic veins, due to an old thrombophlebitis. A fourth case was now reported of relatively acute splenic thrombophlebitis following pneumonia, and which presented features of secondary anemia and splenic fibrosis. The results of experimental work were given, and an attempt was made to establish the clinical and pathological entity of splenic and portal thrombophlebitis as a variety of splenic anemia. Lantern slides were shown.

A Histological Study of Two Cases of Sudden Death Associated with Hypertrophy of the Thymus; One Case with General Lymphatic Enlargement, the Other Without.—Dr. Alfred Scott Warthin of Ann Arbor gave the results of a pathological study of the autopsy material from two cases of sudden death in children, associated with thymic hypertrophy. In one case the lymph glands were enlarged, in the other they were small, but the same condition was found in both cases, viz., atrophy and disappearance of the lymphoid elements, endothelial and fibrous hyperplasia, etc. Similar changes were found in the spleen and bone marrow. The thymus in both cases showed a lymphoid hyperplasia, eosinophilia, etc. The findings were interpreted as a toxemia resulting in a lymphoid exhaustion of the lymph glands, bone marrow, and spleen, and a compensatory hypertrophy of the thymus. A possible relationship to Hodgkins' disease was also discussed and a lantern-slide demonstration was given.

Histological Notes on a Case of Leukemic Hodgkins' Disease.—Dr. Warthin also reported a case with the clinical picture of Hodgkins' disease, but with a blood picture of lymphemia, showing changes in the lymph glands, spleen, bone marrow, and liver, corresponding to the "epithelioid" type of Hodgkins instead of the lymphoid hyperplasia (lymphocytoma) characteristic of lymphocytic leukemia. The possible relationship of Hodgkins' disease to the group of aleukemic and leukemic hyperplasia was discussed and lantern slides were exhibited.

Acute Dilatation of the Stomach and Its Relation to Mesenteric Obstruction of the Duodenum.—Dr. Lewis A. Connor of New York reported a case of acute dilatation of the stomach and duodenum, with complete occlusion of the lower end of the latter by pressure of root of mesentery and its contained superior mesenteric artery. An analysis of ninety cases of acute dilatation of the stomach was made. Dilatation of the duodenum was found in 60 per cent. of the fatal cases. Mesenteric obstruction was demonstrated in nineteen cases, and was probably present in many more. There was difficulty in determining whether the mesenteric obstruction or the gastric dilatation was the primary condition. Acute dilatation of the stomach was probably due, in most cases, to one of the several forms of obstruction in the duodenum, of which mesenteric compression was the most important. Satisfactory results of postural treatment in several cases of severe gastric dilatation in which such mesenteric compression was assumed to exist were to be had. A lantern-slide exhibition was given.

Clinical Notes on Exophthalmic Goiter.—Dr. W. Gilman Thompson of New York read a paper which was based upon a study of upward of eighty cases. In a large proportion of the cases an acute febrile toxemia developed, in which, in addition to the cardinal symptoms of goiter, tremor, tachycardia, and exophthalmos, the following symptoms were noted: Fever, acute dilatation of the heart, cardiac murmurs, dyspnea, precordial, thoracic, or abdominal pain, edema of the legs, erythema, and sweating. The increased temperature (which was usually not described in connection with these exacerbations) frequently reached 104° or more, and might continue for several days. It was particularly these toxic exacerbations which he said might be influenced by the new cytotoxic serum. The cause of the sudden toxic exacerbations often appeared to be an intercurrent mild infection, such as an attack of tonsillitis, influenza, bronchitis, or an attack of gastro-

intestinal disturbance. He considered the relative frequency of the various symptoms, the causes of death, and the possibility of mistaking the condition for acute septicemia or malignant endocarditis. Of the 43 patients coming into the hospital with acute symptoms and very active, 39 were females. Exophthalmos was present in 28; tremors in 36; sweating in 17; edema in 23; tonsillitis, etc., in 16; gastrointestinal disturbances in 16; emaciation in 16; erythema in 7; heart from 4 to 6 1-2 inches in 24, under 4 inches in 19; murmurs in 31; temperature between 101° and 104° in 13, 104° or over in 7, above 99° in only 4. The mortality was 7 per cent.

Treatment of Exophthalmic Goiter by a Specific Cytotoxin.—Dr. JOHN ROGERS of New York presented this part of the symposium, for a detailed account of which see the MEDICAL RECORD of February 24, 1906, page 322.

Preparation of a Specific Cytoxin for Exophthalmic Goiter.—Dr. S. P. BEEBE of New York described this. (See the MEDICAL RECORD of February 24, 1906, page 322.)

Dr. S. J. MELTZER of New York presented two photographs of children, whose ages were nine and ten years, with Graves' disease. The exophthalmos and goiter diminished during the use of thymus gland, given accidentally. One of the patients had been absolutely cured, remaining so for nine years. Sodium phosphate had also been advised, based upon the theory that Graves' disease had its origin in disturbances in the medulla oblongata, and this salt was of benefit in disease of the medulla oblongata. He considered Drs. Rogers' and Beebe's discovery one of the most remarkable of the times, if their claims could be verified.

Dr. FORCHHEIMER of Cincinnati reported thirty-one cases, all but one occurring in females, which he had collected from his private practice in thirty years. His method of treatment was to administer five grains of hydrobromate of quinine with one grain of ergotin, three or four times daily. Twenty-seven of these cases were completely restored to health and in four the method failed.

Dr. W. G. MACCALLUM of Baltimore had had an opportunity of examining twenty-nine glands in exophthalmic goiter, and was able to make out a more or less specific change in them. The important point was to remember that this specific change was in the direction of a hypertrophy, a compensatory hypertrophy. The parathyroids were found to be normal in nine or ten of the cases.

Dr. A. SCOTT WARTHIN of Ann Arbor asked Dr. Ewing if he had ever examined the thyroids in cases of eclampsia.

Dr. W. GILMAN THOMPSON of New York said that he had seen cases improve by simply rest in bed. He thought it rather premature to express adverse judgment upon the experimental work of Rogers and Beebe, for they certainly had gotten hold of something in the line of serum therapy.

Dr. JAMES EWING of New York said that he had examined a number of thyroids and parathyroids in cases of eclampsia, and they were quite intersting in showing a variation in the quantity of colloid material present.

The Enzymes in Phagocytic Cells of Inflammatory Exudates.—Dr. EUGENE L. OPIE of New York said that phagocytic cells, which had a part in the resolution of inflammatory exudates, digested bacteria and various cellular elements by means of two proteolytic enzymes, one of which, contained in the polynuclear leucocytes (like trypsin), digested actively in an alkaline medium, while the other, contained in the large mononuclear phagocytes or macrophages (like pepsin), digested only in an acid medium.

Some Experiments in Psychotherapy.—Dr. L. F. BARKER of Baltimore read this paper, which contained a plea for the more systematic, conscious application of psychic treatment in the management of functional disorders of the nervous system. He reported many illustrative cases. Psychotherapy should always be applied to the simple cases. Persuasion, occupation, and education were the main features in this treatment. Psychoneurotic conditions responded best to psychotherapy. He detailed the difference between suggestion and persuasion. More than eighty cases had been treated at the Johns Hopkins Hospital in which the psychotherapy was the mainstay. He then considered the abuse of this treatment.

Use of the X-Ray in Unresolved Pneumonia and the Nature of the Toxic Reaction to X-Ray, with Observations on Metabolism.—Drs. D. L. EDSALL and RALPH PEMBERTON of Philadelphia presented this communication, in which they said that several cases of unresolved pneumonia in which the *x*-rays were used on account of the authors' view that the *x*-ray stimulated autolysis by acting as an accelerator of ferment-action, showed more or less striking and rapid improvement, with conditions of metabolism similar to those at the crisis in pneumonia. In one case, in which a severe toxic reaction occurred immediately after the *x*-ray exposure, and in another in which a similar but milder reaction occurred, striking disturbances in metabolism were noted, and these appeared to make clearer the nature of such a reaction, and some of the dangers associated with the use of the *x*-rays.

Immunity in Tuberculosis.—Dr. SIMON FLEXNER, New York, delivered this address at a joint meeting of this Association and the National Association for the Study and Prevention of Tuberculosis. He said the first successful inoculation had been made in 1843 by Klemper, but his investigations had not been pursued and were soon forgotten. At this time the opponents of the infection theory had endeavored to prove that tuberculosis could be produced by the injection of nontuberculous material. Conheim had brought out the method of introducing the infection into the rabbit's eye which had the advantage that the whole process could be watched and that spontaneous tuberculosis had never been known to occur in the rabbit's eye. Koch in 1882 had demonstrated the organism and secured cultures of the bacillus free from extraneous matter and was able to reproduce the disease in domestic animals. He thought that it did not detract from his work that he had failed to distinguish between the different forms of tuberculous disease in fowls, animals and man. Now several distinct kinds were recognized, classified into human, bovine, and avian. The close relationship of these made the study of the disease in animals of great advantage, and the problem of the suppression of tuberculosis had to take into account the possibility of danger of infection from one to the other. Avian tubercle bacilli occurred rarely in man, and the speaker thought all forms of human tuberculosis were caused by the mammalian or bovine bacilli. It had been shown that the bacilli could gain entrance through the intestinal walls and lymphatics and he thought that the limitation of the disease must depend upon our knowledge of its mode of entrance. A marked reduction in the mortality from tuberculosis had been going on in various countries due to the régime of education and improvement of the condition of the poor. Vaccination by means of the dead bacilli and of living attenuated bacilli promised much and tuberculin as a diagnostic measure at least was of great value. The first successful efforts had been those of Dr. Trudeau in injecting animals with the avian bacilli. While tuberculosis claimed in death one in every seven persons the morbidity was much greater than this indicated and autopsies indicated that 90 per cent. of persons have at some time of life been the victims of this infection. From this it was to be assumed that the human organism had a natural tendency to immunity and it was to be believed that a degree of immunity might be acquired by man. Vaccination of cattle was now being successfully practised. He called attention to the fact that Dr. Leonard Pearson of the Phipps Institute had concluded that different cultures of the human bacillus possessed different immunizing values and it had been definitely shown that vaccination could be practised in animals, though not always without danger. The question of the duration of immunity was still an open one; it had been shown to last a year, but there was no proof that it would last for an entire lifetime and

the immunity could be overcome by the injection of large quantities of active bacilli. It remained to be learned how long the bacilli survived after vaccination. He said investigators should not in any way relax their efforts to secure an immunity for man against tuberculosis and held that there was certainly great hope for the future treatment of the disease in man. He believed that further researches along the line of securing such immunity would in time stay the ravages of the disease.

Election of Officers.—*President,* Dr. Francis B. Kinnicutt of New York; *Vice-President,* Dr. James Tyson of Philadelphia; *Secretary,* Dr. Henry Hunt of Washington, D. C.; *Recorder,* Dr. Solomon Solis-Cohen of Philadelphia; *Treasurer,* Dr. J. P. Crozier Griffith of Philadelphia; *Councillor,* Dr. L. F. Barker of Baltimore; *Active Members,* Drs. W. M. L. Coplin, S. W. Lambert, and G. H. Weaver; *Associate Members,* Drs. A. A. Eshner, R. G. Freeman, I. P. Lyon, M. J. Rosenau, Jno. S. Billings, Jr., Edward R. Baldwin, and Herbert C. Moffitt.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, April 9, 1906.

THE PRESIDENT, DR. THOMAS E. SATTERTHWAITE, IN THE CHAIR.

Minute on the Death of Dr. George R. Fowler.—The Secretary read this minute, as follows: "The death of our distinguished fellow member, Dr. George Ryerson Fowler, has been felt by all of us, not only as a personal loss, but as a loss to the ranks of able and progressive surgeons. He had lived and worked long enough to establish his rank. He was among that small class of ceaselessly active, thoroughly grounded, splendidly trained, and self-disciplined surgeons who have reached a time of life where every act tells for good. He would have disdained to be considered in a class by himself, but, rather, regarded it as his greatest privilege and noblest duty to work shoulder to shoulder with his comrades in science. Those who knew him best as a teacher loved and venerated his wise and experienced words. Those who watched his surgical work noted his originality and unerring correctness of action. Those who knew him as a man saw, throughout his life, devotion to principle and quick response to every call of duty, regardless of personal sacrifice. Never considering himself first, he served not only his profession, but his school, his State, and his country. His personal qualities of buoyancy, modesty, and truthfulness excited a pleasant interest in all his public utterances. Never speculative, and always eminently practical, he was always fearless and ready with his pen. When his views were matured, his writings always rang true, and bore the stamp of large experience tempered by unusual wisdom. Those who were fortunate enough to be associated with him in hospital work found him ever watchful of details in his operating room and a most severe teacher of strict asepsis. His influence on the surgical work of his generation will stand among the strongest of the workers of his time. As was written on the tomb of Charles Wesley in Westminster, 'God buries his workmen, but continues his work.'

"ROBERT ABBE,
"CHARLES JEWETT,
"ROBERT T. MORRIS,
"*Committee.*"

The order of the evening was a discussion on indications and methods in diseases of the intestines and peritoneum.

A Comparison of the Results of Treatment of Tuberculosis of the Peritoneum by Surgical and by the Conservative or Expectant Method.—Dr. JOHN C. HEMMETER of Baltimore, Md., said that in enumerating the various forms of peritonitis that might be confused with tuberculosis, he would for the sake of brevity pass over those forms that were due to infection, (1) through the genital tract in the female; (2) those due to infection from the digestive tract; and (3) those due to infection or extension of the inflammation from the biliary apparatus, as well as those forms of peritonitis which occurred secondarily during the course of chronic heart and kidney affections. The more important left for consideration were the following: 1. When peritoneal tuberculosis gradually developed with the clinical picture of simple ascites, it was sometimes difficult to distinguish from the ascites due to cirrhosis of the liver. Both diseases might occur together, and in such cases the diagnosis was extremely difficult. 2. Infectious diseases like measles, typhoid fever, and dysentery were sometimes found associated with ascites. 3. Malignant tumors of the peritoneum, intestine, gall-bladder or pancreas might be very difficult to differentiate from the tumor form of tuberculous peritonitis 4. There was a type of ascites that occurred in young girls during the period of adolescence called by French writers *"ascite des jeunes filles."* This was not due to an inflammation, but was supposed to be caused by hyperemic and hypersecretory conditions of the peritoneal regions approximate to the inner genitalia. It disappeared spontaneously after the first menstruations had occurred. 5. Traumatic peritonitis. Chronic exudative peritonitis that was not tuberculous might occur after injuries to the abdomen. 6. In 1884 Curschmann described a chronic inflammation of the peritoneum of a very peculiar type and of nontuberculous nature which he called "chronic fibrous polyserositis." It was always associated with a perihepatitis of the same peculiar type, giving the peritoneal and abdominal organs the appearance of being inclosed in a cast of opaque sugar. The cause of this condition was not known. It had been observed after various infectious diseases, and after circumscribed forms of peritonitis. Curschmann stated that the disease was characterized by two features, namely, a much reduced, small, hard liver, cylindrical at its edge, and by a very protracted course, lasting from two to sixteen years. The disease was very rare. 7. Idiopathic chronic peritonitis. Dr. Hemmeter said he had never seen a case of this type, and he doubted its occurrence. Nothnagel claimed that a genuine idiopathic peritonitis had not yet been demonstrated. In speaking of the differential diagnosis of the various forms of peritonitis, the speaker said he would simply emphasize three methods by the aid of which we were enabled to determine at least what was a tubercular peritonitis and what was not. They might almost be called specific reactions of tuberculosis. The first was the introperitoneal injection of some of the peritoneal exudate into guinea pigs; the second was the injection of Koch's tuberculin, and the third was the diazo reaction of Ehrlich. After a careful review of the treatment of tuberculous peritonitis, and as the result of his own experience, Dr. Hemmeter said that while he could not confirm the statement of the surgeon Borchgrevink that more cases were cured under a purely conservative medical treatment than under operation, he was nevertheless convinced that at least as many cases recovered under the expectant or conservative treatment as would recover after an operation.

Recent Advances in Intestinal Surgery.—Dr. ALGERNON T. BRISTOW of Brooklyn, N. Y., reviewed briefly the history of intestinal surgery, and said that the advances that had been made in this field in recent years might be classified as follows: Improvements in the methods of suture, in apparatus, and in general technique. Some additions had also been made to our methods of diagnosis, particularly in obscure cases of appendicitis, which sometimes presented themselves without much pain or tenderness, and even with a normal pulse and temperature. Referring more particularly to improved methods of suture, Dr. Bristow said that speed was a prime requisite in all surgical work on the intestines, and that that suture was the best which secured accurate coaptation with the least liability to leakage, and yet which did not require much time to introduce. Connell's suture seemed to fulfil those conditions better than any other stitch which was at present described in surgical works. It was a through-and-through suture. The only

objection to it was that it was somewhat difficult to learn. If, instead of the suture, the surgeon had a fancy for apparatus, there had never been invented anything more ingenious than the Murphy button. It was particularly useful to the surgeon whose experience was limited in this field of work. The ring clamps of La Place were also excellent devices, which had this advantage over the button, in that they were withdrawn after the suture was complete, and hence avoided leaving a foreign body in the lumen of the gut. In considering the improvements in general technique, the speaker said we were forced to the conclusion that the tendency among all surgeons who did much intestinal surgery was to simplify the technique. The surgeon who adopted for his motto the time-honored precept, *"non nocere,"* would always score the greatest number of successes in this field of work.

What Has Surgery Left to Medicine in the Treatment of Peritonitis in Adults and Children?— Dr. HENRY W. BERG read this paper. (See page 1044.)

Surgery of the Peritoneum.— Dr. LEWIS STEPHEN PILCHER of Brooklyn, N. Y., said the surgery of the peritoneum was so closely involved in the surgery of the organs which it enveloped and of the walls of the cavities which it lined that it was difficult to disassociate it from them. There was, however, a propriety in considering the peritoneum as a distinct entity and as having a surgery of its own, for on the recognition of the peculiarities of the peritoneum and its reaction to surgical conditions depended largely the ability of the surgeon to deal successfully with the organs which it enveloped. One of the most notable peculiarities of the peritoneum was the rapidity with which, when exposed to wound or irritation, it threw out an abundant supply of fibrinous lymph, which protected the serous surface from further irritation, united adjacent surfaces, and thus repaired wounds or closed in areas of infection. Surgeons had learned that the peritoneum, while it was peculiarly liable to infection, possessed in a very marked degree the ability to resist infection and to rid itself of the products of infection, so that notwithstanding very imperfect applications of the laws guarding against infection in the course of surgical procedures in which it was involved, ultimate recovery of the patient not infrequently still occurred. Surgeons had learned further that the great capacity for regeneration possessed by the peritoneum was more than an offset for its easy vulnerability, so that if in any given case conditions could be secured which were reasonably favorable for its reparative energy to be exercised, recovery from severe traumatism or extensive infection might be expected. Upon those two qualities of the peritoneum—rapidity of repair and resistance to infection—depended the success of most of the intraabdominal surgery of to-day; just as the individual surgeon adopted methods which promoted the one, and reduced the need of the other to a minimum, would his results be the most satisfactory. This regenerative power of the peritoneum, however, had also its unfavorable side, for, in the more or less extensive adhesions which remained as the result of attempts to repair traumatisms or overcome infection, there were created conditions which might entail disability, interfere with functions, produce pain, and limit and render extra hazardous subsequent attempts at surgical relief. For the production of adhesions, it was simply necessary that two damaged peritoneal surfaces should be in contact for a time. The firmness of those adhesions would depend upon the depth to which the serous surfaces had been destroyed; slightly damaged serosa, in contact with healthy serosa, might cause a weak, mayhap an evanescent adhesion; serous surfaces from both of which a superficial exfoliation of endothelium had occurred might become united by fairly strong adhesions, through which, however, a line of cleavage might subsequently be readily formed by the surgeon's effort, with easy separation of the adherent surfaces. The most dense adhesions resulted when a damaged serous surface came in contact with a raw surface, as of denuded muscle or fascia. It was from such dense adhesions as these that, by the continual tug caused by attempts at motion in the adherent organs, intraperitoneal bands were developed. In the surgery of the peritoneum, the possibility of adhesions, with their more or less remote disadvantages and dangers, must always engage the attention of the surgeon: first, from the standpoint of prevention; second, if already present, to loosen the bound-down organs from their bonds; and, third, after detachment, to prevent their reformation. In speaking of peritoneal infection, Dr. Pilcher said its malignancy depended, first, on the virulence and amount of the organisms that were introduced; and, second, upon the energy and extent of the local leucocytic reaction which it awakened, whereby was determined either the localization of the process, or its progressive diffusion. The proportion of recovery, even in advanced cases, that had rewarded surgical effort, had steadily increased during the past ten years from one of practically nothing at the beginning of that period, to one of more than 50, possibly of 75 per cent. at the present date. This had been due to improvements in operative methods, and in after-treatment, as a better understanding had been reached as to the reaction of the peritoneum to sepsis and to traumatism. Nothing had contributed more to this great improvement that the demonstration of the value of the elevated trunk, or semi-sitting position after operation, coupled with drainage from the pelvis. This we owed largely to the late Dr. George R. Fowler. A second important factor had been the abandonment of time-consuming, shock-producing efforts at cleansing the peritoneal cavity; such efforts inevitably inflicted much traumatism upon the peritoneal surfaces, and lessened their ability to carry on the further contest with infection, not only by the traumatism inflicted, but also by opening up increased surfaces for the absorption of toxins, just in proportion as the sheets of lymph were washed away from their areas of attachment. For these measures were substituted simply the relief from pressure afforded by a free incision of the abdominal wall, and the spontaneous escape of all fluids under pressure. The peritoneum was left to its own undisturbed resources to deal with infection, and the function of the surgeon was thus largely limited, after the removal, if possible, of the original source of infection, to providing by proper means of drainage against the further accumulation of secretions under pressure. A precious resource yet remained, and one of the highest value in supporting the peritoneum in its struggle; namely, surcharging the vascular system with water, whereby toxins were diluted, elimination, especially through the skin and kidneys, was stimulated, and the lymphatic current was changed from one of absorption to one of secretion. An intravenous infusion of physiological saline solution on the table as a part of the primary operation inaugurated this branch of the treatment, and it was continued thereafter by frequent rectal enemata of the same fluid, or by the continuous slow installation of the solution into the rectum, as suggested and practised by Murphy. The final feature of the practice of to-day was the suppression of peristalsis as far as possible; all foods and liquids by the mouth were withheld; lavage was resorted to for emptying the stomach of accumulations of putrid fluids that might regurgitate into it, and morphine was administered as might be borne.

Dr. ROBERT T. MORRIS, in referring to Dr. Bristow's remarks in regard to the operative treatment of ameboid dysentery, said he recently saw a woman from Panama who was suffering from that disease, and who, in order to get the benefit of a rapid cure, did not hesitate to have the abdomen opened, so that the bowel could be flushed from above through the appendix, rather than by the older and slower method from below. The speaker said he fully agreed with Dr. Berg's statement that palpation of the abdomen in typhoid fever could be carried to a dangerous extent, and the expert should know how much and how little to palpate. In dealing with acute cholelithiasis, Dr. Morris said he rather favored a radical operation in order to prevent the formation of adhesions which would otherwise result, and which often gave rise to much discomfort.

In puerperal peritonitis, he agreed with Dr. Berg that an operation would not remove the bacteria that were circulating in the blood, but it *would* remove the focus which was the source of the bacterial invasion, and by doing this, the scale was sometimes turned in the patient's favor. In tuberculous peritonitis he was inclined to accept the theory that the beneficial effects of the operation were due to the hyperleucocytosis that resulted from opening the abdominal cavity. In peritonitis from appendicitis or other local cause, the indications were to remove the focus of infection, and trust to leucocytosis to do the rest. The peritoneum, as Dr. Pilcher brought out, had a surgery of its own and had its own powers of resistance. For example, a man who received a slight stab-wound of the peritoneum was in much greater danger of developing a general peritonitis, in spite of operation and every aseptic precaution, than he would be if he had a malignant growth, the removal of which would require an extensive resection of the gut. In the latter case, in spite of careless handling of the bowel, primary union would doubtless follow, because the malignant focus had already called out the kind of protection which guarded against bacterial invasion, while the small stab-wound in the former case afforded no such protection. In speaking of the value of Cargile membrane in abdominal work, Dr. Morris said that while it had its limitations, there were certain cases in which it could be used to decided advantage. In many cases where he had used it to relieve the discomforts caused by adhesions, the patients had been much gratified with the result, and in some of the more extensive cases, where the adhesions could not be relieved at one sitting, they had voluntarily returned for further operative work. The same was true of cases where the membrane had become absorbed, and the adhesions had reformed. In properly selected cases, one operation was usually sufficient, but in extensive cases it might be necessary to do the work piecemeal. The willingness of patients to return for repeated operations was pretty good evidence of their appreciation of its influence, and counted far more than negative testimony gained from experiments of Craig and Ellis on dogs. Dogs are apt to have more severe peritoneal reaction than rabbits, and rabbits more than the human species.

Dr. A. Ernest Gallant, referring to tuberculous peritonitis, said he recalled two cases which illustrated the marked differences in the condition of the peritoneum. The first was the case of an emaciated woman, with a tensely distended abdomen, and with several large masses above the umbilicus. When the abdomen was opened these proved to be made up of intestine and tuberculous material inclosing fluid. The sac was opened, and the whole cavity washed out with saline solution. The patient did badly; the abdomen refilled at once, and the woman died four days later. Perhaps, if there had been less handling and irrigation, this patient might have lived. The second case was one of miliary involvement of the entire peritoneal surface, visceral and parietal. This patient had a leakage through the wound which was purposely kept open for nearly eight months. Her weight was now nearly double that at the time of operation, and she did the housework for the entire family. The great difference between perforative and non-perforative peritonitis seemed to lie in the fact that time had been or could be allowed the peritoneum to adapt itself to the invasion of its domain, and withstand surgical manipulation. In peritonitis in young girls, one should always suspect vaginal gonorrhea. The greatest advantage of the Trendelenburg posture lay in the fact that it removed the intestines from the field of operation, and minimized handling and trauma.

Dr. Albert A. Berg said that the points brought out by Dr. Pilcher concerning the handling of the peritoneum could not be too strongly emphasized. The surgeon of the beginning of the twentieth century was but little in advance of his colleague at the beginning of the aseptic era in the method of handling the peritoneum, and the great advances of the future would be along the lines suggested by Dr. Pilcher; namely, greater care in manipulation, less traumatism, less interference with the protective power of the peritoneum, quicker work, and more careful asepsis. Dr. Berg said he did not agree with Dr. Morris that under certain conditions the peritoneal cavity could be invaded with comparatively little danger as regarded the occurrence of sepsis, and he thought that every possible safeguard in that connection should be taken. As regarded intestinal anastomosis, the speaker expressed the belief that all mechanical devices, especially the Murphy button, would ultimately be the resort of beginners in surgery, while the more experienced would confine themselves to the suture operation, which could be done at the expense of only a few minutes' more time, and was not open to any of the objections that had been raised against the use of a mechanical device. During the past five years, Dr. Berg said, he had seen four fatal cases of necrosis of the bowel followed by perforation produced by pressure from the Murphy button.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held April 19, 1906.

The President, Dr. Charles L. Dana, in the Chair.

Concerning Neurofibrils (with Lantern-Slide Demonstrations).—Dr. Charles I. Lambert, of the State Pathological Institute, in presenting this subject, spoke briefly of the several fibril methods at our disposal to-day, of their application in normal and pathological conditions of the nervous system, and the alterations observed. Bethe's and Donaggio's methods depended upon mordanting and subsequent staining with a weak solution of toludin blue; Cajal's and Bielschowsky's depended essentially upon silver nitrate impregnation and subsequent reduction with a pyro-formalin mixture and toning. For normal histology, Donaggio's and Cajal's methods were preferred; for neuropathology, Bielschowsky's was more adaptable. Lantern-slide views were shown illustrating the nerve cell reactions occurring in normal as well as abnormal states. The several fibril methods produced a closely similar picture in normal cells of the same type. It consisted of a very delicate fibrillar network pervading the entire cell body, the fibrils anastomosing less freely in the peripheral parts and lying quite parallel within the dendrites. Illustrations were given of the termination of foreign nerve fibers on the surface of the cell body, the so-called "*end füsse*," and current opinions of their significance were expressed. The neurofibril reactions in a number of the more familiar cell alterations were demonstrated. In fever changes, artificially excited, there was produced an apparent dissolution of the Nissl stainable substance. The fibril picture was better preserved. In severe pyrexia the Nissl bodies appeared dissolved, and the fibrils showed similarly advanced changes. In central neuritis, described by Dr. Adolf Meyer, in *Brain*, 1901, as a parenchymatous alteration of the larger nerve elements, mainly of central distribution, was found the typical axonal reaction, with or without other superimposed cell changes. As in the Nissl picture, there was a dissolution of the stainable substance, with more or less swelling of the region usually opposite the origin of the axone, displacement of the nucleus toward the surface and even beyond the normal contour of the cell, with more or less persistence of the peripheral Nissl bodies, and preservation of the spindles in the dendrites; so in Bielschowsky's equivalent there was a coincident disappearance and preservation of the fibrils corresponding to the Nissl picture, the severity of the cell alteration being equally apparent in both, and of like distribution. Certain cells in central neuritis showed a striking whirlpool arrangement of the Nissl bodies, the nucleus usu-

ally being at the center of the vortex formations. In general paralysis the cortex disturbance and the incipient and end stages of cell death were demonstrated. In senile conditions, which represented an atrophy and not an inflammatory reaction, the architectonic of the cortex was well preserved, as well as the outer form of the cell and its dendrites, and the fibril destruction was less severe. The pigment and its reticular net was well rendered by the fibril methods. In certain conditions of diffuse cortical sclerosis, resembling Sach's amaurotic idiocy, many of the cells presented a peculiar inflation of the cell body protoplasm, a simple net production without plain pigment formation, and partial preservation of the dendrite fibrils. In conclusion, Dr. Lambert said there was need for further control studies of neurofibrils in their reaction to definite and known experimental conditions.

Dr. Adolf Meyer said the problem of the neurofibrils had naturally excited a great deal of attention of late years in connection with the conflict between the neuronists and the antineuronists, while Dr. Lambert had given an excellent exposition of the actual material that had been thus far obtained from the study of neuropathology in the human being. These histological studies offered a splendid field for further research and appeared more important than disputes regarding points which were beyond the safe realm of the microscope. It had first been claimed that the neurofibrils were individual structures; that they did not anastomose, and that they occasionally exchanged smaller elementary fibrils, and thus merely simulated a net. Concerning all these points the histological study of human material gave no conclusive evidence. It had also been demonstrated by Bethe that in the neurofibrils there was a special chemical substance, and where functional interruption took place, the neurofibrils showed a well circumscribed defect of its primary stainability; his method, however, was inappropriate for ordinary work. While the investigator in neuropathology had to restrict himself largely to the Bielschowsky method, the demonstration by Dr. Lambert gave evidence of the decided gains made by the new methods, and also of the desirability of abstaining from too much hypothetical construction as long as there was not more harmony on the nature of the fibrils.

Disturbances of Sensation in Visceral Disease.—Dr. Joseph Fraenkel, in presenting this paper, said the subject was a very extensive one, and its theoretical foundation was still complicated. It was important because it was of decided aid at the bedside, and frequently, ill-defined and vague symptoms received considerable illumination by making use of the simple method which was elaborated so thoroughly and brilliantly by Head. Dr. Fraenkel said his own contribution to the subject could be summed up in a few words: He had made use of the examination of skin sensibility in visceral diseases, and had received occasional diagnostic help and frequent illuminating suggestions therefrom. It was somewhat astonishing, he thought, that so simple and promising a method had thus far been neglected by the profession in general.

Evidence collected in the physiological laboratory and during operations seemed to show that the viscera had no capacity for pain sensation. Pain sensation was shown only by the external integument, *i.e.* the skin, then by another integumental layer, the fasciæ of the muscles, the tendon sheaths, the periosteum, the synovial membranes, and finally, by the third envelope layer, the serous membranes, the pleura, pericardium, peritoneum, and meninges. The organs themselves, the brain, lung, heart, stomach, liver, etc., could be handled without giving pain or causing any definite sensation. It was also well to keep in mind the fact that when the centripetal innervation of a certain area was disturbed, the impression conveyed was received by the central organs, but would be falsely localized. By studying carefully the areas of distribution of herpes zoster eruptions and the areas of hyperesthesia in visceral disease, Head succeeded in marking on the skin areas which correspond to the innervation of the segments of the cord. Dr. Charles L. Dana was the first to draw attention to the cephalic areas, by associating the location of a headache with its possible visceral origin (ocular, uterine, vesical, stomachic, etc.). Long and painstaking labor had enabled Head to assign the various viscera to corresponding cord segments.

When confronted with that unfortunately not infrequent symptom, pain, a difference between local and reflected pain could be established by the influence of local pressure over the painful area. Pain arising from an infiltration of the skin, from an inflammation of the periosteum, or from local disease of the peritoneum or pleura or meninges became aggravated by pressure, and contrary, a reflected pain became mitigated. The reflex hyperesthesia was elicited by pinching the skin or stroking it with a needle or with the smooth end of a pin, or testing it with hot water or ice; or finally, with a small electrode attached to a faradic current. One would find either in the entire area or at the maximum points certain subjective and objective expressions of hyperesthesia. Often the objective expressions were very striking and would serve as a welcome diagnostic aid in differentiating between structural and functional conditions. The hyperesthetic findings would be most marked in strictly localized and acute conditions. When they became chronic, or when the diseased process had extended, the findings of hyperesthesia would become blurred, or disappeared entirely, or might even be replaced by areas of diminished sensation.

Dr. M. Allen Starr said that when Head's original paper on this subject first appeared he had been much interested in it, although it had excited in him a certain amount of hostility because of the fact that no mention was made of the work of Dr. Dana along this same line, the results of which had been published at least three years before. With the aid of Drs. McBurney and Peabody, at Roosevelt Hospital, Dr. Starr said he had attempted to confirm these zones of hyperesthesia in various regions of the body, and he was unable to do so excepting in about 12 per cent. of the cases. The cases tested were those in which there were gross visceral lesions, and included a number of surgical cases. Dr. Starr said his experience with the method had led him to believe that while in certain cases it was of value, it could not be generally applied with any satisfactory results.

Dr. William H. Thomson said that after reading Head's article in *Brain* regarding the disturbances of sensation in visceral disease he had taken the work up at Roosevelt Hospital and had tested a great many cases. Occasionally the results were very striking, particularly in one case of stone in the kidney, but on the whole, his experience with the method was very similar to that of Dr. Starr. The method, Dr. Thomson said, might be put upon the same plane as the Widal reaction in typhoid fever, but was even less satisfactory. When a positive result was obtained, the information it gave was very valuable, but its negative results could not be relied on. In one case of thoracic aneurysm in which the diagnosis was beyond question, the results of the tests were negative.

Dr. J. Ramsay Hunt said that he had utilized the so-called Head zones of hyperesthesia in visceral disease and could testify to their practical importance in the recognition of abdominal conditions. He referred to obscure cases of gastric ulcer and gallstones in neurotic individuals in which the presence of this symptom had aided materially in the diagnosis.

The President, Dr. Dana, said that one factor which had detracted from the value of the method was that the technique of its application was not well understood. It was of no value whatsoever in the diagnosis of chronic diseases, but in certain acute conditions the method was of some service.

The Significance of Jacksonian Epilepsy in Focal Diagnosis, with Some Discussion of the Site and Nature of the Lesions and Disorders Causing This Form of Spasm.—Dr. Charles K. Mills of Philadelphia said that, with the exception of monoplegia or hemiplegia, probably no single symptom or symptom complex was so often made use of by the diagnostician in his efforts to fix the site of a tumor for the purpose of operation as Jacksonian epilepsy. The term was here used in a broad sense, as meaning monospasm or hemispasm due to cortical or cortico-subcortical discharge, a spasm which usually exhibited, if closely studied, an initial symptom and a serial order of phenomena. As originally and as commonly employed, the mere use of the term was supposed to predicate the existence of a focal lesion of the motor cortex, and it was sometimes defined as a spasm limited to a single group of muscles, or at least to a few muscular groups. Irritation or instability of portions of the cerebral motor area was, in by far the largest number of cases of Jacksonian spasm, as here defined, a direct or indirect cause of this form of epilepsy, but it was by no means true that it was always or even nearly always due to gross lesion of the motor zone. A distinction was at times necessary between Jacksonian epilepsy and hemiepilepsy. Some of the latter cases belonged to the category of Jacksonian epilepsy, but they were not all to be relegated to it. The convulsive attacks following hemiplegia were frequently unilateral, but they might begin on the paralyzed side and become general. Occasionally, they were confined to a portion of one side of the body. Frequently, probably usually, they were of cortical origin. When, as was so often the case, the hemiplegia, especially in childhood and youth, was due to softening from thrombosis, the convolutional areas surrounding or in the neighborhood of the parts destroyed were often the seat of deep congestion and punctiform hemorrhages. These rendered the cortical centers unstable, and convulsive discharges ensued, which might be confined to the limbs and face of one side, or might be unilateral, or become general. The monospasm or unilateral convulsions which occurred in cases of this description sometimes simulated very closely those which were due to brain tumor in the motor cortex or subcortex. They had the same mechanism as the Jacksonian spasms of tumor or other lesion; namely, irritation or instability of cortical motor cells. Hemiepilepsy might, however, in some instances, be due to an irritative lesion well removed from the cortex, or to some toxic state.

Dr. Mills then reported in detail a few cases in which Jacksonian spasm had been an important or a deciding symptom in successfully fixing the site for operation in dealing with cerebral tumor. In connection with such cases, he emphasized the following points: 1. That tumors situated in other parts of the brain than the motor cortex might cause Jacksonian epilepsy. 2. That other lesions besides tumors situated in the motor cortex might cause this form of spasm. 3. That it might occur in toxic and other diseases in which no demonstrable focal lesions were present. 4. That a spasm closely counterparting the Jacksonian type might be observed as a reflex or hysterical disorder. 5. That Jacksonian epilepsy might be simply an integral part of the entire expression of a case of idiopathic epilepsy. Jacksonian epilepsy due to cortical discharge might occur as the result of tumors in other parts of the brain than the motor zone. The irritation, owing to its intensity, spread to the motor cortex, and it was probable, also, that in some of these cases, unusual instability of the motor cells played some part. A midfrontal or even a prefrontal tumor not infrequently invaded caudally until the motor region was grazed or implicated, Jacksonian spasm of typical form, showing itself after psychical graphic and speech disorders, had become prominent. In some instances Jacksonian epilepsy, apparently of the usual motor area type, was observed in tumors of the cerebellopontine angle, or of the cerebellum. In two cases which had come under the speaker's observation, cerebellopontine tumors caused Jacksonian epilepsy, or what appeared to be that affection. The gross lesions of the motor area which caused monospasm or hemispasm, counterparting that produced by neoplasm, were (1) depressed fractures; (2) localized meningitis; (3) meningeal or cortical hemorrhage; (4) focal hemorrhagic encephalitis or cortical polioencephalitis; (5) focal necrosis occurring from embolism or thrombosis, including cases associated with generalized arteriosclerosis.

Dr. Edward D. Fisher said he judged from Dr. Mills' paper that he included under the term Jacksonian epilepsy everything that corresponded to a localized convulsive seizure, irrespective of the condition of consciousness. He apparently disregarded the latter factor, taking a broader view of localized or focal seizures. The usual idea in describing Jacksonian epilepsy had been that in such an attack the convulsive seizure began, for example, in one hand, then passing to the arm and face, and finally becoming general. During the onset of such an attack the patient might remain conscious, and even be able to describe certain features of it, but consciousness was lost as the convulsion became general. Exactly such a case, Dr. Fisher said, recently came under his observation. The patient would say, "I am going to have an attack"; then the hand would close, the forearm would become flexed, and the arm raised from the side of the body; then, as the convulsion became general, unconsciousness would supervene. In that case an operation revealed a small, tuberculous tumor in the hand center, anterior to the fissure of Rolando. Dr. Fisher said he did not believe there was much more to be learned in regard to the motor area of the brain. Future investigations might show some slight differences in regard to the exact distribution of the functional motor areas, but nothing more, and it would prove of slight practical importance, from either a medical or surgical point of view, to learn that the various centers overlapped to a slight degree. In regard to the diagnosis of brain tumor, one of the most important symptoms was the motor disturbance, with or without resulting paralysis. The general symptoms, which Dr. Mills had described so fully, might be absent entirely. In the case of tuberculous tumor, to which he had already referred, there were no sensory disturbances at all, and it was not positive that a tumor existed until it was actually demonstrated at the time of operation. Even with slow-growing brain tumors of considerable size very few symptoms might be present. In speaking of convulsions as a diagnostic feature of brain tumor, Dr. Fisher said he thought there was considerable difference in the facies of a patient who had epileptic convulsions resulting from brain tumor, and one who was suffering from idiopathic epilepsy. The mental appearance accompanying Jacksonian epilepsy was better than that in idiopathic epilepsy; the former patient was in no sense demented; between the attacks his mind was entirely clear, whereas in advanced cases of idiopathic epilepsy that was not so.

Dr. Starr said he was inclined to agree with Dr. Mills that the neurologist had perhaps been too ready to base

a diagnosis of brain tumor upon the history of a Jacksonian attack. From his own experience, the speaker said he was now somewhat reluctant to make a diagnosis of tumor in the motor zone in a case in which Jacksonian epilepsy was the only manifestation: with tumors in that region, we should have not only local irritation, but also, as the tumor progressed, we should get evidences of destruction of tissue, giving rise to some form of paralysis in connection with or following the spasm, and that paralysis would naturally become more pronounced as the growth increased in size. Dr. Starr said he realized that Jacksonian epilepsy could be caused by tumors both in front of and behind the motor zone. He reported such a case that recently came under his observation. In another case which he saw, typical Jacksonian fits were apparently due to uremia, as nothing was found in the brain either at the time of operation, or subsequently at post mortem. Jacksonian epilepsy might also occur in old people in connection with apoplectic attacks.

Dr. Dana said he thought idiopathic epilepsy of the Jacksonian type was extremely rare, but it was the only type in which it was wise to operate, even if no tumor or organic lesion was suspected. He recalled one such case in which the patient was relieved of his attacks for two years by excision of the cortex. In another case, which was also relieved, the patient was lost sight of. He said he was rather skeptical in regard to the cases reported by Dr. Mills in which Jacksonian fits were produced by cerebellopontine tumors, and he was inclined to believe that the convulsions were the result of direct irritation of the seventh nerve and not a cortical discharge.

Dr. L. Pierce Clark said it was well known that a certain number of cases of idiopathic epilepsy were masked as Jacksonian epilepsy. In his study upon exhaustion paralysis in epilepsy at the Craig Colony he had found that these cases were by no means rare. They formed about two per cent. of the total admissions. In differentiating between the two types of epilepsy, one should not only take into consideration the character of the spasm itself, but also the absence or presence of the mental stigmata of idiopathic epilepsy, and the imperfect and slow loss of consciousness of Jacksonian epilepsy. The weakness in parts previously convulsed was different in the two types: in idiopathic epilepsy it was very transient; in Jacksonian epilepsy it was more or less permanent. The other symptoms of brain tumor would make diagnosis easy in Jacksonian spasm if all the cases were due to neoplasm, but unfortunately the great majority of the cases difficult of diagnosis were those due to small cortical hemorrhage and local meningoencephalitis. It was particularly difficult to differentiate the latter class from true idiopathic epilepsy. The diagnosis would not be so important if we ceased to urge operation in the local encephalitis cases, and the speaker said he had never seen such a case permanently benefited by operation. There were not a few permanent residents at the Craig Colony illustrating that view point.

The discussion was continued by Dr. T. P. Prout, and closed by Dr. Mills.

College of Physicians of Philadelphia; Section on General Medicine.

At a stated meeting held April 9, Dr. T. L. Coley exhibited a girl, about fifteen years old, who presented a tumefaction in the epigastric and umbilical regions, yielding dullness on percussion in its upper portion and a tympanitic note below. There was also a certain amount of lordosis in the lumbar region. The formation was thought to be a neoplasm and an exploratory operation was contemplated. Under ether narcosis, however, the mass disappeared entirely. The conclusion was now reached that the condition was dependent upon contraction of portions of the abdominal recti muscles, due perhaps to faulty posture. It was found that the phenomena reappeared on the return of consciousness, although they could be dissipated by removal of the lordosis through placing a pillow beneath the lumbar spine. There were no other stigmata of hysteria, and the patient was a bright-cheeked, red-lipped, well-nourished girl. Dr. H. A. Hare reported "A Fatal Case of Acute Dilatation of the Stomach." The patient was a man suffering from an attack of typhoid fever, who, while under observation it was discovered had been habituated to the use of morphine. Hyoscin was administered in effective doses every two hours, and the man appeared to be doing well, when suddenly in the night without warning he died. On post-mortem examination the stomach was found enormously dilated and occupying almost the entire abdominal cavity. Dr. D. J. Milton Miller presented a communication entitled "Some Accidental Eruptions in the Course of Typhoid Fever." In observations made in a series of 250 cases of typhoid fever he had encountered a variety of accidental rashes in 16, some erythematous, others papular, still others vesicular. Dr. Norman B. Gwyn read a paper entitled "Orchitis in Typhoid Fever, with a Report of Two Cases." The association is believed to be a rare one, as only a comparatively small number of cases is recorded in the literature. In some cases the affection is due to lodgment in structures of testicle or epididymis of typhoid bacilli brought by way of the bloodstream. Suppuration sometimes takes place, with partial destruction of tissue.

Philadelphia County Medical Society.

At a stated meeting held April 11, Dr. George E. Pfahler exhibited "A Modification of Benoist's Penetrometer," an instrument for measuring the intensity and penetrating power of the *x*-ray. Dr. William M. Angney demonstrated "A First-aid Dressing Adopted by the Police Department of Philadelphia." This consisted of several strips of borosalicylated gauze of different lengths enclosed in a sealed and sterile receptacle, that can be used as pads and bandages. Dr. James M. Anders delivered "The Address of the Retiring President," in which he reviewed the more important work accomplished by the Society during the preceding year. He also pointed out directions in which he thought the Society might take up new work in the way of lectures, demonstrations, addresses, the offering of prizes, the institution of collective investigations. He strongly commended the establishment of branches of the central society, with occasional joint meetings, both scientific and social. He committed himself to the policy of extending membership to all reputable practitioners of medicine, regardless of their school of graduation, provided, however, they abjured sectarian practice and designation. Dr. Albert P. Francine read a paper entitled "The Treatment of Gastroptosis," in which he detailed mechanical and medicinal measures that have proved serviceable in the relief of the condition named. Dr. Henry D. Beyea read a paper entitled "The Surgical Treatment of Gastroptosis." He described the method of procedure that he devised some eight years ago and that he has now practised in a moderate number of cases with admirable success, namely, plication of the gastrohepatic ligament.

Professional Amenities.—A writer in the *British Medical Journal* notes that no love was lost between Scarpa and Rasori, who were contemporary teachers at Pavia. One day Scarpa was standing under the portico of the university when Rasori, who happened to pass, let fly a jibe at his brother professor. Scarpa replied: "Some time or other the *razor* must lose its edge.' To which came the retort from Rasori: "It will always be sharp enough to cut a *shoe*" (*scarpa*).

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery	Montgomery	July 1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	July 2
Arkansas*	J. P. Runyan, Little Rock	Little Rock	July 10
California	Chas. L. Tisdale, 530 California Street, San Francisco	San Francisco	August 21
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July 3
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July 10
Delaware	P. W. Tomlinson, Wilmington	Dover	December 11
Dis. of Col'bia	W. C. Woodward, Washington	Washington	July 12
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	October 17
Georgia	E. R. Anthony, Griffin	Atlanta	October 9
Idaho	J. L. Conant, Jr., Genesee	Lewiston	October 2
Illinois	J. A. Egan, Springfield	Chicago	July 11
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October 23
Iowa	J. F. Kennedy, Des Moines	Des Moines	September
Kansas	T. E. Raines, Concordia	Topeka	October 9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October 23
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	October 19
Maine	Wm. J. Maybury, Saco	Augusta	July 10
Maryland	J. McP. Scott, Hagerstown	Baltimore	December 12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	July 10
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Lansing	October 9
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	October 2
Mississippi	J. F. Hunter, Jackson	Jackson	October 9
Missouri	J. A. B. Adcock, Warrensburg		
Montana*	Wm. C. Riddell, Helena	Helena	October 2
Nebraska	Geo. H. Brash, Beatrice	Lincoln	
Nevada	S. L. Lee, Carson City	Carson City	August 6
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July 6
New Jersey	E. L. B. Godfrey, Camden	Trenton	October 16
New Mexico	B. D. Black, Las Vegas	Santa Fe	December 3
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo,	Sept. 25
N. Carolina*	Geo. W. Pressly, Charlotte	Charlotte	
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July 3
Ohio	Geo. H. Matson, Columbus	Cincinnati, Cleveland, Columbus,	December 11
Oklahoma	J. W. Baker, Enid	Guthrie	June 27
Oregon*	B. E. Miller, Portland	Portland	July 11
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburg,	December
Rhode Island	G. T. Swarts, Providence	Providence	July 5
S. Carolina	W. M. Lester, Columbia	Columbia	June, 1907
S. Dakota	H. E. McNutt, Aberdeen	Watertown	July 11
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May, 1907
Texas	T. T. Jackson, San Antonia	Dallas	October 16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July 2
Vermont	W. Scott Nay, Underhill	Burlington	July 10
Virginia	R. S. Martin, Stuart	Richmond	December 11
Washington*	C. W. Sharples, Seattle	Tacoma	July 3
W. Virginia*	H. A. Barbee, Point Pleasant	Charleston	July 10
Wisconsin	J. V. Stevens, Jefferson	Madison	July 10
Wyoming	S. B. Miller, Laramie	Cheyenne	September 5

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Standard of Requirements Raised.—At a meeting of the Illinois State Board of Health, recently held at the Great Northern Hotel, Chicago, the President of the Board, Dr. George W. Webster, introduced a resolution, which was unanimously adopted, requiring all applicants for entry to medical colleges to have completed a nine months' course in chemistry, biology, physics, and languages, in addition to the requirements for obtaining their regular grammar and high school diplomas. This lengthens the regular course a full year. These new subjects may be taken from any recognized institution teaching these subjects in regular course. This resolution does not go into effect until 1910.

Reciprocity in Vermont.—It is announced that hereafter the Board of Medical Registration of Vermont will issue licenses without examination to reputable physicians and surgeons who appear personally and present a certified copy of certificate of registration, or license, which has been issued to said applicant in another State where the requirements for registration are deemed equivalent to those of Vermont, provided such State accords a like privilege to holders of a license granted under the laws of Vermont. Each applicant for such license must pay a registration fee of ten dollars.

Mississippi.—At the spring examination, held in Jackson, there were 231 candidates, of which number 118 passed and 113 failed to pass.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending June 23, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	396	177
Diphtheria	288	16
Measles	611	20
Scarlet Fever	160	4
Smallpox	4	—
Varicella	110	—
Typhoid Fever	33	2
Whooping Cough	35	4
Cerebrospinal Meningitis	8	9
Malarial Fever	.....	....
Totals	1,645	232

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending June 23, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Alaska, Nome	June 14–15	6	On Schr. *Monterey.*
California, Los Angeles	June 2–9	1	..
Florida, General	June 9–16	6	.
Jacksonville	June 9–16	3	
Georgia, Augusta	June 4–11	3	
Sapolo Island	To June 12	6	.
Louisiana, New Orleans	July 9–16	5	
Michigan, Detroit	June 9–16	2	..
Montana, General	May 1–31	6	
New York, Monroe	June 19	1	
Saratoga Springs	June 19	1	
New York	June 9–16	4	
North Dakota, General	Apr. 1–30	25	4
Ohio, Cincinnati	June 8–15	12	.
Hamilton	May 12–19	1	.
Youngstown	May 16–June 15	3	
Oklahoma Territory, Oklahoma	June 2–9	8	1
Oregon, General	May 1–31	36	1
Pennsylvania, Allegheny	June 9–16	1	..
Pittsburg	May 26–June 9	5	3
Tennessee, Knoxville	June 9–16	1	
Memphis	June 2–16	5	.
Utah, General	May 1–31	70	.
Wisconsin, Appleton	June 9–16	2	..

SMALLPOX—FOREIGN.

Africa, Cape Town	May 5–12	4	
Freetown	May 14	.	Present.
Belgium, Liege	May 10–26	1	1
Brazil, Pernambuco	May 8–15	.	5
Chile, Antofagasta	May 20	.	Present
Coquimbo	May 20	.	Present.
Iquique	May 20	.	Epidemic.
Talkahuana	May 20	.	Present.
France, Paris	May 12–26	16	..
Gibraltar	May 27–June 3	2	..
Great Britain, Liverpool	May 26–June 2	2	..
London	May 26–June 2	3	.
India, Bombay	May 15–22	.	5
Calcutta	May 6–12	.	57
Karachi	May 13–20	15	11
Madras	May 12–18	.	11
Rangoon	May 6–12	.	23
Italy, General	May 25–31	27	..
Peru, Callao	May 12–19	1	..

CHOLERA.

India, Bombay	May 15–22	.	20
Calcutta	May 6–12	.	42
Rangoon	May 6–12	.	4

YELLOW FEVER.

Costa Rica, Limon	June 20	1	.
Cuba, Habana	June 18–21	2	.
Honduras, Pimienta	May 19–23	20	..
*Mexico, Merida	May 27–June 9	3	1

*Case reported at Coatzacoalcos in report for June 8, 1905, found not to be yellow fever.

PLAGUE—INSULAR.

Hawaii, Honolulu	June 15	.	1

PLAGUE—FOREIGN.

Australia, Brisbane	Apr. 28–May 5	1	1
Rockhampton	Apr. 28–May 5	1	..
Brazil, Pernambuco	May 1–15	.	1
Egypt, General	May 17–31	34	12
Alexandria	May 29	1	..
Port Said	May 26	2	1
India, Bombay	May 15–22	..	511
Calcutta	May 6–12	..	92
Karachi	May 13–20	144	135
Rangoon	May 6–12	..	69
Peru, Lambayeque	May 6–13	2	..
Lima	Apr. 30–May 13	9	..

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